

Annual Progress Report (APR)



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East Dunbartonshire Council

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2021 Air Quality Annual Progress Report (APR) for
East Dunbartonshire Council

In fulfilment of Part IV of the
Environment Act 1995

Local Air Quality Management

July 2021

East Dunbartonshire Council

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Report Reference Number	EDC_APR_2021
Date	July 2021

Executive Summary: Air Quality in Our Area

Air Quality in East Dunbartonshire Council

This report is the 2021 Annual Progress Report undertaken in accordance with East Dunbartonshire Council's statutory obligation under the National Air Quality Strategy.

The report considers measured pollutant concentrations across East Dunbartonshire for the calendar year of 2020 and considers the potential for exceedences of the air quality objectives.

In East Dunbartonshire, the main pollutants of concern are NO₂, PM₁₀ and PM_{2.5} and the source of pollutant is mainly due to the volume of traffic and congestion. As a result of the Covid pandemic and several lockdowns with restricted travel, a noticeable reduction in volume of traffic and congestion has been noted resulting in a considerable reduction across East Dunbartonshire in pollutant levels.

East Dunbartonshire Council has four continuous automatic analysers; one in Bishopbriggs, one in Bearsden, one in Kirkintilloch and one in Milngavie. This equipment downloads automatically and pollutant levels can be viewed via the Council web page or Scottish Air Quality website. Calibrations and servicing of equipment continued to be undertaken throughout 2020 in line with Corona Virus protocols.

Monitoring over 2020 indicates a continuing overall downward trend in annual mean NO₂ concentrations, and levels further reduced considerably at all four monitoring sites. There were no exceedences of the annual mean objective level at any of our sites in East Dunbartonshire and Milngavie recorded the lowest annual mean level of 15 µg/m³.

All four sites recorded levels well below 10% of the air quality objective for annual mean NO₂.

Annual mean PM₁₀ levels reduced considerably and again, this may be due in part to the effect of the corona virus travel restrictions imposed at various points throughout the year. There were no exceedences of the Scottish objective levels at any of the four continuous monitors. The lowest annual mean PM₁₀ level was 8 µg/m³ and was recorded at the Bearsden site.

Annual mean PM_{2.5} levels were monitored at all four sites for the first time and all are well within the Scottish objective level of 10 µg/m³. Although annual mean PM_{2.5} levels reduced, the reduction is on a smaller scale than that observed for NO₂.

There are no new major sources of emissions and there has been little in the way of commercial biomass installations however, the installation of domestic wood burning stoves, and complaints concerning their use, continue to be received.

There are two AQMAs in East Dunbartonshire: one in Bishopbriggs and one in Bearsden. No new AQMAs were declared during 2020. NO₂ tubes which were added to the network in response to concerns raised in an area of Bishopbriggs and to investigate background levels in several areas of Milngavie will mostly be removed. Some of these diffusion tubes will be retained to continue to gather information for a longer period.

East Dunbartonshire Council intend to revoke the Bearsden AQMA designation for exceedences of both the NO₂ and PM₁₀ annual mean however; it is not our intention to revoke the Bishopbriggs AQMA at this stage. The initial report proposing revocation of the Bearsden AQMA has been approved formally by the Scottish Government and informally by Sepa. The paperwork for committee approval has been prepared and we hope to move forward with the revocation process during 2021.

Air quality is a material consideration in terms of planning which means that all local development is considered in terms of air quality to ensure implications are examined and considered in advance and appropriate consultation takes place with such partners as the Scottish Environment Protection Agency (SEPA), Transport Scotland and Scottish Natural Heritage (SNH).

Actions to Improve Air Quality

Although calibration and servicing of air quality equipment continued to be undertaken in line with corona virus protocols, the bulk of planned air quality projects and action planning was postponed or cancelled.

Additional NO₂ tubes which were added to the network in response to concerns from residents in an area of Bishopbriggs have now yielded a full year of results which confirm that no further action is required at this stage.

During 2020, the membership of ECO Stars, a vehicle fleet recognition scheme introduced in 2017, was further increased to 155 members covering 5054 vehicles and helping to improve air quality through the promotion of both fuel efficient driving and ongoing

improvement of the vehicle emissions standards of our freight throughout East Dunbartonshire.

The instruction to staff to work from home from 23rd March 2020 coincided with our plans for a Vehicle Idling/Switch Off Your Engine campaign and the campaign was duly cancelled.

In February 2020, we installed a mobile air quality monitor outside one of our primary schools in anticipation of a school air quality/active travel project which was subsequently cancelled due to the COVID19 pandemic. The data obtained from the monitor was correlating well with school drop off and pick up times and we hope to run the project as and when it is safe to do so.

Air quality is a material consideration in terms of planning which means that all local development is considered in terms of air quality to ensure implications are examined and considered in advance and appropriate consultation takes place. With the ongoing pandemic situation, large scale development appeared to be put on hold with a resultant reduction in air quality impact assessments and air quality monitoring projects.

Local Priorities and Challenges

Our priority in the coming year is to ensure the smooth running of our monitoring network to gain as accurate a picture as possible of air quality levels across East Dunbartonshire. Improvements to our network means that we are able to monitor PM_{2.5} at all four of our sites and have been doing so since May 2020.

We intend to revoke the Bearsden AQMA designation and the initial appraisal report has been accepted and agreed formally with the Scottish Government and informally with Sepa. The paperwork for committee approval has been prepared and we hope to move forward with the revocation process during 2021. Complaints concerning smoke and smell associated with wood burning stoves remain a challenge and have possibly been exacerbated due to people being at home and being more aware of what is going on in their neighbourhood.

How to Get Involved

Further information on air quality in East Dunbartonshire can be found on the Council website [HERE](#). You can visit the Scottish Air Quality website and view live air quality data in East Dunbartonshire at <http://www.scottishairquality.co.uk>. You can register for text and email alerts when air quality is forecast to be poor for the day ahead and can visit the Education pages and involve your children and family – all on the same link which also offers a free app for iPhone and Android for keeping you updated about air pollution in Scotland.

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1 Local Air Quality Management

This report provides an overview of air quality in East Dunbartonshire during 2020. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives. This Annual Progress Report (APR) summarises the work being undertaken by East Dunbartonshire 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	31.12.2020
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

Air Quality Management Areas

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

A summary of AQMA declared by East Dunbartonshire Council can be found in Table 2.1. Further information related to declared or revoked AQMA, including maps of AQMA boundaries are available online at [Link](#)¹.

We propose to revoke Bearsden AQMA (see monitoring section).

¹ <https://uk-air.defra.gov.uk/aqma/list?la=E&country=all&pollutant=all>

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Pollutants and Air Quality Objectives	City / Town	Description	Action Plan
Bearsden	<ul style="list-style-type: none"> • NO₂ annual mean • PM₁₀ annual mean 	Bearsden	The designated area incorporates a 60 metre wide corridor along the A809 to the junction with Antonine Road and to the south beyond Canniesburn Toll to incorporate several road junctions. The eastern boundary is to the east side of Roman Road Carpark with a small section of Stockiemuir Road also incorporated.	<u>Bearsden AQMA Action Plan</u>
Bishopbriggs	<ul style="list-style-type: none"> • NO₂ annual mean • PM₁₀ annual mean 	Bishopbriggs	The designated area incorporates a 60-metre-wide corridor along the A803 Kirkintilloch Road, Bishopbriggs, bordered on the South by the Council's boundary with Glasgow City and by a line 30 metres to the North of Cadder Roundabout.	<u>Bishopbriggs Updated Action Plan</u>

Cleaner Air for Scotland

Cleaner Air for Scotland – The Road to a Healthier Future (CAFS) is a national cross-government strategy that sets out how the Scottish Government and its partner organisations propose to reduce air pollution further to protect human health and fulfil Scotland's legal responsibilities as soon as possible. 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 Dunbartonshire Council against relevant actions within this strategy is demonstrated below.

2.1.1 Transport – Avoiding Travel – T1

All local authorities should ensure that they have a corporate travel plan (perhaps within a carbon management plan) which is consistent with any local air quality action plan.

East Dunbartonshire Council has not adopted a corporate travel plan as yet although work to progress such a plan has continued where possible given the additional challenges faced during 2020. The Plan proposes several alternative travel options to encourage a reduction in private car usage. Adoption of the Plan should result in a reduction of pollutant levels across East Dunbartonshire through the promotion of active travel, increased availability of electric pool cars and associated charging points as well as increased provision of cycle parking and facilities. Electric bikes have been available to staff during 2020 for use during the working day however, where possible, staff have been working from home. It is hoped that a formalised corporate travel plan will be implemented but it is a complex task, which requires working with colleagues across a variety of services such as transport, sustainability and climate change, and environmental health to ensure air quality is given appropriate consideration.

2.1.2 Climate Change – Effective co-ordination of climate change and air quality policies to deliver co-benefits – CC2

Scottish Government expects any Scottish local authority which has or is currently developing a Sustainable Energy Action Plan to ensure that air quality considerations are covered. East Dunbartonshire Council does not currently have a Sustainable Energy Action Plan; however, the Sustainability Policy Team will be proposing to Council that an area-wide Climate Action Plan be prepared; this will set a net zero target for East Dunbartonshire, which we anticipate would have a positive effect on local air quality. It is also anticipated that local air quality will be improved as a result of the proposals set out in the Local Transport Strategy and the Parking Management Plan relating to increasing the number of electric vehicle charging points provided in East Dunbartonshire.

Progress and Impacts of Measures to address Air Quality in East Dunbartonshire

East Dunbartonshire Council has been unable to progress as planned on a number of measures during the current reporting year of 2020 in pursuit of improving local air quality due to the corona virus pandemic. Details of all measures completed, in progress or planned are set out in Table 2.2. More detail on these measures can be found in the air quality Action Plan relating to each AQMA. Key completed measures are: installation of a fourth continuous automatic monitor at our Milngavie site to measure PM₁₀ and PM_{2.5} simultaneously in May 2020 and, the frequency of testing undertaken as part of the taxi licensing procedure has now been increased for vehicles 5 years and over. Annual testing for these vehicles will now be increased to 6 monthly.

Progress on the following measures has been slower than expected due to the pandemic and the cancellation of a number of planned projects such as the Air Quality/Active Travel in Schools Project. We are hopeful that we can progress with this action however, if that proves not to be the case, we hope to create an online package suitable for use in our schools.

Where measures are already complete, no further action will be taken. The remaining outstanding measures are ongoing.

Table 2.2 – Progress on Measures to Improve Air Quality Bearsden Air Quality Action Plan Update

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
1	Maintain contact with Scottish Govt re adoption of national air quality measures	Policy Guidance and Development Control	Increase focus on background concentrations of PM and encourage national action	East Dunbartonshire Council		Ongoing	Compliance across East Dunbartonshire with Scottish Objective levels.	No exceedences across East Dunbartonshire for several years. Revocation process underway for Bearsden AQMA.	NO ₂ , PM ₁₀ and PM _{2.5} now being monitored at all four sites.	Monitoring will continue at all four sites as long as funding allows.	Ongoing target of reducing pollutant levels
2	Promote air quality with planning and transport strategies and other Council Plans	Policy Guidance and Development Control	EDLP2 is currently underway. The LDP provides the planning context for the Local Transport Strategy. The LDP and Local Transport Strategy integrate air quality, planning development and transport planning to mitigate the air pollution effects of traffic. Look for opportunities to enhance joint working between Council Services to encourage potential air quality implications of existing and future Council strategies.	East Dunbartonshire Council		All of these actions are underway and adopted as standard practice Regular joint working takes place		Local planning considerations aim to mitigate the cumulative negative air quality impacts of new development	Local Development Plan 2 is currently underway. The Local Transport Strategy 2020-2025 has been approved.	Ongoing process for continual updating	Air quality planning guidance has been adopted. LTS has been approved. LDP2 due to be submitted 2021 for adoption in 2022
3	Junction improvements- Feasibility study	Traffic management	Model of junction improvements at Bearsden Cross. Provide Council with evidence to assist in decision whether to make appropriate junction improvements.	East Dunbartonshire Council	This work was undertaken during 2013 and no discernible benefit anticipated			Low	This measure was again reconsidered in 2016 but dismissed.		This measure was re-evaluated as part of the consultation response to the Draft Action Plan however, it is no longer under consideration.

