The Highland Council

Agenda Item	**12**
Report No	**CIA/22/25**

Committee: **City of Inverness Area**

Date: **19 May 2025**

Report Title: **Environmental Health – Air Quality Update 2024/25**

Report By: **Assistant Chief Executive – Place**

1 Purpose/Executive Summary

1.1 This report is to provide an update to Members on the air quality work undertaken by the Environmental Health Team during 2024/25, describing recent trends and the current status of air quality within Inverness area, including the Inverness City Centre Air Quality Management Area (AQMA)

2 Recommendations

2.1 Members are asked to **note and provide any feedback** on:-

i. The acceptance by Scottish Government (SG) of the 2024 AQMA Action Plan;
ii. The general improvement in air quality in the city centre;
iii. The Revocation of the Inverness City Centre Air Quality AQMA;
iv. The project work carried out in Primary Schools to monitor air quality and raise awareness;
v. The proposed delivery of a city centre anti-idling campaign on Clean Air Day 2025;
vi. The continued provision of Local Site Operator (LSO) service to the UK Automatic Urban and Rural Network (AURN); and
vii. The report format and content.

3 Implications

3.1 **Resource** – The resources available to Environmental Health (EH) have to be prioritised, focusing on areas of greatest public health significance. The team continually explores ways to delivering services more efficiently and within budget including reviewing associated income streams, working with COSLA regarding resource allocation and seeking efficiencies in working practice and team structure. Annual funding is sought from SG to support air quality monitoring and project work. The SG funding for 2025/26 has yet to be confirmed. The EH team was also successful in securing additional funding by being appointed the Local Site Operator (LSO) for three monitoring sites in Highland (this includes a site in Telford St, Inverness) as part of the UK Automatic Urban and Rural Network (AURN). This is currently yr3 of a 5yr contract.

3.2 **Legal** – Part IV of the Environment Act 1995 established the system of Local Air Quality Management (LAQM). LAQM places a statutory duty upon the Council to monitor and review air quality in Highland.

3.3 **Risk** – SEPA enforce the duties imposed upon the Council by the 1995 Act and may issue a formal direction to the Council if it is considered that the Council is failing to undertake those duties within a reasonable timeframe.

3.4 **Health and Safety (risks arising from changes to plant, equipment, process, or people)** – There are no staff Health, Safety and Wellbeing implications arising from this report.

3.5 **Gaelic** - There are no Gaelic implications arising from this report.

4 Impacts

4.1 In Highland, all policies, strategies, or service changes are subject to an integrated screening for impact for Equalities, Poverty and Human Rights, Children's Rights and Wellbeing, Climate Change, Islands and Mainland Rural Communities, and Data Protection. Where identified as required, a full impact assessment will be undertaken.

4.2 Considering impacts is a core part of the decision-making process and needs to inform the decision-making process. When taking any decision, Members must give due regard to the findings of any assessment.

4.3 This is a monitoring or update report and therefore an impact assessment is not required.

5 Air Quality – Background

5.1 Under Part IV of the Environment Act 1995, the Council has a duty to review and assess air quality throughout Highland. The Act also requires that if an assessment of air quality indicates that an air quality objective is unlikely to be achieved, the Council must designate these areas as an Air Quality Management Area (AQMA) by order. The UK Air Quality Objectives were established by the Air Quality (Scotland) Regulations 2000 (as subsequently amended in 2002 and 2016).

5.2 The Air Quality objective for nitrogen dioxide is an annual mean of 40µg/m^3 or a 1-hour mean of 200µg/m^3, the latter not to be exceeded more than 18 times in a year. The air quality objectives only apply where Members of the public are likely to be regularly present for the averaging time of the objective (i.e. where people will be exposed to pollutants). For annual mean objectives, relevant exposure is limited to residential properties, schools, and hospitals. The 1-hour mean objective would also apply on the pavements of busy shopping streets.

5.3 A detailed assessment report of air quality in Inverness City Centre in 2014 determined a small area where the air quality objective for nitrogen dioxide (annual mean) was not being achieved. The Inverness City Centre AQMA was designated by order on the 9 September 2014.

