Revocation of Rutherglen Air Quality Management Area Report

Background

- Introduction
  An Air Quality Management Area (AQMA) in Rutherglen encompassing the whole town area was declared in 2016 due to likely breaches of Particulate Matter (PM_{10}) annual mean air quality objective of 18µg/m^3

  Rutherglen is situated at the north-western tip of South Lanarkshire, bordering the City of Glasgow. Formerly within the Glasgow City boundary, the town is commonly considered part of greater Glasgow and is a densely populated area of large scale former industrial land use. The land use in Rutherglen predominantly comprises residential properties and local retail with some remaining industry.

  A link to the South Lanarkshire Council Air Quality Management Area Order No.2 Rutherglen is available here: https://www.scottishairquality.scot/laqm/aqma/1610

  Measured PM_{10} concentrations have declined over recent years and, on this basis, South Lanarkshire Council are working towards revoking the Rutherglen AQMA. This report aims to provide evidence to support revocation.

- Legislation
  In exercise of the powers conferred upon it by Section 83(1) of the Environment Act 1995 South Lanarkshire declared South Lanarkshire Council Air Quality Management Area No.2 Rutherglen which came into effect on 1st January 2016.

- Summary of proposal
  This report presents evidence to demonstrate that air quality objectives are not, and are unlikely to be, exceeded and as such the Rutherglen AQMA should be revoked.

Description of AQMA

- Pollutants declared for and time intervals, date declared
  The Rutherglen AQMA was declared due to potential exceedance of the Scottish annual mean objective for PM_{10}. The AQMA was declared January 2016.

- Description and extent of AQMA
  The AQMA encompasses the whole town of Rutherglen. The AQMA is demonstrated in map format in Annex A.

Description of local sources

- Local sources (e.g. traffic, industry)

  The principal source of NO_2 and PM_{10} emissions in Rutherglen was found to be road traffic on the main roads which pass through the town. Permitted industrial operators in the Rutherglen area mainly involve cement, concrete and roadside coating processes and fugitive emissions of PM_{10} which may be emitted from these processes were assessed during previous rounds of the LAQM review and assessment cycle. It was not considered likely that the PM_{10} annual mean would be exceeded at locations of relevant exposure close to any known fugitive dust sources in Rutherglen. Combustion associated with heating systems for commercial and domestic properties were also considered as contributors to NO_2 and PM_{10} emissions however these were not considered significant and unlikely to cause any exceedance of the air quality objectives.

  Dispersion modelling studies of road traffic emissions in Rutherglen were undertaken to allow detailed assessment of both NO_2 and PM_{10} concentrations. Two assessments undertaken in the Rutherglen area considered the impact of traffic on air quality pre and post M74 extension. It was noted that changes to traffic flow attributable to the opening of the motorway had displaced traffic that previously used Rutherglen as a route into Glasgow from the southeast. This meant a significant reduction of approximately 5,000 vehicles per day through Main Street, Rutherglen. This had a significant impact on the magnitude and spatial extent of the overall area modelled as exceeding the air quality objective for particulate matter.

  Rutherglen was designated due to a likely breach of the annual mean PM_{10} air quality objective. Air quality levels in Rutherglen exceed this objective where there is relevant exposure 60 metres east of the Farmeloan Road / Main Street junction. A further hotspot has also been noted approximately 70 metres north of the Farmeloan Road / Main Street junction. Street canyon conditions were observed in both these locations. Traffic volume, slow speed at junctions and street canyon effects were considered the main contributors to exceeding air quality objectives for particulate matter in the Rutherglen area.

  The air quality management area was not restricted to the areas of exceedances and instead encompassed the area recognised as the town of Rutherglen. This was to allow a more holistic approach to action planning. This approach also aimed to ensure that future action and development within the Rutherglen area took into consideration the potential impact on air quality across the wider Rutherglen area.

