

# Annual Progress Report (APR)

**Aberdeenshire**  
COUNCIL



2023 Air Quality Annual Progress Report (APR) for Aberdeenshire Council

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

Local Air Quality Management

June 2023

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# **Executive Summary: Air Quality in Our Area**

## **Air Quality in Aberdeenshire**

Aberdeenshire Council is located on the north-east coast of Scotland and surrounds the Aberdeen City Council area. The Council area is split into two distinct geographical types: the western part of the Council area is dominated by the Grampian mountain range and includes large areas of forest and moorland. The northern, eastern and southern parts of the Council area are somewhat less mountainous with large expanses of agricultural land, coastal grassland and a greater density of small towns.

The population of the Aberdeenshire Council area is approximately 240,000 with the largest urban populations residing in Peterhead, Fraserburgh, Inverurie, Stonehaven, Westhill and Ellon. A large proportion of the Aberdeenshire population is involved in the off-shore oil and gas industry. A significant proportion of the population are also involved in the traditional industries of farming, forestry and fishing with approximately one third of Scotland's agricultural produce originating in the region. The industrial and commercial areas are primarily located in the east of the Council area around Aberdeen, Stonehaven, Peterhead and Fraserburgh. A large section of the central region of Aberdeenshire is a commuter region for Aberdeen City with a significant proportion of the local population commuting to Aberdeen City on a regular basis.

The Aberdeenshire Council area enjoys good air quality with no exceedances of the national air quality objectives. Consequently, there is no requirement for Aberdeenshire Council to declare any air quality management areas (AQMAs).

## **Actions to Improve Air Quality**

Aberdeenshire Council continues to work with internal and external partners to deliver the objectives of Cleaner Air for Scotland – The Road to a Healthier Future (CAFS).

## **Local Priorities and Challenges**

There are a large number of biomass installations within the Aberdeenshire area, including many in our rural communities in agricultural holdings. Aberdeenshire Council continues to work with the agricultural sector to identify biomass installations and provide advice and

expertise, and to identify these biomass installations ensure the appropriate authorisations are obtained.

As a neighbouring authority to Aberdeen City Council and with the high number of commuting, leisure and other essential journeys between the two authorities, officers from the Council actively engage with officers from the City Council through the participation in meetings and open dialogue. This is with a view to assisting and enabling development of a low emission zone, in line with the objectives of CAFS Aberdeenshire Council will continue to review and assess local air quality in accordance with the statutory monitoring and reporting requirements.

## **How to Get Involved**

For further information on Air Quality in Aberdeenshire, including information on how to obtain previous annual LAQM reports and a link to the Scottish air pollution forecast please visit the air quality section of our website, or follow our social media feeds:

<https://www.aberdeenshire.gov.uk/environment/environmentalprotection/atmospheric-pollution/>

Facebook: @EHAberdeenshire

Twitter: @AbshireEnvHlth

You can also find out more about active travel, sustainable travel and advice on funding available to help you choose a low emission vehicle at

<https://www.aberdeenshire.gov.uk/roads-and-travel/transportation>

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# 1 Local Air Quality Management

This report provides an overview of air quality in Aberdeenshire 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 Aberdeenshire Council to improve air quality and any progress that has been made.

**Table 1.1 – Summary of Air Quality Objectives in Scotland**

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



## 2 Actions to Improve Air Quality

### 2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) 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.

Aberdeenshire Council currently does not have any AQMAs and the available evidence suggests that Aberdeenshire benefits from generally good air quality in terms of those emissions currently considered under the LAQM regime.

### 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 Aberdeenshire Council 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.