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
4	Intelligent traffic management systems	Traffic management	Identify appropriate locations and implement intelligent traffic management systems to improve traffic flow Identify improvements at junctions and consider modifying surrounding environment to achieve maximum benefit	East Dunbartonshire Council		Junction upgraded to Mova 8 in 2018		Medium	Further upgrades are available therefore funding may be sought to improve junction.	Work on Mova 8 complete in 2018	Works completed with air quality funding. There are no current plans for any further upgrades.
5	Parking Controls	Traffic Management	Decriminalise parking Extend the controlled parking zone Additional yellow lines near schools and hotspots	East Dunbartonshire Council		Off street decriminalised parking introduced summer 2016		Small	Charges introduced in council car parks throughout Kirkintilloch, Bishopbriggs, Bearsden and Milngavie.	Ongoing roll out of controlled parking zones.	A number of temporary traffic orders are now in place outside primary schools.
6	Mitigation of emissions from developments within and around the AQMA	Policy guidance and development control	Developments within or impacting on AQMA are reviewed for air quality impacts and where necessary all practical emission mitigation options are considered and implemented.	East Dunbartonshire Council				Small to medium impact	Regular review and updating of LDP and LTS takes account of policies consistent with air quality objectives. Mitigation includes active, sustainable travel measures.	Ongoing standard practice.	All developments requiring a full air quality impact assessment to include a Dust Management Plan as standard

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
			Ensure through planning that all construction / demolition sites have a Dust Management Plan.	East Dunbartonshire Council		Already implemented		Small to medium impact	Included as planning condition as part of consultation process	Ongoing standard practice	All Planning Applications involving demolition have dust control measures included as a condition.
7	Air quality planning guidance	Policy guidance and development control	Improving links with Local Planning and Development Framework ensures a consistent approach to air quality impact assessment	East Dunbartonshire Council	2017	2018		Small to medium	Planning guidance adopted 2018.	This measure is now complete although guidance will be updated as necessary	Developers will know at the start of the planning process what is expected from them.
8	Fleet waste collection	Traffic Management	Reduce emissions from source by reducing number of vehicles on road at any one time Seven day a week operation has reduced the overall number of vehicles required to operate the service	East Dunbartonshire Council		Implementation complete		Small - medium	Fortnightly fleet waste collection as standard	This measure is now complete with no plans to make any further alteration	Altered shift patterns leads to less heavy vehicles in use across EDC area at any one given time. Early start and weekend working spreads the use of vehicles reducing peak travel time emissions
9	Council fleet replacement programme	Vehicle fleet efficiency	Continue current replacement programme Pool EDC will attempt to increase the availability of electric/hybrid vehicles to appropriate staff	East Dunbartonshire Council		Ongoing		High	42 electric fleet vehicles now in use.	No planned completion date- pool EDC vehicles continue to be upgraded with increased availability of electric vehicles.	Continuous ongoing implementation

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
			Increase number of charge points across EDC area						Increase in charge points to 16 with a further 19 planned during 2021/2022.		
10	Environmental fleet recognition scheme	Vehicle fleet efficiency	Environmental Fleet Recognition Scheme rates individual vehicles using a star rating system, to recognise levels of operational and environmental performance. It aims to reduce the energy used by commercial and passenger transport fleets by encouraging increased adoption of fuel efficiency measures. This will bring about benefits for members through more efficient operations, reduced fuel costs and emissions.	EDC, TRL and all members		2017 onwards		Medium	Approx 118 vehicles within EDC Fleet assessed and graded at 4* with 65 vehicles at 5* Approx. 155 members overall of the EDC scheme with 5054 vehicles.	Current contract runs until September 2021	This measure will continue as funding allows
11	Vehicle idling enforcement	Vehicle fleet efficiency	The Council has adopted the necessary enforcement powers to allow staff to undertake monitoring of engine idling, including buses, and where appropriate, enforce financial penalties for non-compliance	East Dunbartonshire Council – Community Protection		Powers adopted in 2006		Small	Regular monitoring patrols are undertaken when appropriate.	Ongoing as resources allow	No fixed penalties issued to date as policy of education is adhered to. Drivers always asked to switch off.

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
			Regular vehicle idling awareness raising campaigns are undertaken with distribution of leaflets and advice						Individual complaints investigated.	Planned campaigns postponed due to pandemic. Plan to reinstate.	
12	Management of biomass installations	Promoting low emission plant	Suitably manage biomass installations in the domestic sector Suitably manage biomass installations as part of the planning process	East Dunbartonshire Council		Due to impending change in legislation ie all new appliances to be exempt, all planning applications involving a wood burning stove have an appropriate informative added		Medium	Reactive work undertaken in responding to complaints. Many installations do not require planning permission		Biomass has a negative impact on air quality unless appropriate abatement is installed. Any application installing biomass as CHP requires full AQIA. No new large scale applications received since reduction of incentives
13	Quality bus/bike partnerships	Promoting travel alternatives	Consider extending opportunities to improve infrastructure and create further cycle/bus corridors in other areas of Bearsden Expand the network with new cycle and walking routes both within towns and the countryside dedicated for active travel use to avoid conflict with motor vehicles	East Dunbartonshire Council, SPT and Sustrans					Core paths in Bearsden upgraded 2017/18. New links created to provide traffic free link to bus stop on Drymen Road and Bearsden Academy.		No plan to extend Bearsden Cycle Path. Cycle and walking routes will be developed where possible.
14	Council smart working	Promoting travel alternatives	Smart working means being more flexible about when and where employees work and how technology is used to find new and more efficient ways to do things.	East Dunbartonshire Council		Already implemented		Medium	The pandemic has had a huge impact on this measure. All staff working		Travel patterns completely changed during various lockdowns. Large scale positive impact on pollutant levels across East Dunbartonshire.

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
									from home where possible throughout EDC.		
15	Green travel planning	Promoting travel alternatives	Travel plans aim to address the negative impacts of car travel by encouraging sustainable forms of transport, such as walking, cycling and public transport; or reducing the need for travel.	East Dunbartonshire Council				Small	Pool bikes are available for staff use however there has been a reduction in staff movement due to working from home during the pandemic.		Green travel alternatives are encouraged for EDC staff. Green travel planning is an important element of large scale planning applications
16	School travel plans	Promoting travel alternatives	All new build schools within EDC require a school travel plan as part of their planning permission ensuring pupils are catered for and presented with sustainable travel options.	East Dunbartonshire Council		Already implemented as standard		Small	All new build schools within EDC include travel plans as standard		It is incumbent upon the school to keep existing school travel plans up to date
17	Air quality awareness raising and education	Public information	Raise awareness in schools by involving pupils in science projects, art competitions and planting days Raise awareness among EDC staff via regular informative updates	East Dunbartonshire Council		Ongoing		Small	Various projects already undertaken and more planned in schools as part of science and maths curriculum	Ongoing	Projects undertaken as funding allows
18	Travel plans for large employers	Promoting travel alternatives	Strategic development and regeneration team to ensure all relevant commercial planning applications have travel	East Dunbartonshire Council		Ongoing		Small	Ongoing		Travel plans submitted where appropriate with large scale developments.

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
			plan conditions applied in accordance with current best practice								This may be affected by the need for travel and home working.
19	Eco driver training	Vehicle fleet efficiency	Training for Council Staff as well as fleet. Fuel good training can help individuals become more efficient drivers either at work or during leisure and help save money on fuel costs	East Dunbartonshire Council	2019	Ongoing	No of staff completing Eco Driver Training	Small	Employees trained in Fuel Good Driving Techniques	employees trained in Nov/Dec 2019. More to follow if Covid protocols allow	This measure will continue as funding allows. Sessions offered to all staff who drive as condition of employment and added to CPD. Funding in place to extend scheme once Covid levels are such that car sharing can take place.
20	Council pool cars – priority spaces and car sharing	Vehicle fleet efficiency	Council pool cars to have prioritised parking spaces Car sharing database to be updated (introduced in 2016)	East Dunbartonshire Council, SPT and Liftshare				Small	Priority spaces designated for pool cars at all Council buildings 117 employees signed up to SPT Journey share/Liftshare		Relaunch due of car sharing availability website and database. No overall increase in number signed up. Car sharing has been problematic during the pandemic and will only be encouraged when it is safe to do so.
21	Vehicle emission testing	Vehicle fleet efficiency	EDC undertakes vehicle emission testing within AQMAs and other parts of the area. Fixed penalty notices are served for vehicles	East Dunbartonshire Council, North Lanarkshire Council, Police Scotland		Powers adopted in 2006	No of fixed penalties served	Low	The no of vehicles tested during 2019 was greatly reduced	Ongoing as funding allows	No testing undertaken during 2020 due to pandemic. Unlikely

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
			failing to meet the appropriate emission standards, although there is an option to have a faulty vehicle repaired and re tested.						from previous years due to the change in emphasis to awareness raising and idling patrols		to be reinstated and education/patrols will be the way forward.
22	Vehicle tracking and telematics	Vehicle fleet efficiency	Vehicle tracking systems help monitor and manage fleet operations providing real time information which can help towards the reduction of fuel use and emissions, carbon reduction, encourage better driving techniques and put a stop to any council vehicles engine idling	East Dunbartonshire Council				Small	Master naught vehicle tracking installed in all fleet and pool vehicles	Complete	No plan to upgrade
23	Improvements to SPT prioritised bus stops	Promoting travel alternatives	Upgrading of bus stops to encourage active travel	East Dunbartonshire Council, SPT				Small	Improvements to bus stops on A81 and A809 Drymen Road have been undertaken	The process of improving SPT bus stops will continue as required and as funding allows.	New Real Time Passenger Information units have been installed at ten bus stops in Bearsden with an additional 8 programmed for 2020/21. There has also been improvements to bus shelters within Bearsden Town Centre.
24	Soft measures – Healthy Habits	Promoting travel alternatives	The Healthy Habits campaign seeks to inspire people to choose active travel such as walking and cycling.	East Dunbartonshire Council				Small	The Healthy Habits project is ongoing with new initiatives continually	Projects will continue as funding allows.	EDC's new Walking and Cycling Map was launched in 2019 with great success, new signage and route markings are

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
									developed to encourage local people to walk and cycle more often.		due for completion Summer 2020. Work progressed where possible.
25	Domestic emissions and fuel consumption awareness raising	Public information	Support for awareness raising of energy efficient measures by Scottish and UK government	East Dunbartonshire Council				Small	Works to include external wall insulation rewiring, improving ventilation in kitchens and bathrooms and double glazing due for completion in all properties by end of 2020/2021. Solar thermal projects complete or underway in Bearsden.	2021	Some of these measures are undertaken as funding allows. Planned works postponed due to pandemic. Further installation of renewable technologies planned if funding bid is successful
26	Tree and wild flowers planting	Public information	Undertake planting schemes within or adjacent to Bearsden AQMA	East Dunbartonshire Council		Undertaken when funding is available		Small	Trees, shrubs and wildflower meadows planted throughout Bearsden AQMA	Ongoing as funding allows	Planting undertaken where funding allows
27	Joint health improvement plan	Public Information	The Joint Health Improvement Plan seeks to work with local communities and	East Dunbartonshire Council, NHS Greater				Small	Ongoing		No partnership meetings have taken place during 2020 due to the

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
			residents in joint effort to improve health and address health inequalities	Glasgow and Clyde					Increased awareness of increasing active travel to help control the impact of obesity on the NHS		pandemic and reallocation of staff however the importance of active travel on health and green spaces/walking on mental health has become more apparent during lockdown.
28	Green Infrastructure	Public Information	Expand the programme of installing sustainable energy measures	East Dunbartonshire Council					LDP Supplementary Guidance on Green Infrastructure and Green Network is available on line		Solar panels still being installed. Increase in CHP installations. All Council new build now with CHP and air source heat pumps.
29	Taxi Licensing	Promoting low emission transport.	Consider means of reducing emissions from taxis and private hire vehicles in AQMA	East Dunbartonshire Council				Small		Approved by committee during 2020	Frequency of testing increased from annually to every 6 months for vehicles 5 years and over

BISHOPBRIGGS ACTION PLAN UPDATE – REMAINING OUTSTANDING MEASURES

Table 2.3 – Progress on Measures to Improve Air Quality Bishopbriggs Action Plan Update – Remaining Outstanding Measures

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
4	Support the construction of phases 3 to 5 of the Bishopbriggs Relief Road (BRR) to the east of Bishopbriggs.	Traffic management	<p>Construction of the Bishopbriggs Relief Road (Phase 5) is intended to support development sites at Westerhill, however would also be expected to attract vehicles currently using the A803 through Bishopbriggs as it provides a more direct link to the M80 and wider strategic road network. A reduction in trips on the A803 would be expected to reduce traffic congestion and the associated air quality impacts with queued traffic.</p> <p>In addition to the potential reduction in traffic on the A803 due to the BRR5, the City Deal plans also include improvements to the A803 corridor from Torrance Roundabout to Glasgow to increase sustainable travel on the route. This will include measures to encourage a shift from private car to bus and active travel, with subsequent benefits to health and the environment.</p>	EDC & Transport Scotland	Procurement process underway to appoint designers.	<p>Phase 3 opened 2015.</p> <p>Phase 4 opened June 2018</p>	Traffic levels on both BRR Phase 5 and A803 will provide an indication of success of measure. Mode shift from private car to bus/rail and cycling/walking will also provide an indication of performance.	Medium	Procurement process underway to appoint designers.	2025	With City Deal funding approved, the City deal team are currently preparing for procurement of design consultants for BRR Phase 5 and the A803 Corridor Improvements.