- Action planning measures which have been implemented

  Active travel

  'Love to Ride South Lanarkshire' was a tailored online behaviour change programme and platform which ran for eighteen months and has been proven to motivate and encourage more people on bikes. The project engaged with 35 workplaces and encouraged 18% of new riders to become occasional or regular riders and 9% of active occasional riders to become regular riders. More information is available here: Set cycling pledge ahead of Ride Anywhere Week - South Lanarkshire View

‘Beat the Street’ projects have been delivered in South Lanarkshire since 2018. This is a sustainable active travel behaviour change initiative aimed at encouraging residents and visitors to decrease journeys by car and increase journeys made using more active and sustainable means of travel. Projects have taken place in Lanark and Rutherglen, East Kilbride (EK)(x 3), Hamilton and Blantyre, Cambuslang and Rutherglen and within the Clydesdale area. Over 66,000 people have taken part and community engagement has ranged between 10 – 17% of the local population. Participants have walked, cycled, or wheeled over 820,000 miles. Some further information is available here: https://www.southlanarkshireview.scot/news/article/2411/winners_of_east_kilbride_s_latest_beat_the_street_challenge

‘BetterPoints – Think, Move, Breathe’ is an App based active and sustainable travel behaviour project that rewards participants for choosing active and sustainable ways of travelling across South Lanarkshire. More information is available here: BetterPoints - Think, Move, Breathe.

South Lanarkshire re-launched its ‘Cycle2Work’ scheme and in 2022 agreed that this scheme would now be an all-year-round project with no closing date for applications. More information is available here: Cycle2Work

Cycle training has also been provided within our schools. In academic year 2022-23 there were 67 schools delivering to Bikeability Level 1 and 52 schools training to Level 2 on-road with a further 2 schools delivering Level 2 style training in the playground.

Ongoing improvements and expansion of the cycling and walking network continued and a link to the current network is available via online resource linked here: The air that we breathe story map.

SLC Walking and Cycling Sustainable Travel Promotion. Each year SLC undertake a publicity campaign with our “Leave the Car at Home” message, and this involves a variety of publicity formats such as billboard advertising, bus rear advertising and supermarket digital sheet advertising.

Improvement in Bus Services – SLC in partnership with Strathclyde Partnership for Transport (SPT) have been improving facilities at bus stops including providing high quality bus shelters, making bus stops more accessible, with installation of high kerbs that are at the same height as the floor of the buses and providing timetable information at all bus stops. Also installed are real time passenger information along some of the strategic bus routes, making travelling by bus more convenient and desirable.

Education

Focused air quality workshops have been delivered to both primary and secondary school students.

Conference of Schools (COS1) event – On the back of the Conference of the Parties 26 (COP26) summit event in Glasgow in 2021 young people from all high schools within South Lanarkshire created a Youth Forum on Climate Change and Sustainability. They held their first mini-COP event called Conference of Schools 1 (COS1) in 2022 which was held over three days at Palace Grounds in Hamilton with more than 500 primary aged children in attendance. The Youth Forum came up with a theme for the event

"TIERS" which focused on Travelling, Influencing, Eating, Reduce-Reuse-Recycle, and Shopping. They asked the school attendees to commit to a set of pledges and to raise awareness across the rest of the schools. A further COS2 event also ran in February 2024 and more information is available: https://blogs.glowscotland.org.uk/sl/public/primaryscience/uploads/sites/13996/2024/05/28124907/COS2-Case-Study-final.pdf

Tackling engine idling

South Lanarkshire's no engine idling promotion campaign included banners which are displayed on a locational rota basis on streetlamps and railings. The campaign emphasises the effects of poor air quality from engine idling. The refreshed campaign branding '30 good reasons to switch off your engine' and '11 good reasons to turn off your engine' are in use around schools and sports centres. The new branding has been very well received. An example of the campaign is available here: https://www.southlanarkshireview.scot/news/article/1304/pupils_switch_on_to_social_to_ask_you_to_switch_off_your_engine.

Improvements to vehicle emissions

South Lanarkshire increased the numbers of fuel efficient and electric vehicles within the council fleet, including pool cars, sweepers, and a minibus, and expanded the public electric vehicle charging network with 133 charging points now available. Read more here: Tariff to be introduced for electric vehicle charging – South Lanarkshire View

An ECO Stars fleet scheme has been running since 2014 and aims to raise awareness among companies of the important role they can play in helping improve local air quality by enhancing the performance of their fleet. To date there are 289 members with 10,618 vehicles registered to the scheme. SLC is a member of the scheme. More information is available here: https://www.southlanarkshire.gov.uk/info/200193/pollution/263/air_quality/11

An Eco Stars Taxi scheme commenced in 2021 and has 13 taxi operators with a total of 174 vehicles registered within the scheme. Three Taxi Operators workshops have also been run as a joint initiative with North Lanarkshire Council. These workshops gave taxi operators information and advice on the Energy Savings Trust Switched on Taxi loan. Information on the Low Emission Zone (LEZ) scrappage scheme which is open to households within 20km of an LEZ was also provided (several towns within South Lanarkshire fall within this radius). The scrappage scheme provides grants to households to dispose of non-compliant vehicles. Information was also given on Glasgow's LEZ and how it might impact drivers from both North and South Lanarkshire, as well as showcasing some ultra-low emissions taxis from the Glasgow Taxi Centre.