5.4 In the following years, the Council has formulated an action plan for the AQMA, working with partners and stakeholders to progress actions that would improve air quality in the AQMA. The Council also expanded the air quality monitoring network in the city to track pollutant levels and quantify improvement.

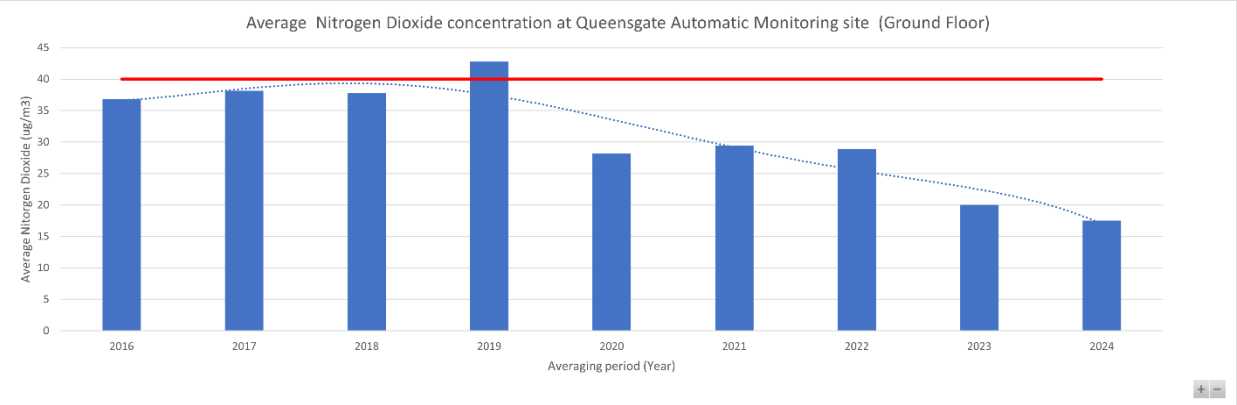
5.5 The Action plan originally drafted in 2016, was amended in 2024 and approved by this Committee in May 2024. The revised Action Plan was accepted by Scottish Government (SG) and has been published on the Council website.

5.6 The Council requires to submit for SG approval an Annual Progress Report (APR) on work undertaken to review and assess air quality within the Highlands. All the APR Reports from 2013 to the current 2024 report are published on the Air Quality pages of the Council website. The most recent APR 2024 report has been approved by SG.

5.7 The air quality within the Highlands is currently considered good and meets all the relevant objective criteria.

6 Revocation Of AQMA Within Inverness City Centre

6.1 As outlined within the report - Inverness Air Quality Management Area Action Plan – taken to this Committee on 27 May 2024, the annual mean trend in Nitrogen dioxide measured using an automatic monitor on Queensgate has recorded a sustained and significant decrease since 2020. The data recorded at the automatic monitor on Queensgate reported an annual mean concentration of Nitrogen dioxide for 2024 of 17µg/m^3 at the pavement side, and 15µg/m^3 at first floor height (location of residential properties). A graphic showing the trend at the pavement side automatic monitor is shown below. The annual mean nitrogen dioxide objective of 40µg/m^3 has been highlighted with red line.



6.2 As a result of this sustained decreasing trend, EH has followed SG advice and are currently going through the process of revoking the Inverness AQMA. The Council in exercise of the powers conferred on it by Section 83(2) of the Environment Act 1995 has the power to issue a Revocation Order for the Inverness City Centre AQMA. Both the SG and SEPA have approved the revocation of the Inverness AQMA.

6.3 All relevant stakeholders and relevant parties who have an interest within the AQMA area have been informed of the decision to revoke. EH has received no adverse comments regarding the proposal.

6.4 The official AQMA revocation order is scheduled to come into force on the **1 June 2025** and will be published at that time on the air quality pages on the HC website - Air Quality Pages

6.5 The revocation of the AQMA is considered significant and demonstrates the improvements in air quality that have taken place within the City Centre since 2014. Examples of the most significant improvements are summarised below:-

Provision of the Rose Street Bus Corridor reducing the number of bus routes requiring to travel through the AQMA; The provision of low emission vehicle bus fleet in the city centre.