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
7	Investigation of options in Bishopbriggs town centre to improve access to Bishopbriggs station and opportunities for active travel.	Promoting travel alternatives	As part of the A803 Corridor Improvements and the Bishopbriggs Town Centre (BTC) regeneration design work (both City Deal projects), walking and cycling to/from the town centre will be promoted. It is expected that Completion of the BRR will assist in reducing traffic levels on the route through the town centre, which will combine with these projects to improve opportunities for active travel. To be tested through the business case process.	Network Rail & EDC	Procurement process underway to appoint designers for the A803 and BRR. Public realm designs are being developed by appointed consultants for the BTC project.		Increased walking and cycling provision in the town centre to encourage active travel. Reduced levels of car trips through the town centre. Increase in footfall through the TC.	Small			
8	Investigate options for a Bishopbriggs East / Westerhill transport hub comprising a bus terminal, rail halt and park and ride facility.	Promoting travel alternatives	City Deal funding was approved to advance the Outline Business Cases for transport infrastructure improvements in Bishopbriggs. Work is underway to appoint designers for the BRR Phase 5 (including Westerhill masterplan) and sustainable travel improvements on the A803 corridor. These are likely to include measures such as bus lanes and bus priority at junctions, along with increased active travel provision. The likely impacts of rail	EDC, SPT & Transport Scotland							The benefits of a Bus Park and Ride at or near the BRR/Westerhill were assessed as part of the Strategic Business Case development, and will be further tested as part of the OBC process to determine whether they will form part of the sustainable transport improvements as part of the City Deal projects

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
			improvements and park and ride options were considered as part of the Strategic Business Case development, and will be further considered as part of the OBC process to determine whether they will form part of the sustainable transport improvements as part of the City Deal projects.								
9	Where possible encourage the establishment of partnerships between public transports to provide more joined up inter-modal transport options.	Promoting travel alternatives	As Programme partner SPT are engaging with transport providers to determine viability of inter-modal options, although there is limited interest.	EDC, SPT & local bus operators					Ongoing		A sustainable transport bus corridor is planned as part of the City Deal funding package
11	Produce a public transport access map.	Public information	This can be investigated in coordination with SPT, but may not form part of the City Deal work.	EDC,SPT				Small	A public transport map would be best undertaken by SPT given their database of registered bus services etc. SPT currently has no		

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
									funding available for such an undertaking		

There is now a City Deal Team in place actively taking forward a number of proposals aimed at making infrastructure and active travel improvements in Bishopbriggs. The following projects are included in the plans:

- Completion of Bishopbriggs Relief Road Phase 5 (BRR 5)
- Sustainable transport corridor along the A803 with bus priority throughout the route
- Connection with the Glasgow Active Travel network across North Glasgow
- Extensive public realm works within Bishopbriggs Town Centre – There is currently a Bishopbriggs Town Centre Regeneration Consultation open to the public giving them an opportunity to help shape the future of Bishopbriggs Town Centre as part of the City Deal Project.

3 Air Quality Monitoring Data and Comparison with Air Quality Objectives

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 Dunbartonshire Council undertook automatic (continuous) monitoring at 4 sites during 2020. Table A.1 in Appendix A shows the details of the sites. National monitoring results are available at www.scottishairquality.co.uk

The annual mean ranged from 15 – 20µg/m³ across East Dunbartonshire demonstrating compliance with the 40 µg/m³ air quality objective.

Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C. In May 2020 East Dunbartonshire Council replaced the TEOM FDMS PM₁₀ analyser at Park Road, Milngavie, with a FIDAS optical measurement system.

Maps showing the location of the monitoring sites are provided in Appendix D.

3.1.2 Non-Automatic Monitoring Sites

East Dunbartonshire Council undertook non- automatic (passive) monitoring of NO₂ at 56 sites during 2020. The diffusion tubes were analysed by GSS, which is a UKAS accredited laboratory, and the data from these tubes was compared against the annual average objective for NO₂. Table A.2 in Appendix A shows the details of the sites.

Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in Appendix C.

Maps showing the location of the monitoring sites are provided in Appendix D.

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.

3.1.3 Nitrogen Dioxide (NO₂)

Table A.3 in Appendix A compares the ratified and adjusted monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40 µg/m³.

For diffusion tubes, the full 2020 dataset of monthly mean values is provided in Appendix B.

Table A.4 in Appendix A compares the ratified continuous monitored NO₂ hourly mean concentrations for the past five years with the air quality objective of 200µg/m³, not to be exceeded more than 18 times per year.

Trends in Air Quality Monitoring Sites

There is a general improvement in the concentration of NO₂ across all the monitoring sites and concentration of NO₂ measured across the AQMAs and air quality in the council area as a whole has improved over time.

Similarly across the UK, the annual mean data trend between 2007 and 2019 also demonstrates that the NO₂ concentration both in urban and rural monitoring sites has improved: <https://www.gov.uk/government/publications/air-quality-statistics/nitrogen-dioxide>

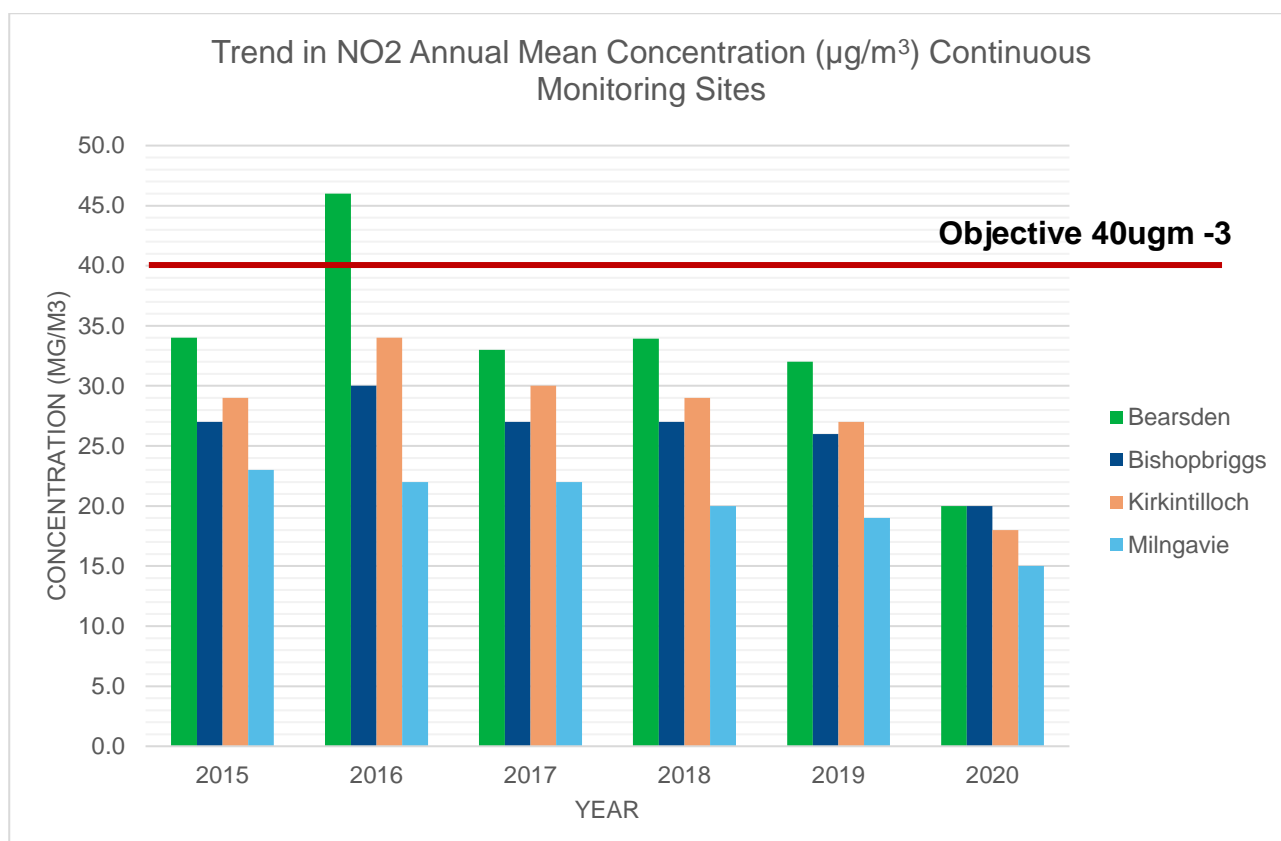


Figure 1 - Nitrogen dioxide trend in East Dunbartonshire Council

3.1.4 Particulate Matter (PM₁₀)

Table A.5 in Appendix A compares the ratified and adjusted monitored PM₁₀ annual mean concentrations for the past five years with the air quality objective of 18µg/m³.

Table A.6 in Appendix A compares the ratified continuous monitored PM₁₀ daily mean concentrations for the past five years with the air quality objective of 50µg/m³, not to be exceeded more than seven times per year.

There were no exceedances of the air quality objectives for this pollutant within East Dunbartonshire 2020.

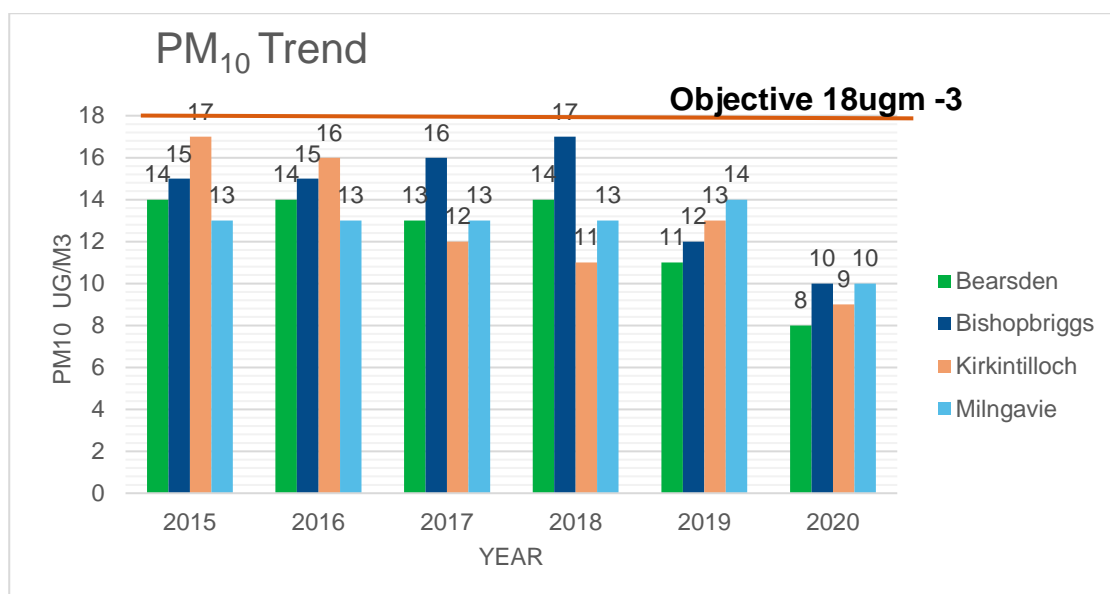


Figure 2 Particulate Matter trend in East Dunbartonshire Council

3.1.5 Particulate Matter (PM_{2.5})

Table A.7 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/m³.