In 2020 an Eco Stars Bus Operators workshop was held. This was also a joint initiative with North Lanarkshire Council to make bus operators aware of the funding incentives from BEAR (Transport Scotland's Bus Emissions Abatement Retrofit programme). This programme aims to fit buses/coaches with Clean Vehicle Retrofit Accreditation Scheme (CVRAS) accredited retrofit technology measures to support the delivery of Scotland's LEZs and neighbouring authorities benefit also by reducing nitrogen dioxide (NO_2) and

particulate matter (PM_{10} and $PM_{2.5}$) emissions in air. Three Bus Operators were successfully signed up to this programme following this workshop.

Traffic signal optimisation has been introduced at key locations where possible within areas that impact the flow of traffic to and within the AQMAs. The Split Cycle Offset Optimisation Technique (SCOOT) traffic light system enables groups of traffic signals in busy areas to work together so that traffic flow is smoother, congestion reduced, and emissions minimised.

Funded Vehicle Emissions Testing events have been held during summer months at locations that include existing, former, and potential AQMAs. Vehicles were randomly selected from the traffic and with Police assistance diverted to a safe site, and those vehicles are tested. These events were delivered in partnership with North Lanarkshire Council and Police Scotland. These events were exclusively funded by Scottish Government (SG) grant award and delivered by SLC certified Environmental Health Staff.

- Funding
  Many of the actions as listed above have been supported through funding awarded via Scottish Government's Air Quality Action Plan, Local Air Quality Management as well as Vehicle Emission Testing and Engine Idling grant funds. Scottish Government's previous three air quality funding grant streams have been amalgamated for year 24/25 into Local Air Quality Management as well as Air Quality Resource grant streams. Funding support has also been provided by Smarter Choices Smarter Places although this fund had been discontinued in 24/25. SPT's Active Travel, People and Places Funding opened in 24/25 and has supported delivery of some of the projects listed. South Lanarkshire Council's Climate Emergency Fund has also been utilised to support project delivery.

- Changes to local sources from measures which have been implemented or changes to local circumstances for emission sources
  No singular identifiable change to local sources attributed specifically to action plan measures has been identified. The full diverse array of measures was aimed at having a cumulative impact on overall emission levels.

Local Monitoring equipment

Automatic

- Site IDs, designation, address, NGR, dates of operation
  Site ID South Lanarkshire Rutherglen automatic monitoring station is a roadside unit located in Rutherglen at the crossroads between the A730 and B768, NGR NS 61145 61694. Monitoring for NOx and PM_{10} commenced in 2012. $PM_{2.5}$ and PM_1 monitoring commenced February 2017. Distance to relevant exposure is 60 metres and the nearest road is 1m. Inlet height 2m.

- Pollutants monitored for
  Nitric oxide, Nitrogen oxides as Nitrogen dioxide, Nitrogen dioxide, PM_{10}, $PM_{2.5}$, PM_1 and volatile PM_{10}.

- Types of equipment used
  NOx analyser model Thermo 42i, instrument serial number CM10220001

Palas Fidas instrument serial number 8140.

- Monitoring techniques used

  The Thermo 42i measures levels of nitrogen oxide (NO-NO_2-NO_x) in the emissions from a source using chemiluminescent technology, generating three continuous signals: NO, NO_2 and NOx. All three measurements are independent and have available outputs on the back of the analyser.

  The Fidas uses a counting measuring method – optical light scattering according to Lorenz-Mie from single particles – with the patented T-aperture to allow very precise measurement even at high concentrations without coincidence error.

Non-automatic

- Site IDs, designation, address, NGR, dates of operation

Site ID	Designation	Address	NGR	Dates of Operation
23(2011) 27(2012) 27(2013) 27(2014)	Roadside	Cambuslang Road, Rutherglen	NS 63505 61822	2011 - 2015
24(2011) 28(2012) 28(2013) 28(2014) 12(2015) 12(2016) 12(2017) 12(2018) 12(2019) 12(2020) 12(2021) 12(2022) 12(2023)	Roadside	Farmeloan Road, Rutherglen	NS 61662 61789	2011 - ongoing
25(2011) 29(2012) 29(2013) 29(2014)	Roadside	Stonelaw Road, Rutherglen	NS 61693 61178	2011 - 2015
30(2012) 30(2013) 30(2014)	Roadside	263 Main Street, Rutherglen	NS 61682 61681	2012 - 2015
31(2012) 31(2013) 31(2014) 14(2015) 14(2016) 14(2017) 14(2018) 14(2019) 14(2020) 14(2021) 14(2022) 14(2023)	Roadside	Mill Street, Rutherglen	NS 61312 60699	2012 - ongoing