7 Primary Schools Air Quality Project – Vehicle Idling and Awareness of Air Quality

7.1 Funding provided by the Scottish Government has allowed Environmental Health Officers to carry out air quality monitoring and awareness raising projects at twenty two (22) Highland Council primary schools between March 2022 to March 2025. Fifteen (15) of these schools are located within the Inverness City Committee Area – **Bishop Eden, BSGI, Cauldeen, Central, Cradlehall, Crown, Dalneigh, Drakies, Hilton, Holm, Inshes, Kinmylies, Lochardil, Merkinch, and Muirtown Primary**.

7.2 The schools project for Highland was decided upon by the EH team following several published articles around the risks of poor air quality in the vicinity of schools. Two high profile examples of this are highlighted below:-

An open letter in 2023 from the Royal College of Physicians of Edinburgh recommended that monitoring around city centre schools should be undertaken citing the increased vulnerability of children, especially of primary school age, to pollution and the current lack of knowledge of the exposure to pollution around schools. Short-term exposure to concentrations of NO_2 can cause inflammation of the airways and increase susceptibility to respiratory infections and to allergens. Children are particularly vulnerable because their bodies, organs, and immune systems are still developing. Furthermore, children tend to spend more time outside – including travelling to and from school – so have greater exposure to polluted air.

A survey commissioned by Asthma + Lung UK in 2023 found that 62% of people in Scotland were concerned about pollution near schools.

7.3 The monitoring undertaken at each of the schools was a combination of nitrogen dioxide (NO_2) passive diffusion tube monitoring over three or four months; and indicative live EarthSense Zephyr® Units monitoring multiple parameters over a few weeks at each site. An Officer from the EH team offered each school an in-person presentation and a workshop with second-stage pupils to raise awareness of pollution in our local environment and highlight actions they and their carers can take to help our communities.

7.4 Schools were initially selected based upon a combination of location and discussion with the Council's Safer Routes to School Team to identify schools where concerns regarding excess vehicle numbers and vehicle idling had been raised by parents. Since 2023 the project has focused on schools within the 'Other Urban Area' classification of the Urban-Rual Classifications from the Scottish Government 2020 GIS Dataset. (Highland has no 'Large Urban Areas' by definition)

7.5 It was extremely pleasing to establish that none of the schools included within the project exceeded the Scottish Government Air Quality (Annual Average) objective of 40 $\mu g/m^3$. The data recorded at 98% of locations found NO_2 was less than half the objective criteria, although raw data peaks could be observed to coincide with drop off and pick up times.

7.6 A summary report has been provided to each of the schools with the monitoring results. These reports have been made available to the schools to help further raise awareness of air quality and highlight the importance of not leaving car engines idling for periods of time. An example School Report and pupil engagement is included in **Appendix 1.**

7.7 The project has been well received by the participating schools and had excellent levels of engagement with the teachers and pupils alike. Subject to SG funding, the project will continue in 2025 and additional schools be identified and approached for inclusion.

8 Provision of Local Site Operator (LSO) service to the UK Automatic Urban and Rural Network (AURN)

8.1 The EH Service currently provides LSO support to three AURN sites in Highland including the site on Telford Street that measures Nitrogen dioxide and Fine Particles. This includes 26 routine site visits a year and call out support.

8.2 The site at Telford street is linked into the AURN network – the specific site data and measured pollutant levels can be viewed on the "Air Quality in Scotland" website - Scottish Air Quality.

9 Going Forward

9.1 The Scottish Government recommends that following revocation of an Air Quality Management Area, consideration should be given to providing a local air quality strategy to ensure air pollution remains below objective levels. As set out previously, it is important that the Highlands can continue to have clean air for the health of residents and its reputation as a tourism destination. The Service will look to develop a strategy with other relevant Council services and stakeholders and will report to Members.

9.2 The EH Team will continue to deliver the primary school air quality education project and deliver an anti-idling publicity campaign in the city centre as part of "Clean Air Day" on the 19th June 2025 (subject to SG funding). Clean Air Day is the UKs largest air pollution campaign. A successful event was held last year in Falcon Square as part of CAD campaign 2024 – See **Appendix 2**.

9.3 The EH team will continue to monitor air quality and undertake other air quality statutory duties as required to meet the Councils statutory obligations.