A Fidas was installed and commenced monitoring at the Park Road, Milngavie site in May 2020 resulting in an incomplete year of monitoring and the data has been annualised in order to estimate an annual mean concentration. The annualised measured concentration is substantially below the AQO level. There were no recorded exceedances of the air quality objectives for PM_{2.5} within East Dunbartonshire in 2020 and the trend across East Dunbartonshire is downwards.

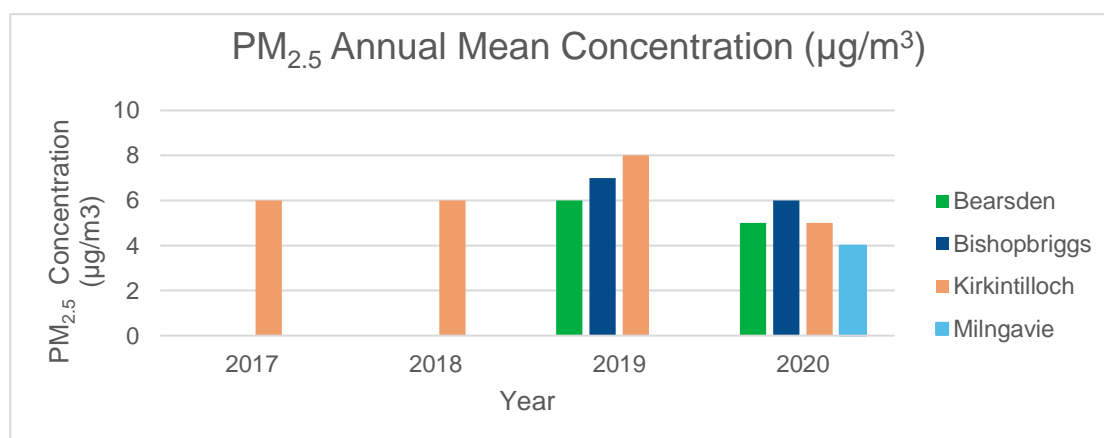


Figure 3 PM_{2.5} trend in East Dunbartonshire Council

3.1.6 Sulphur Dioxide (SO₂)

East Dunbartonshire Council does not monitor sulphur dioxide.

3.1.7 Carbon Monoxide, Lead and 1,3-Butadiene

East Dunbartonshire Council does not monitor carbon monoxide, lead or 1,3 Butadiene.

4 New Local Developments

Proposed new local developments in East Dunbartonshire which may affect air quality are still subject to obtaining planning permission therefore have been detailed under Planning Applications. Several applications required air quality assessments and are under consideration and these have also been detailed under Planning Applications.

Road Traffic Sources

During 2020, particularly at the onset of the pandemic, traffic levels plummeted as only essential travel was permitted. As restrictions have eased, there has been a corresponding increase in traffic.

There has been a temporary waiting restriction in place on the A803 from Bishopbriggs to the Colston Road junction to create two lanes of southbound traffic and encourage more bus travel by providing a more consistent service.

BRR5 is proposed and will complete the Bishopbriggs Bypass however, a route has not yet been determined and it will be several years before this is concluded.

Other Transport Sources

East Dunbartonshire Council confirms that there are no other transport sources as prescribed in the criteria viz: airports; locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m; locations with many movements of diesel locomotives, and potential long-term relevant exposure within 30m or ports for shipping.

Industrial Sources

East Dunbartonshire Council confirms that to our knowledge, there are no new industrial sources as prescribed in the criteria viz: new or proposed installations for which an air quality assessment has been carried out or existing installations where emissions have increased substantially or new relevant exposure has been introduced or new or

significantly changed installations with no previous air quality assessment; major fuel storage depots storing petrol; petrol stations or poultry farms.

Sepa has further commented that no new PPC processes have been approved.

Commercial and Domestic Sources

Plans for several new developments with Combined Heat and Power Plant (CHP), heat recovery and heat pumps have been received and are awaiting or have been granted planning permission. Details are contained in Section 5 Planning Applications.

New Developments with Fugitive or Uncontrolled Sources

East Dunbartonshire Council confirms that no new developments with Fugitive or Uncontrolled Sources were identified during 2020.

Sepa has further confirmed that no new sources of fugitive or uncontrolled particulate matter have been identified.

5 Planning Applications

East Dunbartonshire Council requests a full air quality impact assessment in line with our Planning Guidance and where we consider the application may affect air quality.

All East Dunbartonshire Council projects requiring planning permission come with a full air quality impact assessment as standard.

Environmental Health is consulted on many planning applications and the following included requests for full air quality impact assessments:

1. TP/ED/20/0105 Redevelopment of leisure centre to form a new sports centre and adult resource centre. Allander Sports Complex Milngavie Road Bearsden East Dunbartonshire.

The primary long term concern is the emissions generated by traffic and the subsequent impact on local air quality. The proposed development will make use of combined heat and power and photovoltaics. The Air Quality Impact Assessment concluded that no significant air quality impact was predicted on existing or future residents as a result of the development.

2. TP/ED/20/0157 Demolition of existing buildings and the erection of a retail foodstore, 9 Lancaster Road Bishopbriggs East Dunbartonshire.

The proposed site is adjacent to the Bishopbriggs AQMA. The Air Quality Impact Assessment concluded that modelled concentrations in the opening year would be below the annual mean objectives for all pollutants considered at all receptor locations.

The application was refused on other grounds.

3. TP/ED/20/0576 Development of an Additional Support Needs (ASN) School, Land At Waterside Road And Bankhead Road, Kirkintilloch.

The primary long term concern in relation to air quality is the emissions generated by traffic and the subsequent impact on local air quality at residential and public areas located within the vicinity of the main road network. The application includes combined heat and power plant and solar photovoltaics.

Modelling predicted no significant change in concentrations of NO₂, PM₁₀ and PM_{2.5} at all considered sensitive receptors.

This application is still being considered.

There were also approximately 22 planning applications concerning domestic property and which included the installation of wood burning stoves.

6 Impact of COVID-19 upon LAQM

East Dunbartonshire Council continued on the whole throughout 2020 to maintain our diffusion tube monitoring network as normal in line with the exposure and analysis diffusion tube calendar until 23rd March when the first lockdown was enforced, resulting in the tubes for that month being exposed for an extended period of eight weeks. Thereafter, the monitoring network operated as normal including throughout further lockdown periods.

East Dunbartonshire Council continued to maintain our automatic air quality monitoring sites during 2020, including throughout the lockdown period however, we did reduce the fortnightly calibration visits to monthly. In our opinion, this has had no discernible or damaging effect on the air quality monitoring equipment. ESU visits for servicing and repairs where necessary also continued to be undertaken in line with Covid protocols.

East Dunbartonshire Council did not undertake any low cost monitoring during 2020. We did however, install a Zephyr unit outside a primary school in February 2020 as part of an air quality education project and had begun to obtain data indicating peaks and troughs in line with school drop off and pick up times. There was a clear reduction from March onwards when the schools closed for a period of time.

East Dunbartonshire Council is not aware of any ongoing issues with our local air quality monitoring network related to the Covid 19 response. Reducing the number of LSO visits throughout 2020 appears to have had no detrimental effect on the equipment and consideration will be given, particularly since resources are stretched, to continuing with this reduction in visits.

7 Conclusions and Proposed Actions

Conclusions from New Monitoring Data

Both automatic and passive monitoring for NO₂ carried out during 2020 did not reveal any exceedences of the annual mean Air Quality Objective at any of the monitoring locations within East Dunbartonshire. Levels reduced considerably as a result of the pandemic and the corresponding reduction in traffic from March 2020 onwards. There has been an overall downward trend across Scotland over the last few years and this trend continued for all pollutants. The annual mean NO₂ level at all four automatic monitoring sites was vastly reduced with both Bishopbriggs and Bearsden recording a maximum of 20µg/m³ as opposed to the objective level of 40µg/m³. Kirkintilloch and Milngavie measured 18µg/m³ and 15µg/m³ respectively. No exceedences of the hourly mean were recorded.

Similarly, PM₁₀ levels at all four automatic monitoring sites recorded reductions compared with the previous year with both Bishopbriggs and Milngavie recording annual mean levels of 10µg/m³, Kirkintilloch dropped to 9µg/m³ and Bearsden recorded the lowest level of 8µg/m³; all well below the annual mean objective level of 18µg/m³.

PM_{2.5} was measured at all four automatic monitoring sites for the first time. A full year of measurements was achieved at Bishopbriggs, Bearsden and Kirkintilloch and Milngavie was added in May 2020. Bishopbriggs recorded the highest level of 6 µg/m³, Bearsden and Kirkintilloch recorded 5 µg/m³ and Milngavie recorded a level of 4 µg/m³ as compared to the annual mean objective level of 10 µg/m³.

East Dunbartonshire Council has two Air Quality Management Areas – Bishopbriggs and Bearsden. All monitoring results within the AQMAs are below the air quality objective level for which they were declared and have been for some time. It is our intention to revoke the Bearsden AQMA and committee approval is being sought for this as soon as possible. It is not our intention to revoke the Bishopbriggs AQMA just yet due to the number of planned infrastructure and development changes planned as part of the City Deal funding award.

Conclusions relating to New Local Developments

East Dunbartonshire Council has no exceedences of any of the relevant air quality objectives and new local developments are unlikely to introduce new exceedences. Although a number of applications for development have included air quality impact assessments, there is nothing to indicate that such development would introduce any new exceedences of any of the air quality objectives.

Proposed Actions

Monitoring data for 2020 has not identified any new exceedences of the objectives for any pollutant and all monitored areas of East Dunbartonshire are not only in compliance but are well below the objective levels, no doubt related to the reduction in traffic during 2020.

It is our intention to review the NO₂ tube network and remove all NO₂ tubes which confirm there is no longer any need for concern in terms of air quality objective levels.

It is our intention to revoke the Bearsden AQMA and the initial report has been accepted by both Scottish Government and Sepa. A report has been prepared and will be presented at committee as soon as practicable.

It is not our intention to revoke the Bishopbriggs AQMA at this stage due to the extensive proposed redevelopment of Bishopbriggs in line with City Deal funding including an aspiration to complete phase 5 of the Bishopbriggs Relief Road. It is anticipated that during construction over several years, local air quality data may be unreliable.

We will continue to implement Action Plan measures where funding allows.

The next Annual Progress Report will be submitted in 2022.

