East Dunbartonshire Council

Air Quality Action Plan 2025 – 2030

Bureau Veritas

July 2024

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	Name	Job Title	Signature
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East Dunbartonshire Council

Air Quality Action Plan

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

(July 2024)

Information	East Dunbartonshire Council
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Department	Environmental Health
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Report Reference Number	2025 - 2030 AQAP
Date	July 2024

Executive Summary

This Air Quality Action Plan (AQAP) has been produced as part of our statutory duties required by the Local Air Quality Management framework. It outlines the action we will take to improve air quality in East Dunbartonshire between 2025 – 2030.

This action plan replaces the previous action plan which is outed and ran from 2009 – 2014. Projects delivered through the past action plan include:

- Implemented Fleet waste collection efficiency
- Master naught vehicle tracking installed in all fleet and pool vehicles

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. Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas[1,2].

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion[3]. East Dunbartonshire Council is committed to reducing the exposure of people in East Dunbartonshire to poor air quality in order to improve health.

In this AQAP we outline how we plan to effectively tackle air quality issues within our control to meet statutory air quality objectives within the shortest possible time. However, we recognise that there are a large number of air quality policy areas that are outside of our influence, but for which we may have useful evidence, and so we will continue to work with the Scottish Government and partner organisations on policies and issues beyond East Dunbartonshire Council's direct influence.

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

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

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

Air quality objectives have been met within the Kirkintilloch Road AQMA for many years, and in accordance with the requirements of PG(S)(24) and guidance from SEPA[4], East Dunbartonshire Council expects the Kirkintilloch Road AQMA will be revoked no later than 2027, due to significant proposed changes to infrastructure along the A803 corridor which may alter or disrupt the validity of air quality monitoring in the area over the coming years. As a result, the AQMA will be retained at least until works are completed, which is expected by 2027.

[4] Correspondence with SEPA via email, April 2024

Responsibilities and Commitment

This AQAP was prepared by Bureau Veritas on behalf of East Dunbartonshire Council with the support and agreement of the following officers and departments:

- Environmental Health
- Community Safety
- Planning Development
- Sustainability and Planning Policy
- City Deal
- Roads
- Traffic and Transport
- Greenspace
- Fleet Services
- SEPA

This AQAP has been approved by:

This AQAP will be formally reviewed and republished on a five-yearly cycle from date of initial publication. Progress each year will be reported in the Annual Progress Report (APR) produced by East Dunbartonshire Council, as part of our statutory Local Air Quality Management duties.

A local authority should allow 12 months for the formal action plan review process to take place and to ensure the revised action plan is republished within the five-yearly cycle.

If you have any comments on this AQAP, please send them to Paul Halliday at:

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Introduction

This report outlines the actions that East Dunbartonshire Council will deliver between 2025 – 2030 in order to reduce concentrations of air pollutants and exposure to air pollution; thereby positively impacting on the health and quality of life of residents and visitors to the East Dunbartonshire area.

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

This Plan will be reviewed every five years at the latest and progress on measures set out within this Plan will be reported on annually within East Dunbartonshire's air quality APR.

Summary of Current Air Quality in East Dunbartonshire

1.1 Air Quality Management Areas

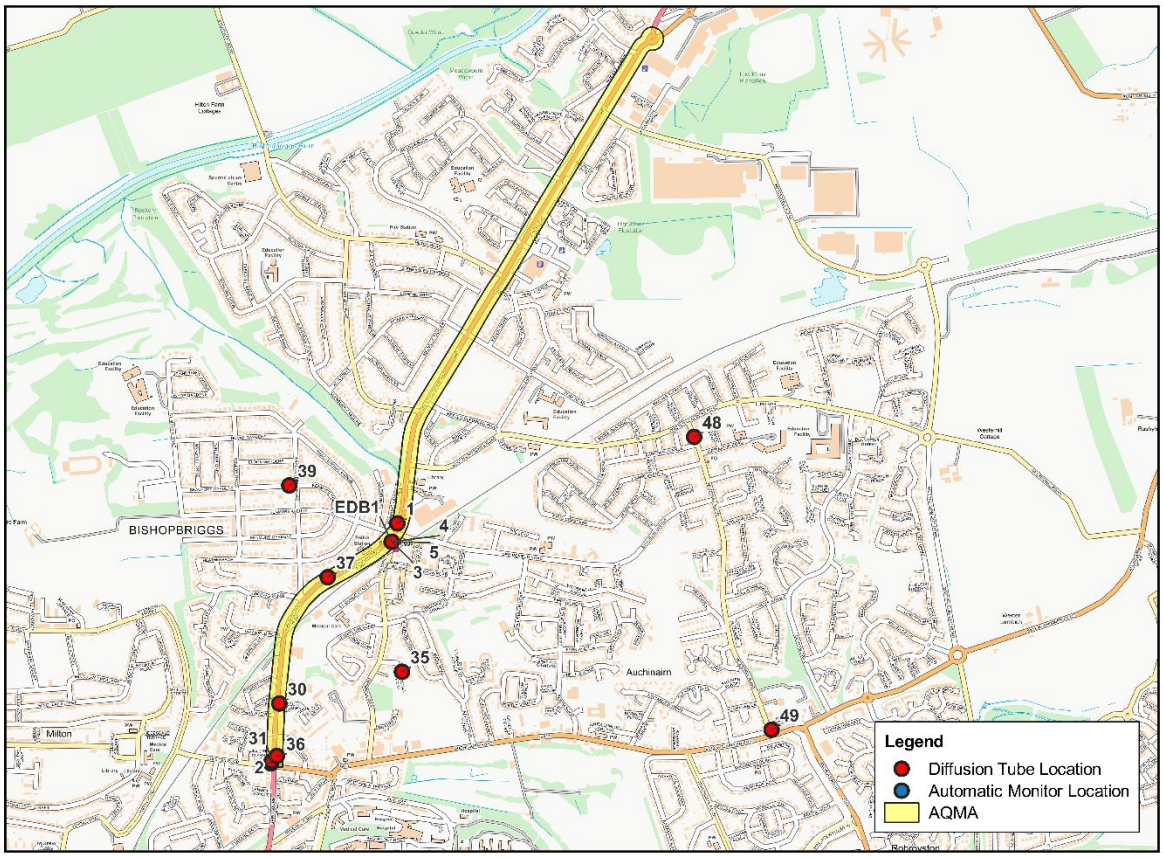
The relevant Air Quality Management Area (AQMA) addressed by this AQAP is outlined below.