Designation:	Assistant Chief Executive – Place
Date:	5 May 2025
Author:	Gregor MacCormick (Senior Environmental Health Officer)
Background Reports:	None
Appendices:	Appendix 1 – School Project Appendix 2 – Clean Air Day 2024

Appendix 1

Schools Air Quality Project

The following is an example of a summary report that was provided to Inshes Primary School in Inverness.

Inshes Primary School
Air Quality Monitoring 2024/2025

The Highland Council
Comhairle na Gàidhealtachd

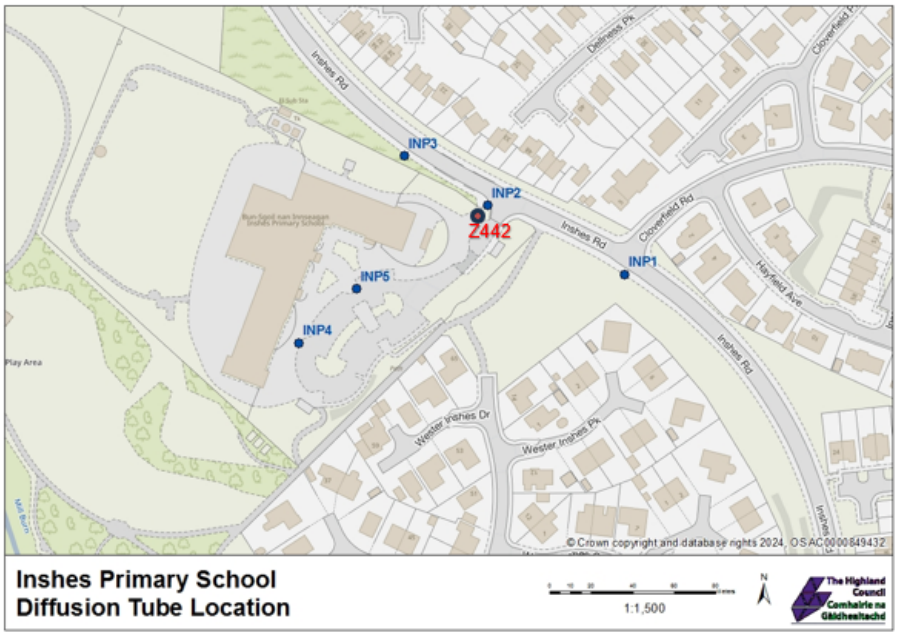
Introduction

The Highland Council carried out an air quality survey in conjunction with Inshes Primary School during 2024-2025.

Passive diffusion tubes were deployed at 5 locations shown in blue in Figure 1 on roads surrounding the school to collect data on nitrogen dioxide concentrations over a four-month period between September to December 2024.

An Earthsense Zephyr unit was deployed at the location shown in red in Figure 1 between 04th September 2024 and 14th November 2024 to collect real-time data on a range of pollutants including nitrogen dioxide and particulates.

Figure 1 – Location of Diffusion Tubes and Zephyr Unit



An Officer from Environmental Health gave a presentation to P6/P7 pupils on 05th September 2024 providing an overview of air pollution, discussing what it is, what causes it, how it impacts us, how we monitor it, and asked pupils to think about how to improve the situation. Officer revised on 07th October 2024 and discussed the Zephyr monitoring results and pupil research and posters.

Results

The results of the passive diffusion tube nitrogen dioxide (NO_2) concentrations in µg/m³ are shown in Table 1 and Figure 2 below, while Figure 3 provides a summary of the Zephyr real-time data for nitrogen dioxide over a selected Monday-Friday period during term time.