Aberdeenshire Council has adopted the Local Development Plan (LDP) 2022. Great care has been taken that the LDP 2022 does not have unavoidable environmental impacts. Protecting and improving assets and resources is one of the six purposes of the LDP 2022. A Strategic Environmental Assessment and the Environment Report conducted by the Council in support of the plan assesses whether there is a potential impact on air quality from each development allocation. In no cases has a site been allocated where a significant adverse impact on air quality was predicted. LDP 2022 contains a specific policy PR1 Protecting Important Resources (see paragraph PR1.2 Air Quality) that identifies that an Air Quality Assessment may be required to demonstrate that any development has no significant adverse impacts on air quality, and that appropriate mitigation to minimise any adverse effects can be provided and implemented. Air quality is also a specific issue identified for both Hazardous and potentially Polluting Developments and Contaminated Land (Policy P4) and Biomass energy generation (within Policy C2 Renewable Energy).

The Aberdeenshire Local Development Plan 2022 is available at

<https://www.aberdeenshire.gov.uk/planning/plans-and-policies/ldp-2023/>

There is also placemaking design guidance which is available here:

<https://online.aberdeenshire.gov.uk/ldpmedia/LDP2021/Appendix8SuccessfulPlacemakingDesignGuidance.pdf>

## **3 Air Quality Monitoring Data and Comparison with Air Quality Objectives**

### **3.1 Summary of Monitoring Undertaken**

#### **3.1.1 Automatic Monitoring Sites**

Aberdeenshire Council does not undertake any automatic (continuous) monitoring within the authority's area.

#### **3.1.2 Non-Automatic Monitoring Sites**

Aberdeenshire Council undertook non- automatic (passive) monitoring of NO<sub>2</sub> at 11 sites during 2022. [Error! Reference source not found.](#) in Appendix A shows the details of the sites.

An interactive map showing the location of Aberdeenshire Council's diffusion tube monitoring network is available at Latest pollution map ([scottishairquality.scot](http://scottishairquality.scot)) by selecting "Aberdeenshire Council" from the Local Authority drop down menu. 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**

Aberdeenshire Council is taking part in an Internet of Things Trial Project examining the value of using low cost air quality sensors at locations across the local authority area. At the time of writing, all 15 trial sensors have been installed and are undergoing data quality checks. Further details on our experience of using these sensors will be provided in the next Annual Report in 2024.

### **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 (NO<sub>2</sub>)**

For diffusion tubes, the full 2022 dataset of monthly mean values is provided in Appendix B.

### **3.2.2 Particulate Matter (PM<sub>10</sub>)**

Aberdeenshire Council does not carry out any monitoring in respect of PM<sub>10</sub> and has no plans to do so.

### **3.2.3 Particulate Matter (PM<sub>2.5</sub>)**

Aberdeenshire Council does not carry out any monitoring in respect of PM<sub>2.5</sub> and has no plans to do so.

### **3.2.4 Sulphur Dioxide (SO<sub>2</sub>)**

Aberdeenshire Council does not carry out any monitoring in respect of SO<sub>2</sub> and has no plans to do so.

### **3.2.5 Carbon Monoxide, Lead and 1,3-Butadiene**

Aberdeenshire Council does not carry out any monitoring of Carbon Monoxide, Lead, and 1,3-Butadiene and has no plans to do so.

## **4 New Local Developments**

### **4.1 Road Traffic Sources**

Aberdeenshire Council confirms there are no newly identified air pollutant sources attributable to the transport sources listed below:

- Narrow congested streets with residential properties close to the kerb
- Busy streets where people may spend one hour or more close to traffic
- Roads with a high flow of buses and/or HGVs
- Junctions
- New roads constructed or proposed
- Roads with significantly changed traffic flows
- Bus or coach stations

### **4.2 Other Transport Sources**

Aberdeenshire Council confirms that the following transport sources within the local authority boundary do not meet the criteria specified in the Local Air Quality Management, Technical Guidance (TG16) that would trigger the requirement for a more detailed assessment:

- Airports.
- Locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.
- Locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m.
- Ports for shipping.

### **4.3 Industrial Sources**

Industrial sources which an Air Quality Impact Assessment has been carried out include the following:

Erection of Low Carbon Electricity Generating Comprising a High Efficiency Combined Cycle Gas Turbine (CCGT) Unit, Carbon Capture Plant, Works to Existing Cooling Water, Natural Gas and Electrical Grid Connections, Other Ancillary and Associated Works at Land at Peterhead Power Station Boddam Aberdeenshire.