32(2013) 32(2014)	Roadside	Main Street, Rutherglen (Co-location 1)	NS 61114 61691	2013 - 2015
33(2013) 33(2014)	Roadside	Main Street, Rutherglen (Co-location 2)	NS 61114 61691	2013 - 2015
34(2013) 34(2014)	Roadside	Main Street, Rutherglen (Co-location 3)	NS 61114 61691	2013 - 2015
18(2016) 18(2017)	Kerbside	281 Stonelaw Road, Rutherglen	NS 62162 60431	2016 - 2017
13(2015) 13(2016) 13(2017) 13(2018) 13(2019) 13(2020) 13(2021) 13(2022) 13(2023)	Roadside	254 Main Street, Rutherglen	NS 61653 61663	2015 - ongoing
15(2015) 15(2016) 15(2017)	Roadside	25 Burnside Road, Rutherglen	NS 62484 59416	2015 -2018
16(2015) 16(2016) 16(2017)	Roadside	1 Rodger Drive, Rutherglen	NS 61789 60949	2015 -2018

- Pollutants monitored for
  Nitrogen dioxide

- Location in AQMA
  32,33 and 34 were co-located at the continuous air monitoring station located in Rutherglen however these tubes were discontinued following continual theft and vandalism of the tubes in this location. All other diffusion tubes are located in the Rutherglen wider area.

- Distance to relevant exposure and to kerb of nearest road

Site Id	Distance to relevant exposure (m)	Distance to kerb of nearest road (m)
23(2011) 27(2012) 27(2013) 27(2014)	n/a	2
24(2011) 28(2012) 28(2013) 28(2014) 12(2015) 12(2016) 12(2017) 12(2018)	25	2

12(2019) 12(2020) 12(2021) 12(2022) 12(2023)		
25(2011) 29(2012) 29(2013) 29(2014)	21	2
30(2012) 30(2013) 30(2014)	0	2
31(2012) 31(2013) 31(2014) 14(2015) 14(2016) 14(2017) 14(2018) 14(2019) 14(2020) 14(2021) 14(2022) 14(2023)	4	2.5
32(2013) 32(2014)	10	2
33(2013) 33(2014)	10	2
34(2013) 34(2014)	10	2
18(2016) 18(2017)	1.6	1.4
13(2015) 13(2016) 13(2017) 13(2018) 13(2019) 13(2020) 13(2021) 13(2022) 13(2023)	3.8	0.1
15(2015) 15(2016) 15(2017)	9	0.3
16(2015) 16(2016) 16(2017)	18.5	0.7

Local Monitoring data

- Air Quality Standards and Objectives
  PM_{10} annual mean = 18μgm^{-3} (Rutherglen declared due to this objective)
  PM_{10} 24-hour mean = 50 μgm^{-3} not to be exceeded more than seven times a year

$PM_{2.5}$ annual mean = 10 μgm^{-3}
NO_2 annual mean = 40 μgm^{-3}
NO_2 1-hour mean = 200 μgm^{-3}not to be exceeded more than 18 times a year

- Results and data interpretation from automatic sites

Annual Mean PM_{10} Monitoring Results ($\mu g/m^3$) uncorrected (Objective = 18μgm^{-3})

Site ID	2019	2020	2021	2022	2023
SL04	14	15.4	11.0	13.1	13.0

Annual Mean PM_{10} Monitoring Results ($\mu g/m^3$) corrected (Objective = 18μgm^{-3})

Site ID	2019	2020	2021	2022	2023
SL04	14	10.0	11.9	11.8	11.0

Annual Mean $PM_{2.5}$ Monitoring Results ($\mu g/m^3$) uncorrected (Objective = 10 μgm^{-3})

Site ID	2019	2020	2021	2022	2023
SL04	8	6.0	5.9	6.2	6.0

Annual Mean $PM_{2.5}$ Monitoring Results ($\mu g/m^3$) corrected (Objective = 10 μgm^{-3})