Table 1.1 includes the nature of the exceedances for which the AQMA was declared and describe the margin of exceedances, a map showing the location of the AQMA, and monitoring sites are shown in Figure 1.1.

Table 1.1 – Declared Air Quality Management Areas

AQMA Name	Pollutants and Air Quality Objectives	City / Town	Description	Action Plan
Kirkintilloch Road AQMA	NO_2 Annual Mean PM_{10} Annual Mean	Bishop briggs	The designated area incorporates a 60m wide corridor along the A803 Kirkintilloch Road, Bishopbriggs bordered on the South by the Council's boundary with Glasgow City and by a line 30m to the North of Cadder Roundabout.	This document updates the existing outdated action plan. The majority of previously identified measures have been achieved and air quality objective levels have been met and exceeded.

Figure 1.1 – Map of Monitoring Sites Within/Near Kirkintilloch Road AQMA



1.2 Review of Air Quality Monitoring

1.2.1 Local Automatic Monitoring

East Dunbartonshire Council currently undertake automatic (continuous) monitoring at 4 sites. EDB1 is the only automatic monitoring location located within the Kirkintilloch Road AQMA.

Table 1.2 – Table 1.6 compares the ratified and adjusted monitored NO_2 annual mean, PM_{10} annual mean, PM_{10} 24-hour mean and $PM_{2.5}$ annual mean concentrations for the past five years with the air quality objective of 40 µg/m^3, and $PM_{2.5}$ annual mean. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e., the values are exclusive of any consideration to fall-off with distance adjustment). The automatic monitoring site within Kirkintilloch Road AQMA continues to report compliance of the AQS objectives for NO_2, PM_{10}, $PM_{2.5}$.

Table 1.2 – Annual Mean NO_2 Monitoring Results: Automatic Monitoring (µg/m^3)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	2019	2020	2021	2022	2023
EDB1	260995	670130	Roadside	26.0	20.0	16.8*	16.2*	16.2
Annualised means highlighted with (*)								

Table 1.3 – 1-Hour Mean NO_2 Monitoring Results, Number of 1-Hour Means > 200 µg/m^3

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	2019	2020	2021	2022	2023
EDB1	260995	670130	Roadside	0	0	0	0 (80)	0
If the period of valid data is less than 85%, the 99.8th percentile of 1-hour means is provided in brackets.								

Table 1.4 – Annual Mean PM_{10} Monitoring Results (µg/m^3)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	2019	2020	2021	2022	2023
EDB1	260995	670130	Roadside	12	10	10.2	11.4	11.5*
Annualised means highlighted with (*)								

Table 1.5 – 24-Hour Mean PM_{10} Monitoring Results, Number of PM_{10} 24-Hour Means > 50 µg/m^3

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	2019	2020	2021	2022	2023
EDB1	260995	670130	Roadside	2	0	0	3	0 (26)
If the period of valid data is less than 85%, the 99.8th percentile of 1-hour means is provided in brackets.								

Table 1.6 – Annual Mean $PM_{2.5}$ Monitoring Results (µg/m^3)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	2019	2020	2021	2022	2023
EDB1	260995	670130	Roadside	7	6	5.9	6.4	6.1*
Annualised means highlighted with (*)								

1.2.2 Local Non-Automatic Monitoring

East Dunbartonshire Council undertook non-automatic (i.e., passive) monitoring of NO2 at 30 sites, inclusive of 4 triplicate sites.

1.2.3 Kirkintilloch Road AQMA

Kirkintilloch Road AQMA is currently declared for exceedances of the annual mean NO_2 and PM_{10} AQS objective of 40µg/m^3.

As of 2023, there are currently 7 diffusion tube monitoring sites, including a triplicate site, located within the boundary of the AQMA. The annual mean NO_2 concentrations reported at all sites within this AQMA over the past 5 years is presented in Table 1.7.

According to the LAQM TG(22), an AQMA is compliant when the annual mean NO_2 concentrations are lower than 36 µg/m^3 (i.e. within 10% of the annual mean NO2 objective) for three consecutive representative years. Kirkintilloch Road AQMA has been compliant for 5 consecutive years.

The Kirkintilloch Road AQMA will remain in place despite no breaches having occurred for several years, primarily due to planned infrastructure and development changes over the coming years.