### **4.4 Commercial and Domestic Sources**

There were 9 new or proposed biomass installations and 1 CHP installation identified in 2022 through the planning system. Where sufficient information is available, screening assessments and/or dispersion modelling has been carried out. Work also continues to map those installations that are known, across Aberdeenshire with a view to identifying the spatial distribution of these installations and thus any areas which may require additional assessment in terms of cumulative impacts.

Although there are a vast number of biomass installations throughout Aberdeenshire, most of these relate to on-farm biomass (for agricultural purposes) where there is generally low population density.

### **4.5 New Developments with Fugitive or Uncontrolled Sources**

There are various quarrying, extraction, landfill and waste management sites located throughout Aberdeenshire which have the potential to give rise to fugitive dust emissions. Where it has been appropriate and possible to do so, conditions have been placed on planning consents relating to such sites in order to minimise the dust emissions from these sites. Additionally, some such sites are regulated by SEPA in regard to emissions to air.

## **5 Planning Applications**

Planning applications relating to new biomass and CHP installations and new quarrying or extraction operations are discussed in Chapter 4. There were no other planning applications where significant effects on air quality were identified.

## **6 Conclusions and Proposed Actions**

### **6.1 Conclusions from New Monitoring Data**

Aberdeenshire Council carried out diffusion tube monitoring at 11 sites across the local authority area. The diffusion tube monitoring data presented in this report demonstrates that concentrations of NO<sub>2</sub> in Aberdeenshire continue to remain below the national air quality objectives; indeed, (although an uptick in concentrations has been observed following the removal of lock down restrictions in 2020-2022), the general historic trend in NO<sub>2</sub> concentrations across the sites continues to be downward.

No AQMAs have been declared in the Aberdeenshire Council area and no requirement for detailed assessment has been identified.

### **6.2 Conclusions relating to New Local Developments**

#### Transport Sources

There are no significant changes in transport sources since the previous Annual Report in 2021. There are no current or projected exceedances of relevant national air quality objectives.

#### Industrial Sources

No industrial sources have been identified that are likely to have significant impact on national air quality objectives.

#### Commercial and Domestic Sources

A large number of new biomass installations have been identified. Additional information is required to complete screening assessments for some of these new biomass installations. Work is ongoing to map the location of all known biomass plant in Aberdeenshire such that cumulative impacts can be better considered.

#### Fugitive or Uncontrolled Sources

Potential fugitive or uncontrolled sources of emissions are unlikely to be significant in respect of the national air quality objectives.



## **6.3 Proposed Actions**

### Diffusion Tube Monitoring

No action. All diffusion tube monitoring sites will be reviewed again once the 2023 monitoring calendar is complete and bias adjusted data is available.

### Commercial and Domestic Sources

Information will be sought in respect of biomass installations where sufficient information has not yet been provided. Screening assessments will be completed in due course following receipt of the required information.

Work on mapping all known biomass installations in Aberdeenshire will continue. An update on biomass installations in Aberdeenshire will be provided in the next Annual Report in 2024.

### Other Monitoring Data

Aberdeenshire Council is taking part in an Internet of Things Trial Project examining the value of using low-cost air quality sensors at locations across the local authority area. At the time of writing, all 15 trial sensors have been installed and are undergoing data quality checks. Further details on our experience of using these sensors will be provided in the next Annual Report in 2024.