Table 1 – Passive Diffusion Tube Data

Location	NO2 Results in µg/m³ September 2024	NO2 Results in µg/m³ October 2024	NO2 Results in µg/m³ November 2024	NO2 Results in µg/m³ December 2024
INP1	7.03	Missing	Missing	5.99
INP2	7.58	5.92	8.10	5.74
INP3	Missing	6.92	9.77	6.69
INP4	5.93	4.65	6.08	4.55
INP5	5.59	5.03	7.43	4.95

Figure 2 – Passive Diffusion Tube Results in µg/m³ by Month

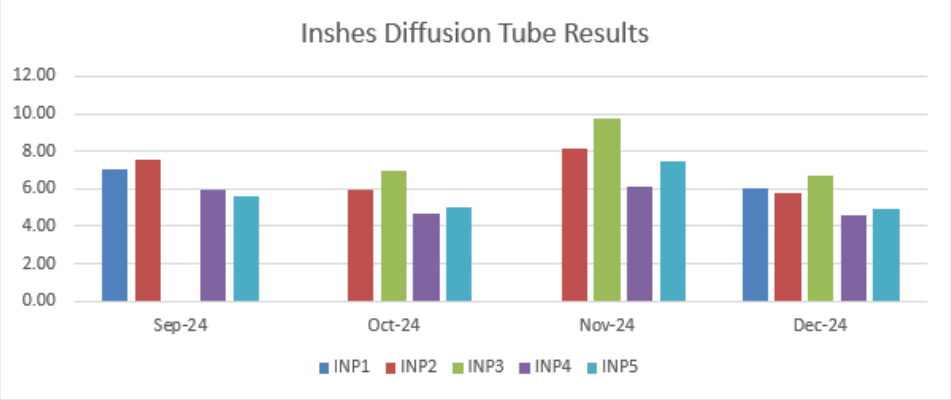
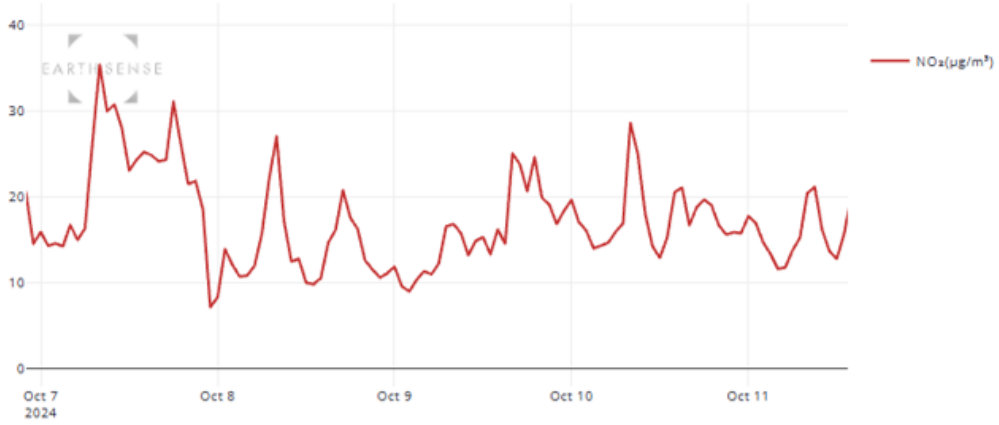


Figure 3 – Nitrogen Dioxide Real-Time Data During a Selected Mon-Fri Term Time



Conclusion

The objectives for nitrogen dioxide are set out in the Air Quality (Scotland) Regulations 2000, with the standard being an annual mean of 40 µg/m^3, with a one hour mean of 200 µg/m^3 not to be exceeded more than 18 times in one year.

The monthly average for Inshes Primary School using the diffusion tube data is 6.35µg/m^3, which is less than a sixth of the annual mean target objective.

The Zephyr data average nitrogen dioxide concentration for all Mon-Fri school days 9am-4pm, excluding holidays is 17.55µg/m^3 which again is well below the annual mean target objective. The one hour mean target objective was not exceeded onsite during the monitoring period.

The study has shown the air quality at Inshes Primary School meets the Scottish Government's standards for nitrogen dioxide.

Limitations

Tube data has been averaged without annual adjustments and Zephyr data due to calibration methodology is indicative rather than absolute.

Image 1 – Example Air Quality Awareness Poster designed by P6 pupil at Inshes Primary in 2024.

Appendix 2

Clean Air Day 2024

Image 1 - Poster highlighting the Clean Air Day 2024, Air Quality Awareness Event at Falcon Square, Inverness organised by the EH team.

Image 2: Photograph of the Air Quality Awareness Event at Falcon Square, Inverness June 2024.