Table 1.7 – Kirkintilloch Road Annual Mean NO_2 Monitoring Concentrations ($\mu g/m^3$)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	2019	2020	2021	2022	2023
1	261016	670198	Roadside	24.1	17.8	17.1	16.6	14.0
2	260549	669312	Roadside	31.5	23.3	27.6	24.0	18.4
3,4,5	260995	670130	Roadside	21.8	16.5	15.0	15.9	12.4
30	260580	669533	Roadside	22.1	18.1	16.9	17.6	18.9
31	260552	669320	Roadside	24.9	19.6	19.8	18.5	11.4
36	260571	669339	Roadside	29.0	23.6	24.4	22.0	17.1
37	260759	669999	Roadside	27.0	21.0	19.2	21.0	14.9

East Dunbartonshire's Air Quality Priorities

1.3 Source Apportionment

The AQAP measures presented in this report are intended to be targeted towards the predominant sources of emissions within East Dunbartonshire Council's area.

A source apportionment exercise was carried out by East Dunbartonshire Council in 2023. This identified that within the AQMA, the percentage source contributions were as follows:

Air pollution can be quantified in terms of emissions (the amount of pollutants released into the atmosphere from a source) or the concentration of pollutants in a location (air quality). The source apportionment presented in this section uses emissions. Emissions are related to concentrations, but not in a linear way, due to the effects of meteorology and atmospheric chemistry. Whilst it is exposure to elevated concentrations which cause the health effects, measures to reduce emissions will minimise these effects and are hence a useful approximation.

The NO_2 annual mean concentration in the Kirkintilloch Road AQMA already falls below the air quality threshold for 5 consecutive years, however source apportionment was undertaken as requested by SEPA. This was undertaken in accordance with the methodology provided in Box 7-5 of TG(22). Full calculations are presented in Appendix B.

Within Kirkintilloch Road AQMA a passive monitor was selected as the most appropriate to form the basis for the calculations with the highest 2023 annual mean concentration at a relevant receptor of NO_2 of 18.9 μgm^3. This AQMA is located along the A803 in Bishopbriggs.

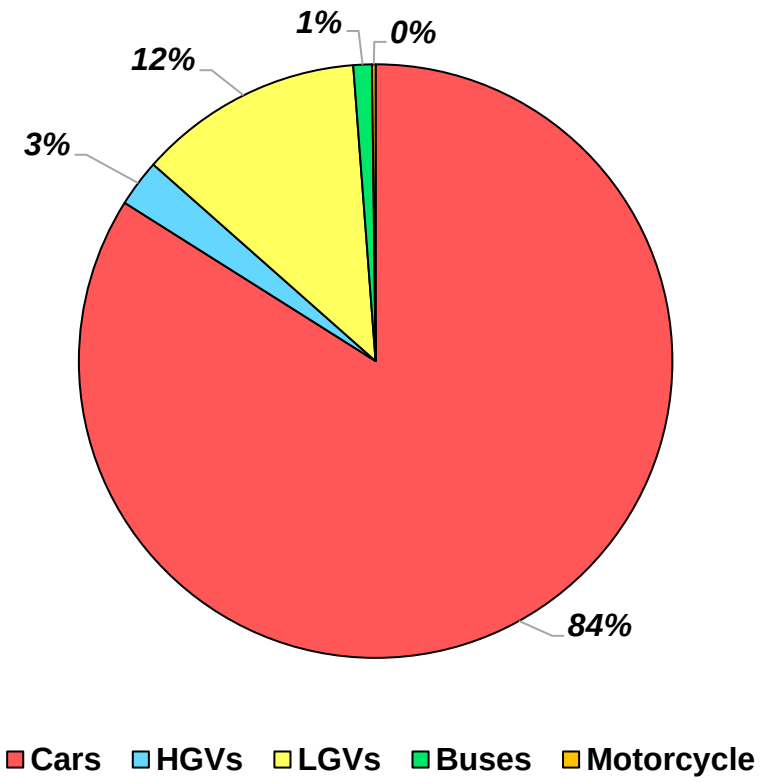
In summary, the source apportionment exercise identified within the Kirkintilloch Road AQMA, the percentage source contributions were as follows:

- Regional background = 1.6 μgm^3
- Local background = 14.0 μgm^3

Local traffic:

- Cars = 5.8 µgm^3 (84%)
- HGVs = 0.2 µgm^3 (3%)
- LGVs = 0.8 µgm^3 (12%)
- Buses = 0.1 µgm^3 (1%)
- Motorcycle = <0.0 µgm^3 (<0%)

Figure 1.2 – Percentage Contribution Source Apportionment in Kirkintilloch Road AQMA