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)
EDB1	Bishopbriggs	Roadside	260995	670130	NO ₂ ; PM ₁₀ ; PM _{2.5}	Yes AQMA 1	Chemiluminescent; FIDAS	5m	2m	2
EDB2	Bearsden	Kerbside	254269	672067	NO ₂ ; PM ₁₀ ; PM _{2.5}	Yes AQMA 2	Chemiluminescent; FIDAS	<2m	1m	2
EDB3	Kirkintilloch	Kerbside	265675	673516	NO ₂ ; PM ₁₀ ; PM _{2.5}	No	Chemiluminescent; FIDAS	<2m	1m	3
EDB4	Milngavie	Roadside	255328	674115	NO ₂ ; PM ₁₀ ; PM _{2.5}	No	Chemiluminescent; TEOM FDMS; FIDAS	<40m	1m	3

Notes:

(1) AQMA1 is Bishopbriggs Air Quality Management Area

(2) AQMA2 is Bearsden Air Quality Management Area

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? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube co-located with a Continuous Analyser?	Tube Height (m)
EDB5	Bearsden 1 (118 Drymen Rd)	Roadside	254218	672193	NO2	Yes - Bearsden	3m	2m	No	2.4
EDB11	Bearsden 10	Roadside	255394	670683	NO2	No	24m	2m	No	2.4
EDB12	Bearsden 13	Roadside	254809	671057	NO2	Yes - Bearsden	26m	2m	No	2.4
EDB13	Bearsden 14	Roadside	254877	671000	NO2	Yes - Bearsden	8m	2m	No	2.4
EDB14	Bearsden 15	Roadside	254898	671023	NO2	Yes - Bearsden	2m	2m	No	2.5
EDB15	Bearsden 16	Kerbside	254269	672067	NO2	Yes - Bearsden	2m	1m	Yes	1.8
EDB16	Bearsden 16 B	Kerbside	254269	672067	NO2	Yes - Bearsden	2m	1m	Yes	1.8
EDB17	Bearsden 16 C	Kerbside	254269	672067	NO2	Yes - Bearsden	2m	1m	Yes	1.8
EDB18	Bearsden 17	Roadside	254258	672077	NO2	Yes - Bearsden	<2m	2m	No	2.6
EDB19	Bearsden 18	Roadside	254275	672069	NO2	Yes - Bearsden	<2m	2m	No	2.4
EDB51	Bearsden 19	Roadside	255403	673236	NO2	No	5m	<2m	No	2.2
EDB52	Bearsden 20	Roadside	255400	673134	NO2	No	28m	<2m	No	2.5
EDB53	Bearsden 21	Roadside	254984	671910	NO2	No	32m	<2m	No	2.2
EDB72	Bearsden 22	Roadside	253738	673041	NO2	No	3m	1m	No	1.8
EDB6	Bearsden 3 (5 Ravelston Rd)	Urban Background	254655	670158	NO2	No	8m	5m	No	2.4

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube co-located with a Continuous Analyser?	Tube Height (m)
EDB7	Bearsden 4 (8 Lowther Ave)	Urban Background	253075	673382	NO2	No	6m	5m	No	1.8
EDB8	Bearsden 7	Roadside	254269	672069	NO2	Yes - Bearsden	<2m	2m	No	1.8
EDB9	Bearsden 8	Roadside	254275	672047	NO2	Yes - Bearsden	18m	2m	No	1.8
EDB10	Bearsden 9	Roadside	254751	670621	NO2	No	30m	2m	No	1.8
EDB21	Bishopbriggs 13	Roadside	260549	669312	NO2	Yes - Bishopbriggs	5m	2m	No	2.4
EDB22	Bishopbriggs 14	Roadside	260995	670130	NO2	Yes - Bishopbriggs	42m	2m	Yes	1.8
EDB23	Bishopbriggs 14B	Roadside	260995	670130	NO2	Yes - Bishopbriggs	42m	2m	Yes	1.8
EDB24	Bishopbriggs 14C	Roadside	260995	670130	NO2	Yes - Bishopbriggs	42m	2m	Yes	1.8
EDB25	Bishopbriggs 16	Roadside	260580	669533	NO2	Yes - Bishopbriggs	<2m	2m	No	2.4
EDB26	Bishopbriggs 17	Roadside	260552	669320	NO2	Yes - Bishopbriggs	<2m	2m	No	2.0
EDB30	Bishopbriggs 21	Roadside	261033	669650	NO2	No	6m	2m	No	2.2
EDB31	Bishopbriggs 22	Roadside	260571	669339	NO2	Yes - Bishopbriggs	5m	2m	No	2.3
EDB32	Bishopbriggs 23	Roadside	260759	669999	NO2	Yes - Bishopbriggs	5m	2m	No	2.2
EDB33	Bishopbriggs 24	Roadside	261903	671955	NO2	Yes - Bishopbriggs	10m	2m	No	2.2
EDB34	Bishopbriggs 25	Urban Background	260617	670338	NO2	No	6m	2m	No	2.4

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube co-located with a Continuous Analyser?	Tube Height (m)
EDB64	Bishopbriggs 26	Roadside	262112	670517	NO2	No	3m	1m	No	2.4
EDB65	Bishopbriggs 27	Roadside	262305	670649	NO2	No	3m	1m	No	1.8
EDB66	Bishopbriggs 28	Roadside	262488	670630	NO2	No	3m	1m	No	1.8
EDB67	Bishopbriggs 29	Roadside	262741	670245	NO2	No	3m	1m	No	1.8
EDB68	Bishopbriggs 30	Roadside	262398	669436	NO2	No	3m	1m	No	2.4
EDB69	Bishopbriggs 31	Roadside	262953	670564	NO2	No	3m	1m	No	1.8
EDB36	Bishopbriggs 6	Roadside	261016	670198	NO2	Yes - Bishopbriggs	<2m	2m	No	2.5
EDB37	Kirkintilloch 15	Roadside	265641	673497	NO2	No	2m	2m	No	2.8
EDB38	Kirkintilloch 16	Roadside	265697	673524	NO2	No	3m	2m	No	2.4
EDB39	Kirkintilloch 17	Kerbside	265675	673516	NO2	No	3m	1m	Yes	1.9
EDB40	Kirkintilloch 17 B	Kerbside	265675	673516	NO2	No	3m	1m	Yes	1.9
EDB41	Kirkintilloch 17 C	Kerbside	265675	673516	NO2	No	3m	1m	Yes	1.9
EDB42	Kirkintilloch 18	Kerbside	265674	673521	NO2	No	<2m	2m	No	2.4
EDB43	Kirkintilloch 19	Roadside	265602	673583	NO2	No	<2m	<2m	No	2.5
EDB44	Kirkintilloch 20	Roadside	265849	673424	NO2	No	6m	<2m	No	2.3

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube co-located with a Continuous Analyser?	Tube Height (m)
EDB45	Kirkintilloch 21	Roadside	265506	671961	NO2	No	5m	<2m	No	2.4
EDB46	Kirkintilloch 22	Roadside	265657	671678	NO2	No	5m	<2m	No	2.2
EDB53	Milngavie 10	Roadside	255329	674114	NO2	No	40m	1m	Yes	2.0
EDB54	Milngavie 10 B	Roadside	255329	674114	NO2	No	40m	1m	Yes	2.0
EDB55	Milngavie 10 C	Roadside	255329	674114	NO2	No	40m	1m	Yes	2.0
EDB70	Milngavie 11	Roadside	254331	674120	NO2	No	3m	1m	No	1.8
EDB71	Milngavie 12	Roadside	254041	673490	NO2	No	3m	1m	No	1.8
EDB73	Milngavie 13	Roadside	255183	674409	NO2	No	3m	1m	No	2.4
EDB47	Milngavie 4	Roadside	255728	674486	NO2	No	5m	2m	No	2.6
EDB50	Milngavie 7	Roadside	255279	674124	NO2	No	<2m	9m	No	2.1
EDB52	Milngavie 9	Urban Background	255331	674214	NO2	No	7m	2m	No	2.4

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 NO₂ Monitoring Results (µg/m³)

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
Bearsden	Kerbside	Automatic	98%	98%	46.0	33.0	33.0	32.0	20.0
Bishopbriggs	Roadside	Automatic	82%	82%	30.0	27.0	27.0	26.0	20.0
Kirkintilloch	Kerbside	Automatic	91%	91%	34.0	30.0	29.0	27.0	18.0
Milngavie	Roadside	Automatic	95%	95%	22.0	22.0	20.0	19.0	15.0
Bearsden 1 (118 Drymen Rd)	Roadside	Diffusion Tubes	92%	92%	29.1	24.7	26.8	25.0	16.9
Bearsden 10	Roadside	Diffusion Tubes	92%	92%	26.2	26.3	24.2	24.1	23.1
Bearsden 13	Roadside	Diffusion Tubes	92%	92%	33.2	33.2	28.0	29.2	21.7
Bearsden 14	Roadside	Diffusion Tubes	92%	92%	34.8	31.4	28.1	27.6	21.4
Bearsden 15	Roadside	Diffusion Tubes	92%	92%	31.9	34.3	30.1	28.8	22.9
Bearsden 16	Roadside	Diffusion Tubes	92%	92%	35.0	33.2	29.0	31.7	23.2
Bearsden 16 B	Roadside	Diffusion Tubes	92%	92%	34.5	37.1	32.5	29.7	23.7
Bearsden 16 C	Roadside	Diffusion Tubes	92%	92%	35.9	34.4	30.8	30.4	20.7
Bearsden 17	Roadside	Diffusion Tubes	92%	92%	34.8	32.1	31.1	31.2	20.6
Bearsden 18	Roadside	Diffusion Tubes	92%	92%	31.3	30.2	26.8	27.6	19.7
Bearsden 19	Roadside	Diffusion Tubes	92%	92%	#N/A	#N/A	16.4	18.5	14.2
Bearsden 20	Roadside	Diffusion Tubes	83%	83%	#N/A	#N/A	14.5	17.3	13.4
Bearsden 21	Roadside	Diffusion Tubes	83%	83%	#N/A	#N/A	16.4	18.0	19.9
Bearsden 22	Roadside	Diffusion Tubes	92%	92%	#N/A	#N/A	#N/A	15.5	10.6
Bearsden 3 (5 Ravelston Rd)	Roadside	Diffusion Tubes	83%	83%	18.4	17.9	17.0	17.4	11.4
Bearsden 4 (8 Lowther Ave)	Urban Background	Diffusion Tubes	92%	92%	11.8	10.1	13.3	15.3	7.5
Bearsden 7	Roadside	Diffusion Tubes	92%	92%	35.3	31.3	24.9	30.1	21.5
Bearsden 8	Roadside	Diffusion Tubes	92%	92%	32.8	32.3	27.0	27.4	20.9
Bearsden 9	Roadside	Diffusion Tubes	92%	92%	26.1	25.9	21.3	23.4	17.0
Bishopbriggs 13	Roadside	Diffusion Tubes	92%	92%	38.1	34.1	34.7	31.5	23.3
Bishopbriggs 14	Roadside	Diffusion Tubes	92%	92%	31.8	25.5	24.1	22.0	15.2
Bishopbriggs 14 B	Roadside	Diffusion Tubes	92%	92%	29.0	24.6	23.3	21.5	16.7
Bishopbriggs 14 C	Roadside	Diffusion Tubes	92%	92%	26.7	25.6	22.8	21.8	17.5
Bishopbriggs 16	Roadside	Diffusion Tubes	92%	92%	27.0	24.7	24.8	22.1	18.1

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
Bishopbriggs 17	Roadside	Diffusion Tubes	92%	92%	31.0	29.0	27.6	24.9	19.6
Bishopbriggs 21	Roadside	Diffusion Tubes	92%	92%	#N/A	18.9	19.7	14.9	12.0
Bishopbriggs 22	Roadside	Diffusion Tubes	92%	92%	#N/A	33.2	32.7	29.0	23.6
Bishopbriggs 23	Roadside	Diffusion Tubes	92%	92%	#N/A	32.3	23.0	27.0	21.0
Bishopbriggs 24	Roadside	Diffusion Tubes	92%	92%	#N/A	21.2	22.8	24.9	18.5
Bishopbriggs 25	Roadside	Diffusion Tubes	92%	92%	#N/A	14.8	15.6	15.4	12.7
Bishopbriggs 26	Roadside	Diffusion Tubes	92%	92%	#N/A	#N/A	#N/A	17.2	12.5
Bishopbriggs 27	Roadside	Diffusion Tubes	92%	92%	#N/A	#N/A	#N/A	14.8	12.2
Bishopbriggs 28	Roadside	Diffusion Tubes	92%	92%	#N/A	#N/A	#N/A	14.0	11.0
Bishopbriggs 29	Roadside	Diffusion Tubes	92%	92%	#N/A	#N/A	#N/A	15.2	10.8
Bishopbriggs 30	Roadside	Diffusion Tubes	92%	92%	#N/A	#N/A	#N/A	22.5	16.7
Bishopbriggs 31	Roadside	Diffusion Tubes	83%	83%	#N/A	#N/A	#N/A	15.1	14.4
Bishopbriggs 6	Roadside	Diffusion Tubes	83%	83%	34.4	28.8	24.9	24.1	17.8
Kirkintilloch 15	Roadside	Diffusion Tubes	92%	92%	27.4	25.7	25.3	24.4	17.3
Kirkintilloch 16	Roadside	Diffusion Tubes	92%	92%	29.2	32.4	28.4	27.6	20.3
Kirkintilloch 17	Roadside	Diffusion Tubes	92%	92%	33.2	30.9	26.7	28.1	19.1
Kirkintilloch 17 B	Roadside	Diffusion Tubes	92%	92%	32.2	28.4	24.1	27.7	17.8
Kirkintilloch 17 C	Roadside	Diffusion Tubes	92%	92%	31.9	28.1	26.3	27.5	18.0
Kirkintilloch 18	Roadside	Diffusion Tubes	92%	92%	27.2	25.1	22.5	23.4	16.6
Kirkintilloch 19	Roadside	Diffusion Tubes	92%	92%	#N/A	16.0	17.4	18.2	14.0
Kirkintilloch 20	Roadside	Diffusion Tubes	92%	92%	#N/A	30.1	27.5	24.8	22.5
Kirkintilloch 21	Roadside	Diffusion Tubes	92%	92%	#N/A	22.4	18.8	18.2	15.2
Kirkintilloch 22	Roadside	Diffusion Tubes	92%	92%	#N/A	19.1	18.1	16.8	13.7
Milngavie 10	Roadside	Diffusion Tubes	92%	92%	23.0	20.5	22.9	20.5	15.8
Milngavie 10 B	Roadside	Diffusion Tubes	92%	92%	24.4	20.1	19.5	20.0	14.7
Milngavie 10 C	Roadside	Diffusion Tubes	92%	92%	23.3	20.3	19.5	19.9	12.5
Milngavie 11	Roadside	Diffusion Tubes	92%	92%	#N/A	#N/A	#N/A	9.4	9.2
Milngavie 12	Roadside	Diffusion Tubes	92%	92%	#N/A	#N/A	#N/A	11.8	8.4
Milngavie 13	Roadside	Diffusion Tubes	83%	83%	#N/A	#N/A	#N/A	18.4	14.1
Milngavie 4	Roadside	Diffusion Tubes	92%	92%	26.3	24.0	20.3	21.7	17.7
Milngavie 7	Roadside	Diffusion Tubes	92%	92%	30.3	29.6	26.5	24.5	21.7
Milngavie 9	Urban Background	Diffusion Tubes	92%	92%	27.0	26.2	25.2	22.0	14.9