Site ID	2019	2020	2021	2022	2023
SL04	8	6.4	6.3	6.6	6.4

24-Hour-Mean PM_{10} Monitoring Results ($\mu g/m^3$), Number of PM10 24 Hour Means > 50 $\mu g/m^3$ (Objective = 50 μgm^{-3} not to be exceeded more than seven times a year)

Site ID	2019	2020	2021	2022	2023
SL04	4	0	0	0	0

Annual Mean NO_2 Monitoring Results: Automatic Monitoring ($\mu g/m^3$) (Objective = 40 μgm^{-3})

Site ID	2019	2020	2021	2022	2023
SL04	36	-	25.5	22.5	22

1-hour Mean NO_2 Monitoring Results: Automatic Monitoring ($\mu g/m^3$), Number of 1-Hour Means > 200 $\mu g/m^3$ (Objective = 200 μgm^{-3}not to be exceeded more than 18 times a year)

Site ID	2019	2020	2021	2022	2023
SL04	0	-	0	0	0

- Results and data interpretation from non-automatic sites

Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring ($\mu g/m^3$) (Objective = 40 μgm^{-3})

Site ID	2019	2020	2021	2022	2023
12	34.9	27.7	27.9	25.1	25.1
13	23.9	17.3	20.1	17.0	17.2

14	29.4	19.3	22.6	18.9	19.8

- Results summary
  For the previous three years the 18 µg/m3 Scottish PM_{10} annual mean objective has not been exceeded at the Rutherglen continuous air quality monitoring station. No PM_{10} daily means greater than 50 µg/m3 were measured; compliant with the 24-hour short-term mean objective.

  All annual mean NO_2 concentrations measured at automatic and non-automatic monitoring sites within the Rutherglen area were below the annual mean objective of 40 µg/m3 and have been for in excess of three years. No sites measured 1-hour mean NO_2 concentrations in excess of 200 µg/m3 objective more than 18 times between 2019 and 2023; all measurement sites were therefore compliant with the 1-hour short-term mean objective.

  All monitoring results were significantly below the air quality objectives giving confidence that future exceedance is unlikely.

Future actions to be retained for the AQMA

- Measures to be continued to ensure future air quality objective compliance is achieved
  South Lanarkshire's updated air quality action plan is available here: Air quality action plan 2024-2029 Environment - South Lanarkshire Council. Strategic and Rutherglen focused action measures are summarised below. All measures are currently ongoing and will be integral to actions and strategies going forward.

  - Continue to strengthen links with all future Local Transport Strategies
  - Continue to strengthen links with local planning development
  - Continue to integrate air quality where appropriate with other SLC plans, policies or strategies.
  - Develop and adopt an Air Quality Strategy for SLC
  - Continue to review and update SLC AQ guidance and information
  - Work in partnership with SG on air quality matters
  - Work in partnership with SLC traffic and transportation partners on active and sustainable co-benefits projects
  - Continue to invest in traffic signal optimisation to improve traffic flow and decrease traffic emissions
  - Continue to support the uptake of low emission vehicles
  - Continue to support measures to ensure adequate maintenance of current counters and to support measures to increase the traffic counter network over all transport modes.
  - Continue to support ongoing AQ education resources for relevant SLC departments
  - Continue to support rail and bus station improvements
  - Continue to support AQ educational resources with all our education sector partners within SL
  - Continue to support expansion of active travel options.
  - Continue to support active and sustainable travel behaviour change.
  - Continue to monitor and review air quality within South Lanarkshire.
  - Support development control measures that have a positive impact on AQ.
  - Continue to undertake vehicle emission testing and / or awareness raising subject to funding.

- Continue to undertake anti- engine Idling activities subject to funding.
- Continue to support real time passenger information via a variety of means over all forms of public transport.
- Support cycle or other active travel equipment hire / cycle library schemes.

- Development/updating of an air quality strategy
  Work has commenced on the development of a South Lanarkshire Air Quality Strategy.

Conclusion

The Rutherglen AQMA was declared due to potential exceedance of the Scottish annual mean objective for PM_{10}. Monitoring data for the annual mean PM_{10} as well as the 24-hour short-term mean PM_{10} objective, the NO_2 annual mean objective and the 1-hour short-term mean NO_2 objective has been reviewed. No exceedances of any of the PM_{10} and NO_2 air quality objectives have been measured for in excess of three years. All monitoring results were significantly below the air quality objectives giving confidence that future exceedance is unlikely. On this basis South Lanarkshire are revoking the Rutherglen AQMA.

Annexe A

Map of Rutherglen Air Quality Management Area