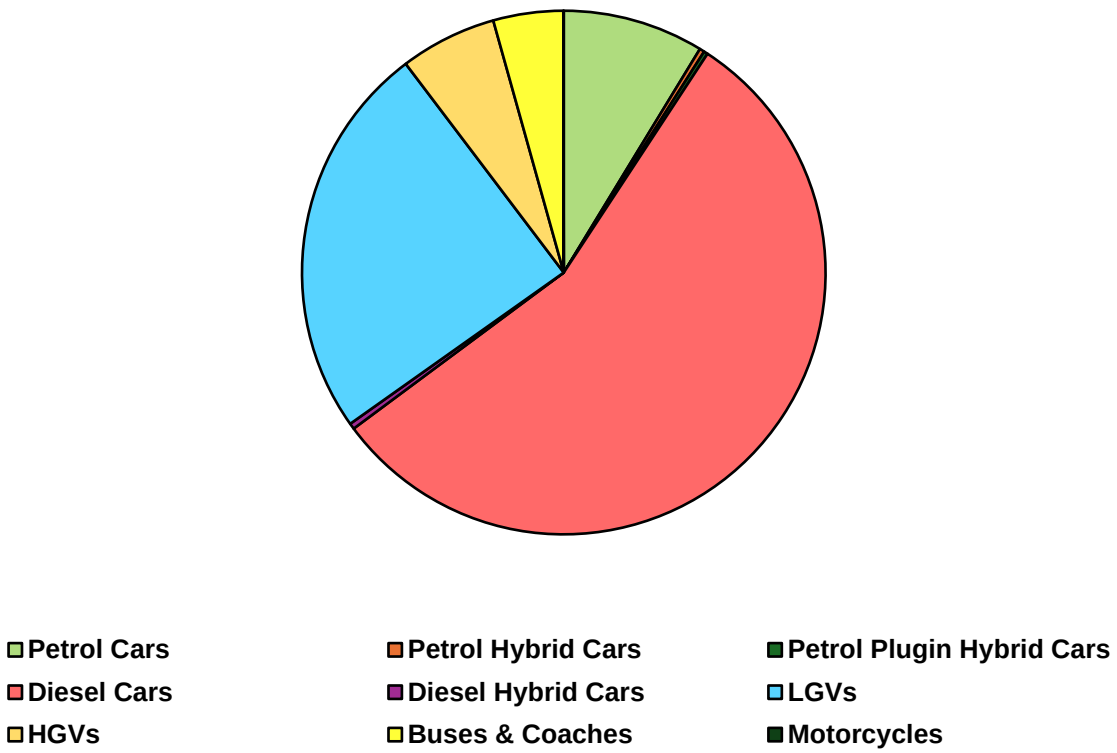


A summary of the traffic data is provided in Appendix B which considers the traffic flow and composition within the Kirkintilloch Road AQMA and data provided by the Department for Transport (DfT), . The DfT annual average daily flow traffic statistics have been used to determine the percentage by vehicle type. However, due to the way the DfT data is compiled and the use of estimates for years when a manual count has not been undertaken it is considered less robust for identifying trends in traffic flow.

Where a detailed modelling approach is not feasible, source apportionment may be undertaken using a simple spreadsheet approach. For example, where road traffic emissions are the principal concern, the percentage contribution to total NO_x emissions may be calculated using the appropriate emission factors. The level of detail will be dependent upon the road traffic data that are available. Data for emissions factors for typical fleets are included within the Emissions Factors Toolkit (EFT)[5].

The Emission Factor Toolkit (EFT) v12.0.1 has been used to provide an indication of the NO_x, PM_{10} and $PM_{2.5}$ emissions for 2023 by vehicle type along the A803. Figure 1.3 displays the breakdown of each vehicle type in 2023. Diesel and Hybrid Diesel Cars are amongst the highest NO_x contributors within the Kirkintilloch Road AQMA, followed by Petrol cars and HGVs. Full EFT setup is presented in Appendix B.

Figure 1.3 – Total NO_x Emission Source Apportionment in Kirkintilloch Road AQMA



[5] https://laqm.defra.gov.uk/air-quality/air-quality-assessment/emissions-factors-toolkit/

Figure 1.4 – Total PM_{10} Emission Source Apportionment in Kirkintilloch Road AQMA