Notes:

Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in bold.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per LAQM.TG(16) if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

- (1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.
- (2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Table A.4 – 1-Hour Mean NO₂ Monitoring Results, Number of 1-Hour Means > 200µg/m³

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
Bearsden	Kerbside	Automatic	98	98	19	0	0	0	0
Bishopbriggs	Roadside	Automatic	82	82	0	0	0 (99)	0	0
Kirkintilloch	Kerbside	Automatic	91	91	0	0	0	0	0
Milngavie	Roadside	Automatic	95	95	0	0	0 (105)	0	0

Notes:

Exceedances of the NO₂ 1-hour mean objective (200 µg/m³ 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.5 – Annual Mean PM₁₀ Monitoring Results (µg/m³)

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
Bearsden	Kerbside	97	97	14	13	14	11	8
Bishopbriggs	Roadside	78	78	15	16	17	12	10
Kirkintilloch	Kerbside	100	100	16	12	11	13	9
Milngavie	Roadside	94	94	13	13	13	14	10

Notes:

Exceedances of the PM₁₀ annual mean objective of 18 µg/m³ are shown in bold.

All means have been “annualised” as per LAQM.TG(16), valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

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

Table A.6 – 24-Hour Mean PM₁₀ Monitoring Results, Number of PM₁₀ 24-Hour Means > 50µg/m³

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
Bearsden	Kerbside	97	97	0	0	0	2	0
Bishopbriggs	Roadside	78	78	0	2	7	2	0
Kirkintilloch	Kerbside	100	100	0	0	0	3	0
Milngavie	Roadside	94	94	0	1	0	2	0

Notes:

Exceedances of the PM₁₀ 24-hour mean objective (50 µg/m³ 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%).

Table A.7 – Annual Mean PM_{2.5} Monitoring Results (µg/m³)

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
Bearsden	Roadside	100	100	N/A	N/A	N/A	6	5
Bishopbriggs	Roadside	78	78	N/A	N/A	N/A	7	6
Kirkintilloch	Roadside	100	100	N/A	6	6	8	5
Milngavie	Roadside	60	60	N/A	N/A	N/A	N/A	4

Notes:

Exceedances of the PM_{2.5} annual mean objective of 10 µg/m³ are shown in bold.

All means have been “annualised” as per LAQM.TG(16), 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%).

Appendix B: Full Monthly Diffusion Tube Results for 2020

Table B.1 – NO₂ 2020 Monthly Diffusion Tube Results (µg/m³)

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Bias Adjusted ⁽¹⁾
Bearsden 1 (118 Drymen Rd)	31.4	26.2		13.7	9.1	15.2	7.4	12.2	19.6	14.2	15.5	21.9	16.9	16.1
Bearsden 10	32.1	28.8		14.2	9.4	14.7	9.6	20.8	18.2	25.8	23.8	56.6	23.1	21.9
Bearsden 13	22.8	32.4		14.2	13.3	19.9	5.2	22.7	18.9	28.8	24.8	36.1	21.7	20.6
Bearsden 14	26.5	28.8		13.4	12.0	18.2	8.4	23.0	24.8	23.0	22.0	35.4	21.4	20.3
Bearsden 15	40.4	31.0		18.6	11.9	17.8	10.7	16.3	23.3	30.8	23.3	27.7	22.9	21.7
Bearsden 16	30.1	30.5		18.5	16.9	25.4	12.1	16.4	28.1	33.8	24.2	19.1	23.2	22.0
Bearsden 16 B	28.8	28.6		22.0	18.0	25.1	15.6	19.6	28.9	26.5	17.3	30.7	23.7	22.5
Bearsden 16 C	26.7	29.9		17.9	18.3	24.5	12.1	17.7	27.0	19.9	15.8	17.4	20.7	19.6
Bearsden 17	26.9	28.4		14.1	18.4	28.6	10.3	18.2	23.7	20.1	17.8	20.5	20.6	19.6
Bearsden 18	25.4	23.7		12.1	14.9	22.3	13.9	12.1	28.1	16.3	16.8	30.7	19.7	18.7
Bearsden 19	19.2	23.1		14.3	6.0	10.6	4.2	11.9	16.3	18.8	17.7	13.6	14.2	13.4
Bearsden 20	24.1	22.4		9.7	5.6	NA	3.4	9.1	14.5	14.3	13.8	17.4	13.4	12.8
Bearsden 21	18.0	41.3		11.6	6.3	NA	2.3	12.1	13.5	23.0	25.0	45.9	19.9	18.9
Bearsden 22	16.0	14.3		11.3	6.8	10.5	2.4	8.9	13.6	6.1	11.4	14.9	10.6	10.0
Bearsden 3 (5 Ravelston Rd)	15.0	NR		11.2	6.1	11.3	3.6	8.0	11.5	11.5	16.2	20.0	11.4	10.9
Bearsden 4 (8 Lowther Ave)	12.5	15.7		5.9	3.3	5.6	2.7	1.9	7.2	6.8	8.6	12.7	7.5	7.2
Bearsden 7	27.1	30.9		17.4	17.0	21.6	9.4	16.8	23.7	24.1	16.4	31.9	21.5	20.4
Bearsden 8	31.6	33.2		20.5	13.5	18.4	11.5	9.9	21.6	21.1	20.0	28.1	20.9	19.8
Bearsden 9	26.7	23.6		13.7	7.3	11.9	8.0	7.3	19.4	20.8	17.0	31.7	17.0	16.2
Bishopbriggs 13	27.7	34.4		19.4	16.9	24.0	15.0	11.1	31.8	16.7	31.7	27.6	23.3	22.1
Bishopbriggs 14	23.6	20.0		9.9	10.1	14.4	9.1	6.9	17.5	21.9	18.0	16.0	15.2	14.5
Bishopbriggs 14B	25.9	26.2		13.4	11.1	15.2	7.1	6.0	19.1	20.7	16.5	22.4	16.7	15.9
Bishopbriggs 14C	28.8	25.2		12.1	8.8	14.5	7.8	9.3	19.2	11.5	26.2	29.4	17.5	16.7
Bishopbriggs 16	21.0	22.6		16.3	11.0	14.6	7.8	10.2	20.8	21.2	28.3	25.2	18.1	17.2
Bishopbriggs 17	30.9	26.5		15.3	13.6	17.7	9.2	14.8	21.4	29.0	18.9	18.5	19.6	18.6

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Bias Adjusted ⁽¹⁾
Bishopbriggs 21	18.7	23.4		10.2	6.3	9.6	3.5	5.8	11.6	11.4	13.2	17.8	12.0	11.4
Bishopbriggs 22	30.0	38.3		20.7	17.9	17.7	7.2	22.4	30.3	32.3	19.1	23.8	23.6	22.4
Bishopbriggs 23	33.7	31.0		17.3	13.3	11.0	6.5	16.0	22.6	29.2	25.1	25.2	21.0	19.9
Bishopbriggs 24	21.9	19.9		11.5	9.1	22.2	3.9	13.2	20.1	23.2	22.3	36.2	18.5	17.6
Bishopbriggs 25	17.4	16.7		10.5	5.0	10.2	2.3	6.9	13.1	17.3	16.9	23.2	12.7	12.0
Bishopbriggs 26	18.3	17.7		9.9	6.8	10.1	3.3	7.3	14.3	9.9	21.4	18.9	12.5	11.9
Bishopbriggs 27	18.2	19.3		7.0	5.6	8.2	7.0	8.1	16.3	14.5	13.5	16.2	12.2	11.6
Bishopbriggs 28	16.4	11.3		10.4	5.8	8.0	2.0	7.2	15.0	13.9	12.5	18.1	11.0	10.4
Bishopbriggs 29	17.4	22.0		6.3	7.0	5.4	3.6	3.5	14.0	8.4	11.8	19.4	10.8	10.3
Bishopbriggs 30	20.2	24.6		13.8	8.3	13.4	6.2	13.0	23.7	14.6	21.6	23.8	16.7	15.8
Bishopbriggs 31	24.8	21.1		11.1	7.0	10.9	2.7	8.9	19.6	NR	15.8	22.1	14.4	13.7
Bishopbriggs 6	NR	25.1		17.9	13.1	14.6	8.4	7.3	24.7	19.9	21.4	25.8	17.8	16.9
Kirkintilloch 15	23.0	26.2		13.0	12.9	15.5	6.7	9.2	19.4	21.6	18.9	23.8	17.3	16.4
Kirkintilloch 16	29.5	29.9		14.0	11.4	17.9	8.2	13.8	22.8	22.8	21.8	30.7	20.3	19.2
Kirkintilloch 17	28.4	34.3		19.4	10.6	17.6	9.9	12.4	18.5	21.1	19.1	21.1	19.3	18.3
Kirkintilloch 17 B	30.4	29.6		14.6	11.0	17.3	9.0	11.6	21.4	15.2	18.1	24.9	18.5	17.5
Kirkintilloch 17 C	25.1	31.7		17.1	11.4	14.3	9.7	13.2	23.6	17.3	16.6	21.9	18.4	17.4
Kirkintilloch 18	29.2	23.5		11.5	10.1	14.2	6.6	12.6	19.7	20.8	13.7	21.2	16.6	15.8
Kirkintilloch 19	18.3	22.7		8.9	9.1	12.4	2.7	12.1	16.5	18.8	13.7	18.5	14.0	13.3
Kirkintilloch 20	29.5	21.2		11.2	15.4	20.2	10.2	18.7	21.8	24.8	27.7	47.1	22.5	21.4
Kirkintilloch 21	21.9	24.1		9.2	8.6	13.1	4.6	6.0	23.5	13.2	19.3	24.0	15.2	14.5
Kirkintilloch 22	17.3	16.6		9.8	9.1	11.8	3.4	10.6	14.1	15.1	17.3	25.3	13.7	13.0
Milngavie 10	10.4	40.8		13.7	8.8	13.7	5.6	10.0	16.6	15.9	15.7	22.8	15.8	15.0
Milngavie 10 B	24.1	21.6		13.2	9.7	14.3	4.4	7.2	18.3	15.4	11.9	21.6	14.7	14.0
Milngavie 10 C	4.7	21.8		11.5	9.1	13.4	4.0	8.5	15.4	19.2	14.4	15.8	12.5	11.9
Milngavie 11	13.4	14.9		7.1	3.8	4.7	2.0	3.3	9.0	9.7	7.8	25.5	9.5	9.0
Milngavie 12	13.5	12.8		6.5	4.2	9.9	2.0	2.2	7.7	7.7	9.8	15.7	8.4	7.9
Milngavie 13	19.9	23.6		10.7	9.9	10.5	4.4	7.5	16.9	14.5	NR	22.9	14.1	13.4
Milngavie 4	29.3	28.6		14.2	10.1	25.2	7.9	10.1	18.9	10.7	14.1	25.7	17.7	16.8
Milngavie 7	38.7	35.0		15.1	13.9	18.5	10.3	10.3	23.6	26.4	22.8	24.5	21.7	20.6
Milngavie 9	10.7	21.4		10.8	9.0	14.1	6.5	8.2	21.6	19.4	17.3	25.0	14.9	14.2

Notes:

(1) See Appendix C for details on bias adjustment

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

New or Changed Sources Identified During 2020

East Dunbartonshire Council has not identified any new sources relating to air quality within the reporting year of 2020.

