

Annual Progress Report (APR)



2023 Air Quality Annual Progress Report (APR) for Comhairle nan Eilean Siar

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

Local Air Quality Management

June, 2023 (amended March 2024)

Comhairle nan Eilean Siar

Information	Comhairle nan Eilean Siar
Local Authority Officer	Ruth Smith, Colm Fraser
Department	Chief Executive's Dept.
Address	Sandwick Road, Stornoway, Isle of Lewis, HS1 2BW
Telephone	01851 822 694
E-mail	ruth.smith@cne-siar.gov.uk
Report Reference Number	LAQM/APR/2023
Date	29 th June 2023 (amended 11 th March 2024)

Executive Summary: Air Quality in Our Area

Air Quality in the Western Isles

This report considers local air quality management in the Western Isles, examining relevant policies and technical guidance documents.

Air quality is a major environmental health risk in the UK. A person's health can be affected by short-term, high pollution episodes and by long-term exposure to lower levels of pollution. There are many things we can do that can make a big difference to emissions and communicating effectively with the public about air pollution and what action can be taken can help improve people's health and ultimately save lives.

As in previous submissions there are no significant changes and no new air pollution sources have been identified. The Outer Hebrides Local Development Plan (Adopted Plan) 2018 demonstrates a shift in transport infrastructure to incorporate new footpaths and more cycle routes in and around settlements and improve cycle storage at new public buildings, community facilities, schools, major business premises and flatted dwellings. CNES will support the provision of electric car charging points in new developments.

Passive diffusion tube monitoring for Nitrogen Dioxide (NO₂) was carried out in 2022 and the results are reported in this document. The results show that the pollutant levels are below the action levels.

Comhairle nan Eilean Siar works closely with SEPA and has in place a Development Strategy which considers environmental impacts on the local authority area and transport infrastructure. SEPA have a monitoring station on Lewis as part of the (VEN) Volcanic Emission Network

<https://www2.sepa.org.uk/VolcanicEmissionsNetwork/Dashboard.aspx?id=Lewis>

The monitoring station monitors for Particulate Matter (PM) and Sulphur Dioxide (SO₂), but the data can only be classed as indicative as the PM monitors have not been certified and the SO₂ data has not been verified.

There are currently no air quality issues within this local authority area.

Actions to Improve Air Quality

The report concludes that detailed assessments are not required for any pollutant. There have been no AQMA's declared within the local authority area.

Local Priorities and Challenges

For the coming year CNES will not be carrying out any monitoring of pollutants. Further monitoring will be undertaken if there is new development proposed that warrants air quality monitoring however it is expected that in 5 years' time further monitoring will be undertaken to verify that there are still no air quality issues in the area.

Our Local Authority has no specific priorities or challenges for the coming year beyond the statutory monitoring and reporting requirements.

How to Get Involved

The public can access further information on air quality by emailing eh@cne-siar.gov.uk the Council experienced a cyber-attack in November 2023 and the website is currently being rebuilt.

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1 Local Air Quality Management

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

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

Table 1.1 – Summary of Air Quality Objectives in Scotland

Pollutant	Air Quality Objective Concentration	Air Quality Objective Measured as	Date to be Achieved by
Nitrogen dioxide (NO ₂)	200 µg/m ³ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
Nitrogen dioxide (NO ₂)	40 µg/m ³	Annual mean	31.12.2005
Particulate Matter (PM ₁₀)	50 µg/m ³ , not to be exceeded more than 7 times a year	24-hour mean	31.12.2010
Particulate Matter (PM ₁₀)	18 µg/m ³	Annual mean	31.12.2010
Particulate Matter (PM _{2.5})	10 µg/m ³	Annual mean	31.12.2021
Sulphur dioxide (SO ₂)	350 µg/m ³ , not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
Sulphur dioxide (SO ₂)	125 µg/m ³ , not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
Sulphur dioxide (SO ₂)	266 µg/m ³ , not to be exceeded more than 35 times a year	15-minute mean	31.12.2005
Benzene	3.25 µg/m ³	Running annual mean	31.12.2010
1,3 Butadiene	2.25 µg/m ³	Running annual mean	31.12.2003
Carbon Monoxide	10.0 mg/m ³	Running 8-Hour mean	31.12.2003

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMA) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority must prepare publish and implement an Air Quality Action Plan (AQAP) within the shortest possible time and no later than 12 months of the date of AQMA Designation Order. The AQAP must set out measures the local authority intends to put in place in pursuit of the objectives within the shortest possible time. Measures should be provided with milestones and a final date for completion. The action plan itself should have a timescale for completion and for revocation of the AQMA. Where measures to reduce air pollution may require a longer timescale an action plan shall be reviewed and republished within five years of initial publication and then five-yearly thereafter.

Comhairle nan Eilean Siar currently does not have any AQMAs, and we are working towards producing an air quality strategy.

2.2 Cleaner Air for Scotland 2

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

Progress by Comhairle nan Eilean Siar against relevant actions for which local authorities are the lead delivery bodies within this strategy is demonstrated below.