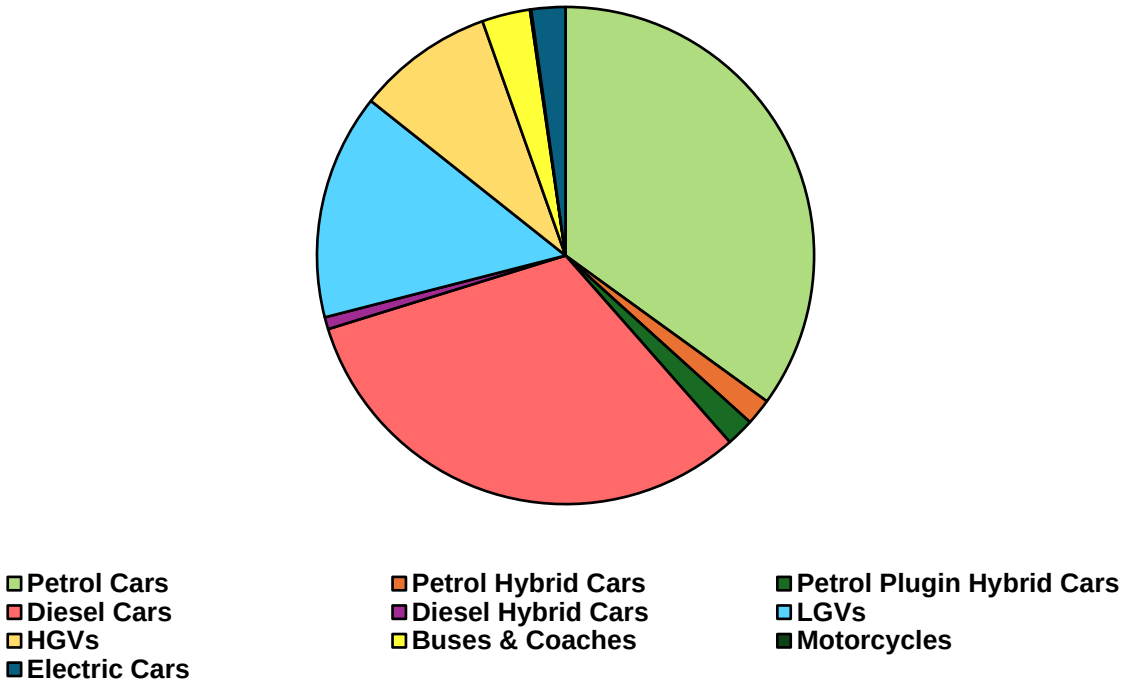
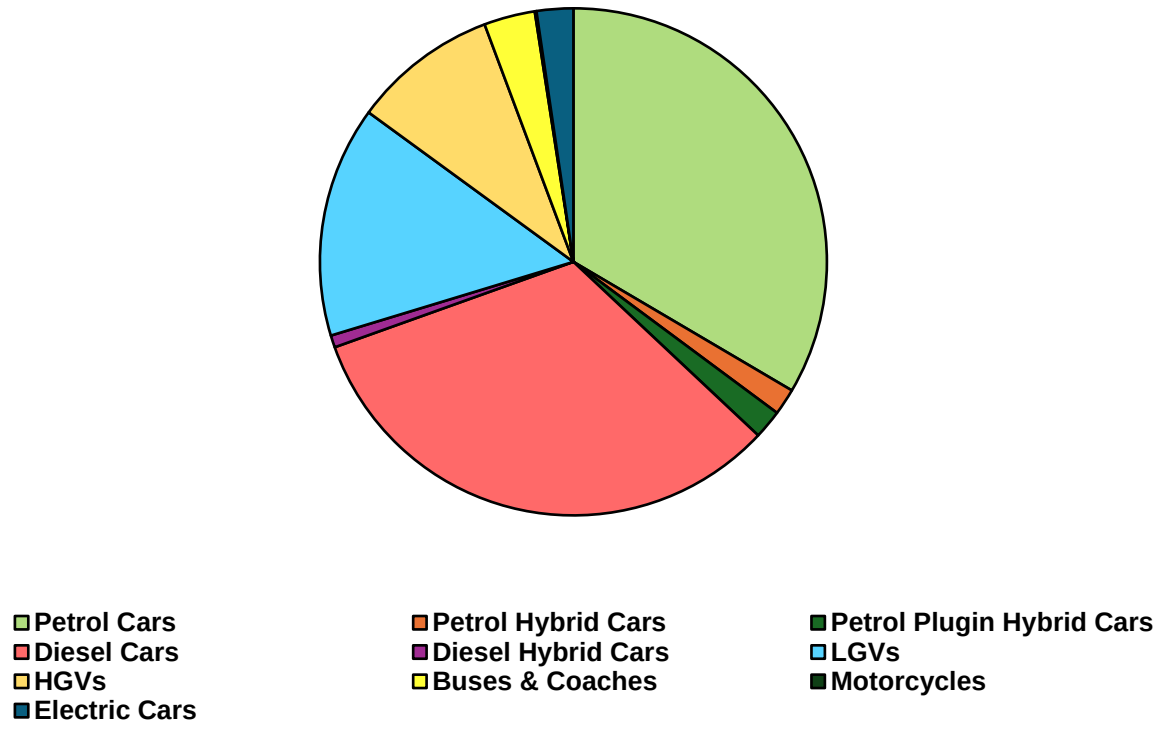


Figure 1.5 – Total $PM_{2.5}$ Emission Source Apportionment in Kirkintilloch Road AQMA



1.4 Required Reduction in Emissions

Within East Dunbartonshire, the 2023 diffusion tube monitoring all reported concentrations below the AQS objective of 40 µg/m³. Therefore the calculation of required reduction is not required. Though further emission reductions are not currently required, this may change in the future based on infrastructure changes.

1.5 Key Priorities

- **Priority 1 – Promote air quality with planning and transport strategies**

There are currently plans to promote air quality with planning and transport strategies through local development plans and early preparation work is being undertaken for LDP3 (Local Development Plan), which will replace and update the existing LDP2. The Active Travel Strategy 2023-2030 aims to accelerate the modal shift towards zero-carbon travel, which will help improve sustainable transport. East Dunbartonshire currently have an active Local Transport Strategy from 2020-2025.

- **Priority 2 – Sustainable Transport**

East Dunbartonshire Council currently have plans to make transport methods more sustainable, including the continued implementation of intelligent traffic management systems. Additional traffic management systems may be introduced as part of further improvement works on A803 corridor at the Kirkintilloch Road AQMA. Consultations on the potential alterations are underway.

The council promotes low emission transport through vehicle idling enforcement programmes. Scottish Government funding is used to carry out routine patrols around schools at drop off and pick-up times, particularly in winter months, and has been used to conduct awareness raising campaigns in local media to promote drivers to switch off their engines while parked. These and will be continued where appropriate and where funding permits.

The environmental fleet recognition scheme which has been in place since 2017 is currently being reviewed in 2024, and East Dunbartonshire are implementing further

uptake by private companies required to expand the network. Work is ongoing to promote the scheme throughout the Council area.

Priority 3 – Air Quality Monitoring

Currently, the concentration of NO_2 is monitored by East Dunbartonshire Council through a passive diffusion tube network consisting of 30 locations and 4 automatic monitoring stations. Air quality monitoring is a useful way to continually assess the extent of air pollution and identify any area of concern within East Dunbartonshire. It also helps to measure the success of the measures implemented as part of this AQAP, and thus acts as an evidence base for the ongoing infrastructure changes within the Kirkintilloch Road AQMA.