Additional Air Quality Works Undertaken During 2020

East Dunbartonshire Council has not completed any additional works within the reporting year of 2020.

QA/QC of Diffusion Tube Monitoring

The diffusion tubes are supplied and analysed by Glasgow Scientific Services (GSS) and are prepared using the 20% TEA in water method and in accordance with the procedures set out in the practical guidance. Glasgow Scientific Services (GSS) Laboratory is UKAS accredited for the analysis of Diffusion tubes. The duration of exposure is normally the 4/5 week period as suggested by the calendar provided by Defra. All results have been bias adjusted and annualised where required.

Glasgow Scientific Services (GSS) Laboratory also participates in the independent AIR-PT scheme for NO₂ tubes analysis and GSS has performed to the following proficiency levels during the AIR-PT testing scheme in 2020:

January-February – 100%

May - June – Round was cancelled due to pandemic.

July-August – Round was cancelled due to pandemic.

September-October – 100%

The testing scheme is in place to evaluate the performance of the laboratory and the diffusion tubes in distribution. The percentage displays a “snap-shot” of the analytical

quality. For the last four round window GSS had a combined score of 100% which was subsequently determined to be satisfactory based on the z-score system.

Diffusion Tube Annualisation

All diffusion tube monitoring locations within East Dunbartonshire Council recorded data capture of 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 33% do not require annualisation.

Diffusion Tube Bias Adjustment Factors

East Dunbartonshire Council has applied a local bias adjustment factor of 0.95 to the 2020 monitoring data. A summary of bias adjustment factors used by East Dunbartonshire Council over the past five years is presented in Table C.1.

The local factor of 0.95 was derived from four co-location studies undertaken at Bearsden Cross, Bishopbriggs, Kirkintilloch and Milngavie

Table C.1 – Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2020	Local	-	0.95
2019	Local	-	0.85
2018	Local	-	0.92
2017	Local	-	0.87
2016	Local	-	1.025

NO₂ Fall-off with Distance from the Road

No diffusion tube NO₂ monitoring locations within East Dunbartonshire Council required distance correction during 2020.

QA/QC of Automatic Monitoring

All automatic sites are part of the Scottish Air Quality Programme and are audited twice per year by Ricardo. Servicing and repair is carried out by Acoem UK and Horiba UK, the

service contracts include a six monthly service of instruments, call outs to site for repairs and the routine replacement of consumables. All data is available in real-time, and regularly scaled and ratified by Ricardo on behalf of the Scottish Government.

PM₁₀ and PM_{2.5} Monitoring Adjustment

The type of PM₁₀/PM_{2.5} monitor(s) utilised within East Dunbartonshire Council do not require the application of a correction factor.

Automatic Monitoring Annualisation

All automatic monitoring locations within East Dunbartonshire Council recorded data capture of greater than 75% apart from the Milngavie site where data capture for PM_{2.5} was 60% hence the requirement to annualise the Milngavie data.

NO₂ Fall-off with Distance from the Road

No automatic NO₂ monitoring locations within East Dunbartonshire Council required distance correction during 2020 therefore Table C.4 has been removed.

Table C.2 – Annualisation Summary (concentrations presented in $\mu\text{g}/\text{m}^3$)

Site ID	Annualisation Factor Site 1 Townhead	Annualisation Factor Site 2 St Leonards	Annualisation Factor Site 3 Bearsden	Annualisation Factor Site 4 Mains Loan	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
Milngavie	1.081	0.9411	1.2121	1.067	1.075	4	4.3	Fidas installed in May 2020

Table C.3 – Local Bias Adjustment Calculations

	Local Bias Adjustment Input 1	Local Bias Adjustment Input 2	Local Bias Adjustment Input 3	Local Bias Adjustment Input 4	Local Bias Adjustment Input 5
Periods used to calculate bias	6	8	11	9	
Bias Factor A	1.09 (0.8 - 1.68)	0.76 (0.61 - 1)	0.97 (0.79 - 1.25)	1.07 (0.82 - 1.53)	
Bias Factor B	-8% (-41% - 24%)	32% (0% - 64%)	4% (-20% - 27%)	-6% (-34% - 22%)	
Diffusion Tube Mean ($\mu\text{g}/\text{m}^3$)	15.7	22.4	18.7	13.0	
Mean CV (Precision)	11.0%	6.8%	9.3%	11.7%	
Automatic Mean ($\mu\text{g}/\text{m}^3$)	17.1	17.0	18.1	13.9	
Data Capture	100%	97%	96%	95%	
Adjusted Tube Mean ($\mu\text{g}/\text{m}^3$)	17 (13 - 26)	17 (14 - 22)	18 (15 - 23)	14 (11 - 20)	

Notes:

A combined local bias adjustment factor of 0.95 has been used to bias adjust the 2020 diffusion tube results.