2.2.1 Placemaking – Plans and Policies

Local authorities with support from the Scottish Government will assess how effectively air quality is embedded in plans, policies, City Deals and other initiatives, and more generally in cross departmental working, identifying and addressing evidence, skills, awareness and operational gaps.

Comhairle nan Eilean Siar considers air quality as part of the planning process. Further examination of local authority departments, plans and policies with regard to air quality will be carried out in 2023.

2.2.2 Transport – Low Emission Zones

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

Comhairle nan Eilean Siar has no Low Emission Zones established within the Local Authority area.

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

In order to ensure that local authorities implement the measures within an action plan by the timescales stated within that plan, the Scottish Government expects authorities to submit updates on progress through the APR process. Comhairle nan Eilean has carried out diffusion tube monitoring during the current reporting year of 2022 in pursuit of improving local air quality and meeting the air quality objectives within the shortest possible time. Details of all measures completed, in progress or planned are set out in Table 2.1.

Table 2.1 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Expected/ Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
1	Outer Hebrides Active Travel Strategy https://www.cne-siar.gov.uk/media/20635/outer_hebrides_active_travel_strategy_v4.pdf	Alternative to Private Vehicle Use Transport Planning and Infrastructure	2021-2025	In progress	Planning to apply for partial funding through Sustrans, difficulty as annual so difficult to plan accordingly.	By 2030 - Scotland's Active Travel Framework vision is that communities will be based around people, with walking and cycling used primarily for short everyday journey's	A delivery plan will be developed with targeted interventions specific to each island, to deliver the aims and objectives of this strategy based on the needs and requirements of each community	Cycling by Design Guide urban focused doesn't consider rural roads.
2	Local Development Plan https://www.cne-siar.gov.uk/media/12598/ohldp-adopted-plan.pdf	Policy Guidance and Development Control	Plan adopted in 2018	In progress	N/A	To encourage and facilitate sustainable economic growth and help build confident and resilient communities, the Plan will provide planning policy that delivers long term benefits to the communities of the Outer Hebrides by ensuring development contributes to the creation of well-	Sets out a vision and spatial strategy for the development of land in the Outer Hebrides over the next 10-20 years	High building costs and lack of access to mortgages

						designed and attractive places, and that our natural, marine, and cultural resources are valued and utilised efficiently and sustainably		
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3 Air Quality Monitoring Data and Comparison with Air Quality Objectives

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Comhairle nan Eilean Siar does not undertake any automatic (continuous) monitoring within the authority's area.

3.1.2 Non-Automatic Monitoring Sites

Comhairle nan Eilean Siar undertook non- automatic (passive) monitoring of NO₂ at 5 sites during 2022. Table A.1 in Appendix A shows the details of the sites.

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

3.1.3 Other Monitoring Activities

Comhairle nan Eilean Siar has not undertaken any other monitoring activities in 2022.

3.2 Individual Pollutants

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

3.2.1 Nitrogen Dioxide (NO₂)

Table A.2 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 2022 dataset of monthly mean values is provided in Appendix B.

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. The NO₂ concentrations have not exceeded the Air Quality objective for 2022.

3.2.2 Particulate Matter (PM₁₀)

Comhairle nan Eilean Siar does not undertake monitoring for PM₁₀

3.2.3 Particulate Matter (PM_{2.5})

Comhairle nan Eilean Siar does not undertake monitoring for PM_{2.5}

3.2.4 Sulphur Dioxide (SO₂)

Comhairle nan Eilean Siar does not undertake monitoring for SO₂

3.2.5 Carbon Monoxide, Lead and 1,3-Butadiene

Comhairle nan Eilean Siar does not undertake monitoring for Carbon Monoxide, Lead or 1,3 Butadiene.

4 New Local Developments

The Stornoway Port Authority are redeveloping the Arnish harbour area. The deep-water quay is being developed to allow large cruise ships to dock in the harbour. The Stornoway harbour improvement works are to take place over a 20-year period. Work commenced in 2022.

There have been no other new developments identified within the Western Isles that may affect air quality.

4.1 Road Traffic Sources

There are no new traffic sources as specified and no significantly changed traffic flows in the Western Isles.

4.2 Other Transport Sources

There are no new transport sources within the Western Isles.

4.3 Industrial Sources

There are no new or proposed industrial sources in the Western Isles.

4.4 Commercial and Domestic Sources

There are no new commercial or domestic sources in the Western Isles.

4.5 New Developments with Fugitive or Uncontrolled Sources

There are no new developments with fugitive or uncontrolled sources identified.

5 Planning Applications

The proposed Stornoway Harbour redevelopment works are to be carried out over 20 years until 2042. Each phase is to undergo an environmental impact assessment where issues such as air quality will be assessed.

There are several planning applications for wind farms that have not been built yet as they are dependent on a new larger electric interconnector being installed first. If the interconnector gets installed the wind farm developments will then go ahead. These developments may have an impact on future local air quality and will be considered in the next Progress Report.

6 Conclusions and Proposed Actions

6.1 Conclusions from New Monitoring Data

There were no exceedances identified in 2022. Further monitoring will not be undertaken in 2023.