Development and Implementation of East Dunbartonshire AQAP

1.6 Consultation and Stakeholder Engagement

In developing/updating this AQAP, we have worked with other local authorities, agencies, businesses and the local community to improve local air quality. Schedule 11 of the Environment Act 1995 requires local authorities to consult the bodies listed in Table 1.8. <insert text here, e.g. In addition, we have undertaken the following stakeholder engagement:

- Local authority website
- Articles in local newspaper
- Questionnaires distributed directly to households along major roads
- Made hard copies of AQAP documents available for public viewing in Council premises.
- Etc.>

The response to our consultation stakeholder engagement is given in Appendix A: Response to Consultation.

Table 1.8 – Consultation Undertaken

Consultee	Consultation Undertaken
The Scottish Government	<Yes/No>
The Scottish Environment Protection Agency (SEPA)	<Yes/No>
Transport Scotland	<Yes/No>
All neighbouring local authorities	<Yes/No>

Consultee	Consultation Undertaken
Other public authorities as appropriate, such as NHS Scotland and Health Boards	<Yes/No>
Bodies representing local business interests and other organisations such as community groups as appropriate	<Yes/No>

AQAP Measures

Table 2.1 shows the East Dunbartonshire Council's AQAP measures. It contains:

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

NB: Please see future Annual Progress Report for annual updates on implementation of these measures.

Due to significant proposed changes to infrastructure adjacent to the A803 corridor which may alter or disrupt the validity of air quality monitoring in the area over the coming years, the AQMA has been retained until the associated impacts to air quality can be adequately assessed. Notwithstanding a significant change in circumstance, and in accordance with the requirements of PG(S)(24) and guidance from SEPA, East Dunbartonshire Council expects the Kirkintilloch Road AQMA to be revoked no later than 2027.

The existing table of measures and AQAP objectives shall continue to be implemented, and future measures which may be required should emissions change due to the infrastructure alterations will be investigated.

Table 2.1 – Air Quality Action Plan Measures

Measure No.	Measure	Category and Classification	Expected/Actual Completion Year	Measure Status	Delivery Organisation(s)	Funding Source	Funding Status	Estimated Cost of Measure	Target Reduction in Pollutant / Emission from Measure	Key Milestones	Comments (Progress)	Barriers to implementation
1	Maintain contact with Scottish Govt re adoption of national air quality measures	Policy guidance and development control	Ongoing	In progress	-	-	Annual funding via Scottish Government LAQM Grant	-	-	National objectives currently met for air quality throughout East Dunbartonshire	NO_2, PM_{10} and $PM_{2.5}$.	-
2	Promote air quality with planning and transport strategies and other Council Plans	Policy guidance and development control	Ongoing	In progress	-	-	Partially funded via developer contributions	-	-	-	LDP2 in place with early preparation work being undertaken for LDP3. Local Development Plan 2 | East Dunbartonshire Council The Active Travel Strategy 2023-2030 aims to accelerate the modal shift towards zero-carbon travel. Active Travel Strategy 2023-30: Evidence Summary and Approach | East Dunbartonshire Council Local Transport Strategy 2020-2025 in place. Local Transport Strategy 2020-2025 - East Dunbartonshire Council.	-
3	Intelligent traffic management systems	Traffic Management	2027	In progress	-	-	City deal projects subject to funding being available following	-	-	-	Westerhill Development Road has progressed with the preferred design option now being confirmed. Westerhill Development	-

Measure No.	Measure	Category and Classification	Expected/Actual Completion Year	Measure Status	Delivery Organisation(s)	Funding Source	Funding Status	Estimated Cost of Measure	Target Reduction in Pollutant / Emission from Measure	Key Milestones	Comments (Progress)	Barriers to implementation
							submission of business cases to Glasgow City Region				Road | East Dunbartonshire Council This new road will provide an alternative route and help divert traffic away from the AQMA in Bishopbriggs. Additional traffic management systems may be implemented as part of further improvement works on A803 corridor at the Kirkintilloch Road AQMA. Consultations on the potential alterations are underway. City Deal Latest News | East Dunbartonshire Council	
4	Parking Controls	Traffic Management	Ongoing	In progress	-	-	Not externally funded	-	-	-	A pilot Traffic Free Schools scheme was conducted around St Matthew's and Wester Cleddans Primary Schools during drop-off and pick-up times and has now been made permanent at these locations. Phase 2 of the project will pilot locations around Meadowburn Primary School and Thomas Muir Primary School Parking charges introduced in council car parks.	-

Measure No.	Measure	Category and Classification	Expected/Actual Completion Year	Measure Status	Delivery Organisation(s)	Funding Source	Funding Status	Estimated Cost of Measure	Target Reduction in Pollutant / Emission from Measure	Key Milestones	Comments (Progress)	Barriers to implementation
5	Mitigation of emissions from developments within and around the AQMA	Policy guidance and development control	Ongoing	In progress	-	-	Partially funded via developer contributions.	-	-	-	Regular review and updating of LDP and LTS takes account of policies consistent with air quality objectives. Mitigation includes active, sustainable travel measures. Included as planning condition as part of application consultation process.	Significant future development in close proximity to Kirkintilloch Road AQMA as part of City Deal funding requires monitoring to ensure continued compliance with air quality objectives.
6	Air quality planning guidance	Policy guidance and development control	Ongoing	In progress	-	-	Partially funded via developer contributions	-	-	-	Air quality planning guidance adopted 2018 and updated 2022. Planning Guidance - East Dunbartonshire Council	-
7	Council fleet replacement programme	Vehicle fleet efficiency	Ongoing	In progress	-	-	Not funded	-	-	14 new electric vehicles purchased in 2023 to replace leased vehicles.	Overall numbers have reduced slightly from 37 to 31 due to several leased vehicles not having been replaced.	Lack of electric vehicle charging points limits uptake and fleet is currently near capacity. Emphasis on providing improved charging infrastructure continues. Fleet replacement programme aims to reduce fleet size while maximising capacity
8	Environmental fleet recognition scheme	Vehicle fleet efficiency	Ongoing	In progress	-	-	Partially funded by annual Scottish Government Grant	-	-	-	EDC Fleet last assessed at 4* in 2020. Reassessment due 2024.	Further uptake by private companies required to expand the network. Work is ongoing to promote the