Appendix D: Maps Showing the Location of the Monitoring Sites

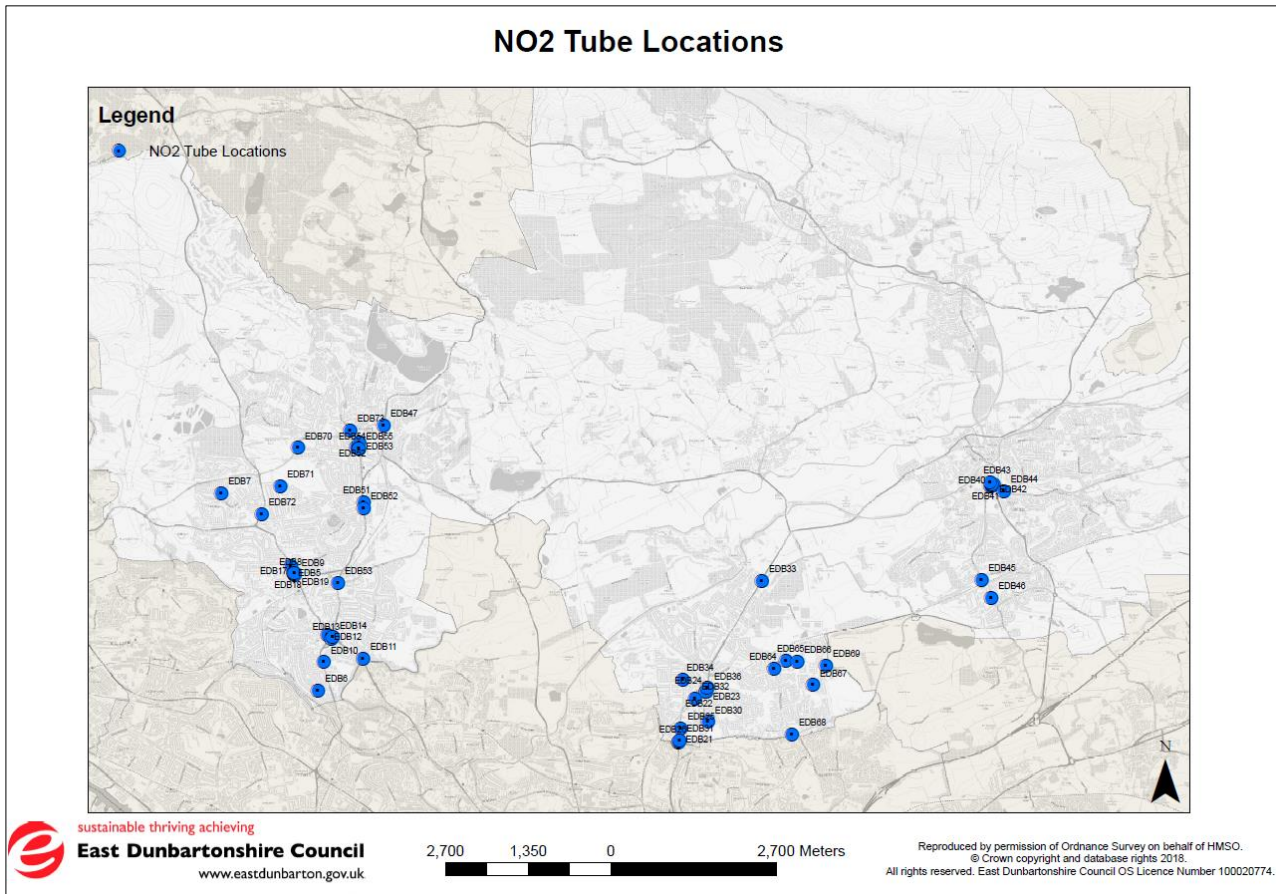


Figure 4 NO₂ tubes monitoring locations

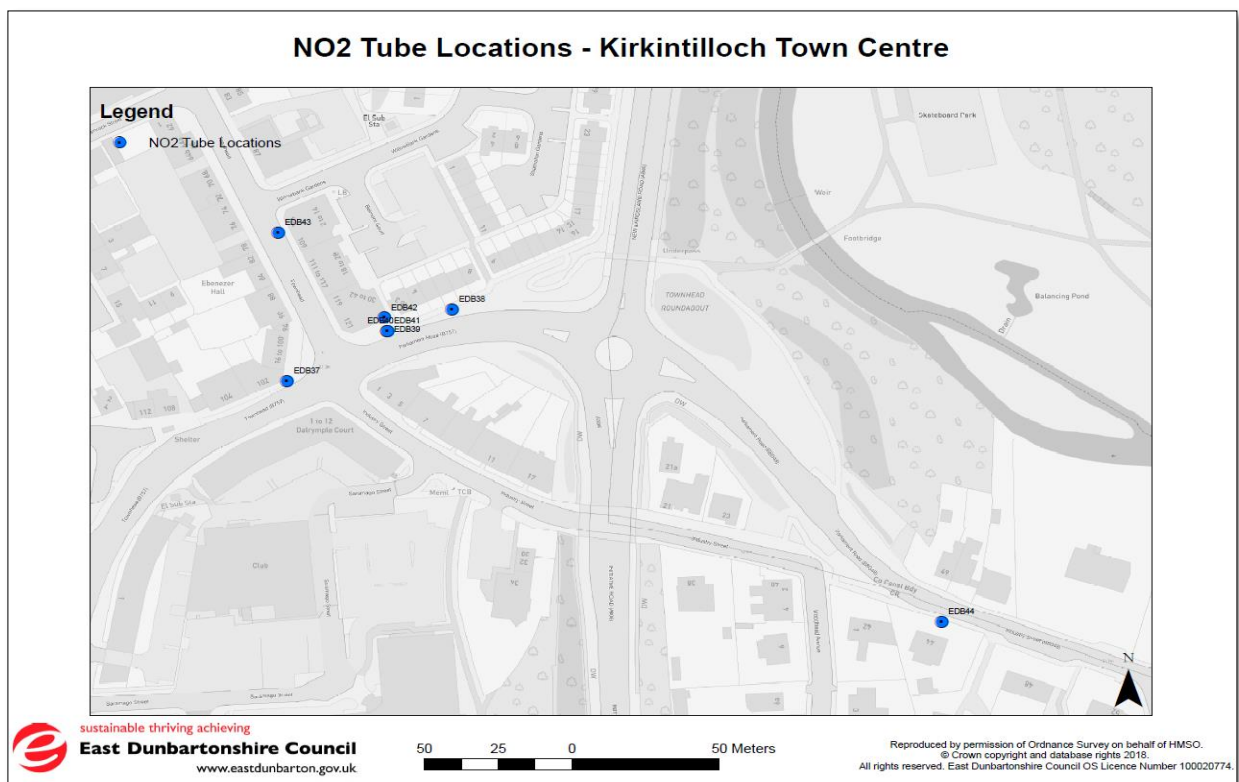


Figure 5 Kirkintilloch NO₂ tubes locations

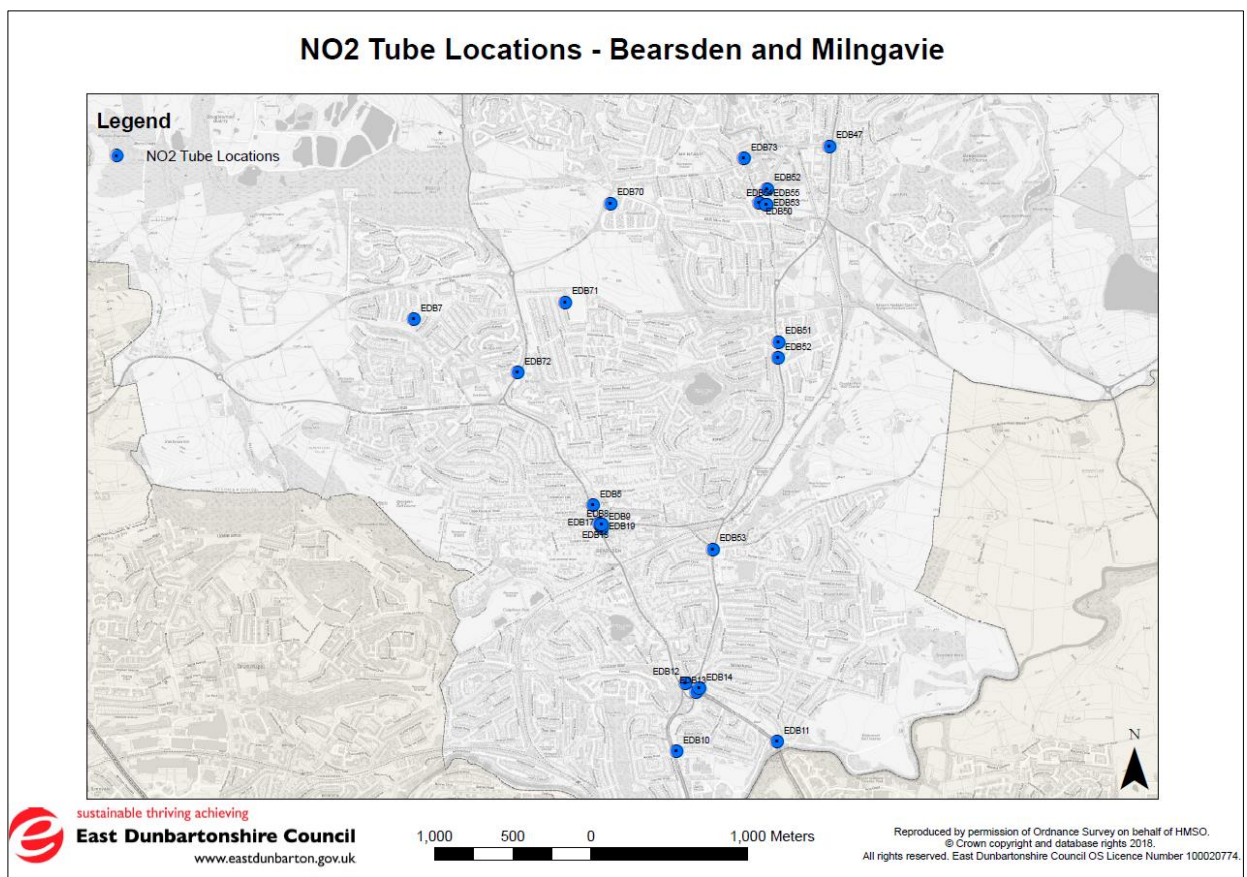


Figure 6 Bearsden and Milngavie NO₂ tubes locations

NO2 Tube Locations - Bishopbriggs

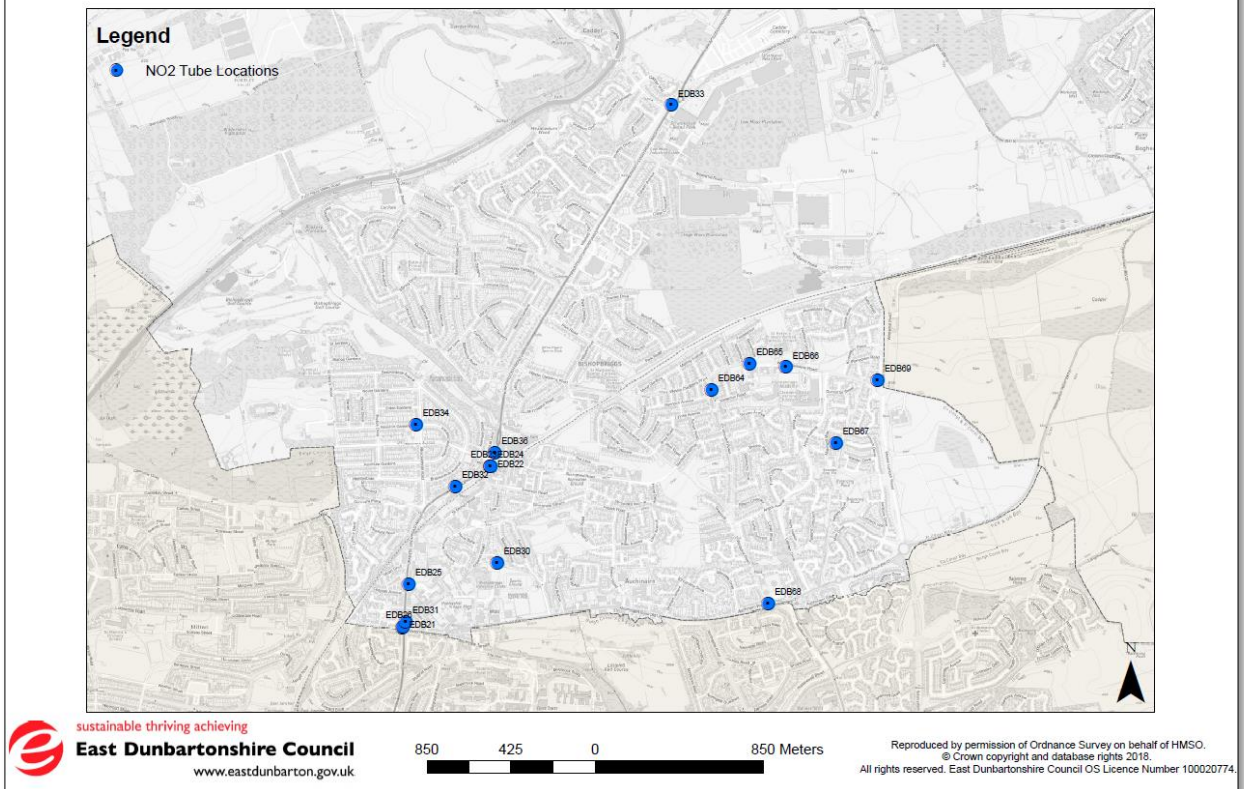


Figure 7 Bishopbriggs NO₂ tubes locations

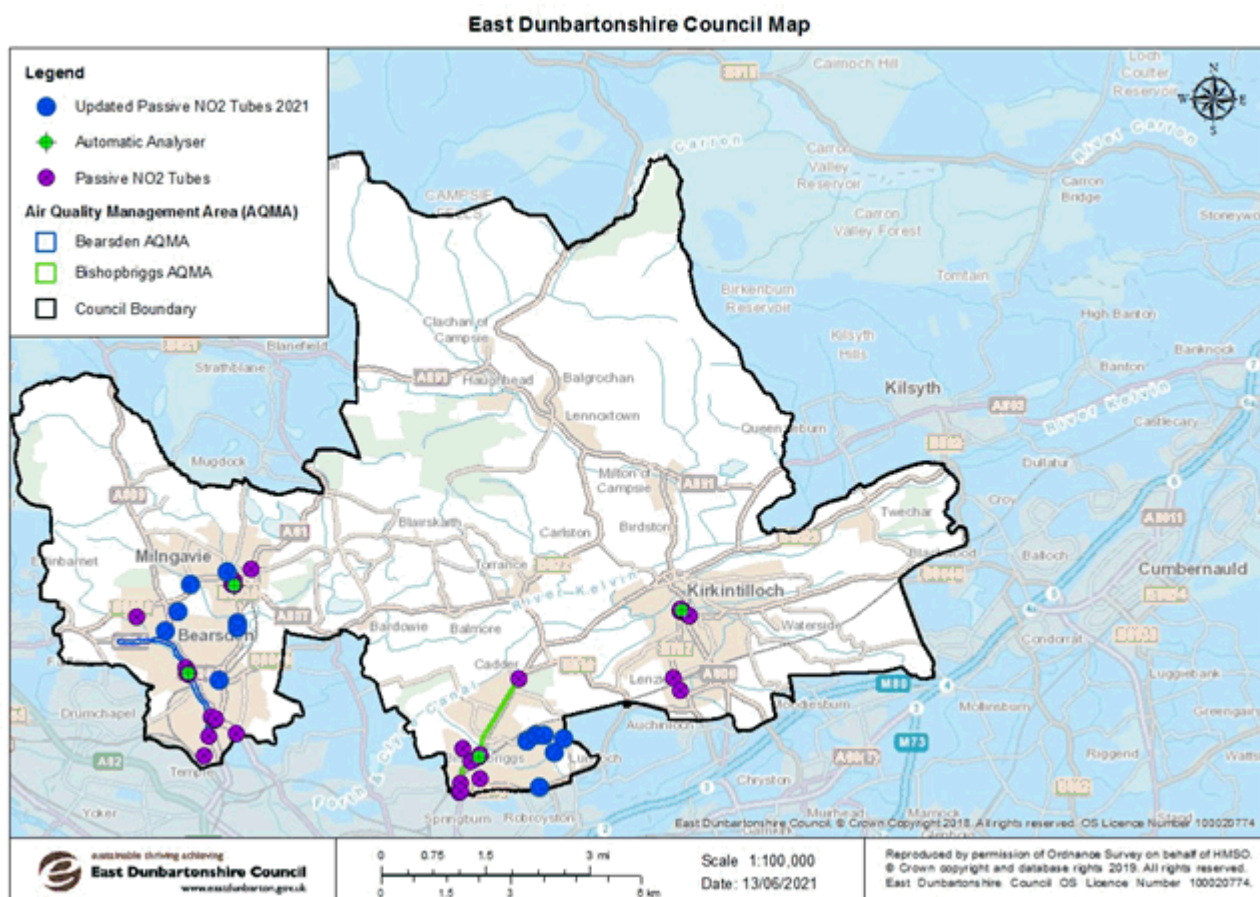


Figure 8 Map of AQMA and monitoring stations

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the LA intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
APR	Air quality Annual Progress Report
AURN	Automatic Urban and Rural Network (UK air quality monitoring network)
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO ₂	Sulphur Dioxide
SEPA	Scottish Environment Protection Agency

References

- 1) Environment Act 1995.
- 2) The Air Quality (Scotland) Regulations 2000.
- 3) The Air Quality (Scotland)(Amendment) Regulations 2001.
- 4) Local Air Quality Management Technical Guidance LAQM, TG(16), DEFRA, April 2016
- 5) Local Air Quality Management Technical Guidance TG(16), Department for Environment, Food and Rural Affairs (DEFRA), 2018
- 6) Local Air Quality Management Policy Guidance, (PG)(S)(16), DEFRA, March 2016
- 7) East Dunbartonshire Bearsden Air Quality Action Plan
- 8) East Dunbartonshire Bishopbriggs Air Quality Management Area Action Plan
- 9) East Dunbartonshire Bishopbriggs Air Quality Management Area Update
- 10) East Dunbartonshire Local Transport Strategy 2020-2025