6.2 Conclusions relating to New Local Developments

The proposed Stornoway Harbour redevelopment works may impact on air quality. Future reports will consider having summaries of any environmental impact assessments included.

6.3 Proposed Actions

There was new monitoring data for 2022. As no exceedances were identified therefore it is concluded that a detailed assessment was not required.

Comhairle nan Eilean Siar does not have any evidence to support creating an AQMA in the Western Isles.

The local authority's next course of action is to submit the next Air Quality Annual Progress Report in 2023.

Appendix A: Monitoring Results

Table A.1 – 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)
1	Seaview Terrace, Stornoway	Kerbside	581217	62229	NO ₂	No	2	2	N	2.5
2	South Beach Street, Stornoway	Roadside	582077	63875	NO ₂	No	1	3	N	2.5
3	Perceval Square, Stornoway	Kerbside	582089	63888	NO ₂	No	4	4	N	2.5
4	Arnish Point	Roadside	581860	63810	NO ₂	No	1	2	N	2.5
5	Barony Square, Stornoway	Urban Background	582149	637514	NO ₂	No	1	1	N	2.5

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.

There were no exceedances of the annual mean objective of 40µg/m³

The data did not require to be ‘annualised’ as per LAQM TG(22)

Table A.2 – Annual Mean NO₂ Monitoring Results (µg/m³)

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
1	Kerbside	Diffusion Tube	95	95	<u>5.14</u>	-	-	-	5.14
2	Roadside	Diffusion Tube	95	95	-	-	-	-	14.59
3	Kerbside	Diffusion Tube	75	75	<u>11.44</u>	-	-	-	11.44
4	Roadside	Diffusion Tube	95	95	-	-	-	-	3.36
5	Urban Background	Diffusion Tube	95	95	-	-	-	-	4.41

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. Means have not been “annualised” as per LAQM.TG(22) as valid data capture for the full calendar year is not 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 2022

Table B.1 – NO₂ 2022 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 (1.05) ⁽¹⁾
1	5.9	No return	2.3	4.7	5.9	3.5	8.6	6.0	3.3	3.3	5.0	5.4	4.9	5.14
2	15.4	No return	9.9	16.2	15.8	13.2	8.8	11.5	6.2	22.7	25.0	8.3	13.9	14.59
3	10.7	No return	7.5	8.4	10.6	7.3	11.4	No return	No return	14.9	15.8	11.6	10.9	11.44
4	2.1	No return	2.1	3.7	2.1	2.1	2.8	5.8	2.4	6.2	2.5	3.0	3.2	3.36
5	7.3	No return	4.6	2.1	3.6	2.1	2.1	4.6	2.1	5.9	6.7	5.3	4.2	4.41

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 Within Comhairle nan Eilean Siar During 2022

Comhairle nan Eilean Siar has not identified any new sources relating to air quality within the reporting year of 2022.

Additional Air Quality Works Undertaken by Comhairle nan Eilean Siar During 2022

Comhairle nan Eilean Siar has not completed any additional works within the reporting year of 2022.

QA/QC of Diffusion Tube Monitoring

There is one background sampling location, 2 kerbside and 2 roadside locations. The passive diffusion tubes are in place for 4 weeks then sent off to Glasgow Scientific Services for analysis. The laboratory is UKAS accredited and carries out the analysis in accordance with the report “Diffusion Tubes for Ambient NO₂ Monitoring: Practical Guidance for Laboratories and Users; Report to DEFRA and the Devolved Administrations, ED48673043, Issue 1a, February 2008’. The results are calculated using a diffusion coefficient at 11°C. The results reported in mass units (µg/m³ or ppb) are based on a temperature of 20°C and a pressure of 101.3kPa and method of preparation is 20% TEA in water.

To determine the bias adjustment the National Diffusion Tube Bias Adjustment Factor Spreadsheet was version 06/2023. The bias adjustment used for Glasgow Scientific Services is 1.05.

The monitoring has been completed in adherence with the Diffusion Tube Monitoring Calendar.

Diffusion Tube Annualisation

All diffusion tube monitoring locations within Comhairle nan Eilean Siar recorded data capture of 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualisation.

Diffusion Tube Bias Adjustment Factors

Comhairle nan Eilean Siar have applied a national bias adjustment factor of 1.05 to the 2022 monitoring data. Comhairle nan Eilean Siar has not carried out any diffusion tube monitoring since 2016 so cannot provide a summary of bias adjustment factors over the past five years.

The National bias adjustment was taken from spreadsheet version 06/2023.

Table C.1 – Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2022	National	06/23	1.05
2021	N/A	N/A	N/A
2020	N/A	N/A	N/A
2019	N/A	N/A	N/A
2018	N/A	N/A	N/A

NO₂ Fall-off with Distance from the Road

No diffusion tube NO₂ monitoring locations within the Western Isles required distance correction during 2022.

Appendix D – Map of Monitoring Locations



Diffusion Tube locations

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)
CNES	Comhairle nan Eilean Siar
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

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