Measure No.	Measure	Category and Classification	Expected/Actual Completion Year	Measure Status	Delivery Organisation(s)	Funding Source	Funding Status	Estimated Cost of Measure	Target Reduction in Pollutant / Emission from Measure	Key Milestones	Comments (Progress)	Barriers to implementation
											Approx. 235 members overall of the EDC scheme with 7651 vehicles. Funding used to progress scheme within EDC.	scheme throughout the Council area.
9	Vehicle idling enforcement	Promoting low emission transport	Ongoing	In progress	-	-	Partially funded by Scottish Government Grant	-	-	-	Funding used to carry out regular patrols around schools at drop off and pick-up times, particularly in winter months. Awareness raising campaigns in local media conducted where funding permits to promote drivers to switch off their engines while parked. Individual complaints of idling vehicles responded to where possible.	Scottish Government guidance remains that drivers be asked to switch off engines, with enforcement only being taken where the driver refuses to do so. No fixed penalties issued to date as policy of education is adhered to.
10	Management of biomass installations	Promoting low emission plants	Ongoing	In progress	-	-	Not funded	-	-	-	No biomass being used in new EDC assets. All Council new-build now using CHP and/or air source heat pumps. All planning applications involving biomass/ wood burning appliances have an appropriate informative added to ensure appropriate appliances and/or fuels are used. Reactive investigation work undertaken in response to complaints.	Many domestic installations do not currently require planning permission.

Measure No.	Measure	Category and Classification	Expected/Actual Completion Year	Measure Status	Delivery Organisation(s)	Funding Source	Funding Status	Estimated Cost of Measure	Target Reduction in Pollutant / Emission from Measure	Key Milestones	Comments (Progress)	Barriers to implementation
11	Quality bus/bike partnerships	Alternatives to private vehicle use	2027	In progress	-	-	Externally funded by Transport Scotland	-	-	-	Cycle and walking routes will be developed where possible. Active Travel Strategy 2023 -2030 will introduce new projects across the authority area with increased opportunities for active travel.	-
12	Council smart working	Alternatives to private vehicle use	Ongoing	In progress	-	-	No funding	-	-	Reduced emissions from private vehicles used to attend place of work.	Reduced emissions from private vehicles used to attend place of work and reduced requirement for travel outwith Council area. Flexible working policy supports home working where appropriate.	-
13	Green travel planning	Alternatives to private vehicle use	Ongoing	In progress	-	-	Not currently funded	-	-	Pool bike training for staff successfully reintroduced during 2023	Pool bikes have been available for staff use for several years to facilitate workplace travel between Council offices and leisure use by staff, however, there has been a reduction in staff movement over recent years due to working from home.	The use of pool bikes fell to almost zero post pandemic. The predominance of staff working from home and altered habits are likely to blame.
14	Air quality awareness raising and education	Public Information	Ongoing	In Progress	-	-	Partially funded Annual funding by Scottish Government Grants	-	-	-	Various public awareness projects undertaken, including radio adverts and internet advertising. Air quality projects in schools being promoted as	-

Measure No.	Measure	Category and Classification	Expected/Actual Completion Year	Measure Status	Delivery Organisation(s)	Funding Source	Funding Status	Estimated Cost of Measure	Target Reduction in Pollutant / Emission from Measure	Key Milestones	Comments (Progress)	Barriers to implementation
											part of science and maths curriculum.	
15	Travel plans for large employers	Alternatives to private vehicle use	Ongoing	In Progress	-	-	Not funded	-	-	-	Strategic development and regeneration team ensure all relevant commercial planning applications have travel plan conditions applied in accordance with current best practice.	-
16	Improvements to SPT prioritised bus stops	Promoting travel alternatives	Ongoing	In progress	-	-	No funding	-	-	-	The process of improving SPT bus stops will continue as funding allows.	SPT funding has now ceased, with no future funding expected.
17	Soft measures – Healthy Habits	Promoting travel alternatives	Ongoing	In progress	-	-	No Funding	-	-	-	The Healthy Habits project will continue as funding allows to encourage local people to walk and cycle more often.	Paths for All funding ceased, no future funding expected.
18	Domestic emissions and fuel consumption awareness raising	Domestic solid fuel burning	Ongoing	In progress	-	-	Partial funding via Local Education Improvement Programme	-	-	-	Support for awareness raising of energy efficient measures by Scottish and UK government.	-
19	Tree and wild flower planting	Public Information	Ongoing	In progress	-	-	Partial funding via Buglife – the Invertebrate Conservation Trust	-	-	Over 36,000 m^2 of wildflower meadow planting, and over 3,500 trees planted	Trees, shrubs and wildflower meadows planted where possible to improve air quality and trap particulate matter.	-
20	Joint health improvement plan	Public Information	Ongoing	In progress	-	-	Not funded	-	-	-	The Local Outcomes Improvement Plan aims for the council and the Health & Social Care Partnership to work with local	-

Measure No.	Measure	Category and Classification	Expected/Actual Completion Year	Measure Status	Delivery Organisation(s)	Funding Source	Funding Status	Estimated Cost of Measure	Target Reduction in Pollutant / Emission from Measure	Key Milestones	Comments (Progress)	Barriers to implementation
											communities and residents in a joint effort to improve health, address health inequalities and increase awareness of active travel to help mitigate the impact of poor physical and mental health and air quality related health effects on the NHS. (https://www.eastdunbarton.gov.uk/sites/default/files/documents/local_outcomes_improvement_plan_2017-27.pdf)	
21	Green Infrastructure	Public Information	Ongoing	In progress	-	-	Partially funded via developer contributions	-	-	-	LDP Supplementary Guidance on Green Infrastructure and Green Network is available online. Green Infrastructure and Green Network 2023 - East Dunbartonshire Council	-
22	Taxi Licensing	Promoting low emission transport	Ongoing	In progress	-	-	Not funded	-	-	-	Frequency of testing increased to twice a year for older vehicles.	-

Appendix A: Response to Consultation

Table A.1 – Summary of Responses to Consultation and Stakeholder Engagement on the AQAP

Consultee	Category	Response
<Insert consultee e.g. Chamber of Commerce>	<Insert category e.g. Business>	<Insert text e.g. Disagree with plan to remove parking on High Street in favour of buses and cycles; consider it will harm business of members>

Appendix B: Source Apportionment Calculations

Table B.1 – Kirkintilloch Road AQMA Source Apportionment

Kirkintilloch Road AQMA		Concentration (µg/m^3)
Selected Annual Mean NO_2 Concentration at Site ID 30	[T-NO_2]	18.9
Step 1: Establishing and deriving background NO_2 and NO_x		
Total background NO_2 (for grid square within which Site ID 30 is located[6])	[TB-NO_2]	12.0
Total background NO_x	[TB-NO_x]	16.1
Regional background NO_x	[RB-NO_x]	2.1

[6] UK AIR Background Mapping for Local Authorities https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018

Derive a local background NO_x $[LB\text{-}NO_x] = [TB\text{-}NO_x] - [RB\text{-}NO_x]$	$[LB\text{-}NO_x]$	14.0
Step 2: Apportion the total background NO_2 into regional and local using regional and local NO_X proportions		
Regional NO_2 $[RB\text{-}NO_2] = [TB\text{-}NO_2]$ x ([RB-NOx]/ [TB-NOx])	$[RB\text{-}NO_2]$	1.6
Local NO_2 $[LB\text{-}NO_2] = [TB\text{-}NO_2]$ x ([LB-NO_x]/ [TB-NO_x])	$[LB\text{-}NO_2]$	10.5
Step 3: Calculate the local NO_2 contribution at the worst-case location $[L\text{-}NO_2]$ from the total measured minus background		
[L-NO2] = [T-NO2] - [TB-NO2]	[L-NO2]	6.9
Step 4: Apportion the local contributions to total NO_2 concentration		
NO_2 Cars = 84% x $[L\text{-}NO_2]$		5.8

NO_2 HGVs = 3% x [L-NO_2]	0.2
NO_2 LGVs = 12% x [L-NO_2]	0.8
NO_2 Buses = 1% x [L-NO_2]	0.1
NO_2 Motorcycle = <0.0% x [L-NO_2]	<0.0
Final Source Apportionment of the worst-case NO_2 18.9 µg/m^3: • Regional background = 1.6 µgm^3 • Local background = 14.0 µgm^3 Local traffic: • Cars = 5.8[7] µgm^3 (84%) • HGVs = 0.2 µgm^3 (3%) • LGVs = 0.8 µgm^3 (12%)	

[7] https://roadtraffic.dft.gov.uk/manualcountpoints/10917

- Buses = 0.1 µgm^3 (1%)
- Motorcycle = <0.0 µgm^3 (<0%)

Table B.2 – Kirkintilloch Road AQMA EFT Source Apportionment

Primary Inputs		Pollutants	Selected	Standard Outputs	Selected	Additional Outputs	Selected	Advanced Options	Selected	Click the button to:
Area	Scotland	NO_x	Y	Air Quality Modelling (g/km/s)	Y	Breakdown by Vehicle	Y	Bespoke Base Fleets		Run EFT
Year	2023	PM_{10}		Emissions Rates (g/km)		Source Apportionment	Y	Bespoke Euro Fleet		
Traffic Format	Detailed Option 1	$PM_{2.5}$		Annual Link Emissions		PM by Source		Fleet Projection Tool		Clear Input Data
All must be selected		CO_2				Primary NO_2 Fraction				
						Export Outputs				

SourceID	Road Type	Traffic Flow	% Car	% Taxi (black cab)	% LGV	% HGV	% Bus and Coach	% Motorcycle	Speed(kph)	No of Hours	Link Length (km)
Dft Count Point 10917	Rural (not London)	14373	83.95602866	0	12.2730119	2.567313713	1.008836012	0.194809713	64	24	

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
AQS	Air Quality Strategy
APR	Annual Progress Report
EU	European Union
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
SEPA	Scottish Environment Protection Agency
LDP	Local Development Plan

References

- Local Air Quality Management Technical Guidance LAQM.TG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Local Air Quality Management Policy Guidance LAQM.PG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Defra, UK AIR available at https://uk-air.defra.gov.uk/aqma/.
- East Dunbartonshire Council, 2022, Local Development Plan 2.
- East Dunbartonshire Council, 2023, LAQM Annual Progress Report 2024.
- East Dunbartonshire Council AQAP.