## Appendix A: Monitoring Results

**Table A.1 – Details of Automatic Monitoring Sites**

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>
I/HS	Inverurie 1	Roadside	377408	821583	NO <sub>2</sub>	1.8	1.5
I/GH	Inverurie 2	Background	376622	821476	NO <sub>2</sub>	46.0	53.0
I/MC	Inverurie MC	Roadside	377624	821295	NO <sub>2</sub>	0.0	1.5
I/BR	Inverurie BR	Roadside	376382	821574	NO <sub>2</sub>	2.0	2.0
I/TH	Inverurie TH	Roadside	377512	821584	NO <sub>2</sub>	4.0	2.0
W/AM	Westhill AM	Roadside	383526	806645	NO <sub>2</sub>	149.0	3.0
W/SR	Westhill 2	Roadside	381837	806691	NO <sub>2</sub>	10.0	2.4
E/SM	Ellon SM	Kerbside	395750	830115	NO <sub>2</sub>	4.7	0.5
PH/BH	Peterhead BH	Roadside	413379	845906	NO <sub>2</sub>	10.0	2.0
PH/MS	Peterhead MS	Kerbside	413420	845918	NO <sub>2</sub>	0.0	0.8
FB/SS	Fraserburgh SS	Roadside	399870	867168	NO <sub>2</sub>	0.3	3.0

**Notes:**

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

(2) N/A if not applicable

## Appendix B: Full Monthly Diffusion Tube Results for 2022

Table B.1 – NO<sub>2</sub> 2022 Monthly Diffusion Tube Results (µg/m<sup>3</sup>)

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Bias Adjusted <sup>(1)</sup>
I/HS	33	25	24	21	17	17	13.5	19	19	24	52	38	25.2	19.2
I/GH	12	6	10	6	4	4	2.4	5	5	7	13	11	7.1	5.4
I/MC	27	17	25	24	14	13	12.1	16	17	19	27	29	20.0	15.2
I/BR	26	15	21	15	10	10	8.3	12	13	15	19	23	15.6	11.9
I/TH	27	15	26	<5	26	14	10.4	15	14	18	23	26	17.9	13.6
W/AM	26	13	24	17	14	12	10.7	16	16	18	26	23	18.0	13.7
W/SR	21	8	16	15	8	7	6.9	10	11	10	16	18	12.2	9.3
E/SM	None	13	23	17	13	14	11.8	17	16	18	21	11	14.6	11.1
PH/BH	32	21	16	21	18	19	16.7	24	20	27	34	14	21.9	16.6
PH/MS	29	23	19	15	17	17	13.1	19	18	26	31	9	19.7	15.0

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Bias Adjusted <sup>(1)</sup>
FB/SS	17	15	24	21	16	17	13.7	19	16	20	24	12	17.9	13.6

**Notes:**

(1) See Appendix C for details on bias adjustment

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

## Additional Air Quality Works Undertaken by Aberdeenshire Council During 2022

Aberdeenshire Council has not completed any additional works within the reporting year of 2022.

### QA/QC of Diffusion Tube Monitoring

Aberdeenshire Council diffusion tubes are analysed by Aberdeen Scientific Services within Aberdeen City Council.

The National Diffusion Tube Bias Adjustment Spreadsheet, version 03/23 presents Tube Precision for Aberdeen Scientific Services as **GOOD**.

(performance statistics available at [WASP – Annual Performance Criteria for NO<sub>2</sub> Diffusion Tubes \(defra.gov.uk\)](https://www.defra.gov.uk/wasp/annual-performance-criteria-for-no2-diffusion-tubes))

### Diffusion Tube Annualisation

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

### Diffusion Tube Bias Adjustment Factors

Aberdeenshire Council have applied a national bias adjustment factor of 0.76 to the 2022 monitoring data. A summary of bias adjustment factors used by Aberdeenshire Council over the past five years is presented in Table C.1.

**Table C.1 – Bias Adjustment Factor**

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2022	National	03/23	0.76

2021	National	06/22	0.77
2020	National	03/21	0.77
2019	National	03/20	0.81
2018	National	03/19	0.81

### **NO<sub>2</sub> Fall-off with Distance from the Road**

No diffusion tube NO<sub>2</sub> monitoring locations within Aberdeenshire Council required distance correction during 2022.

## Appendix D Diffusion Tube Trends

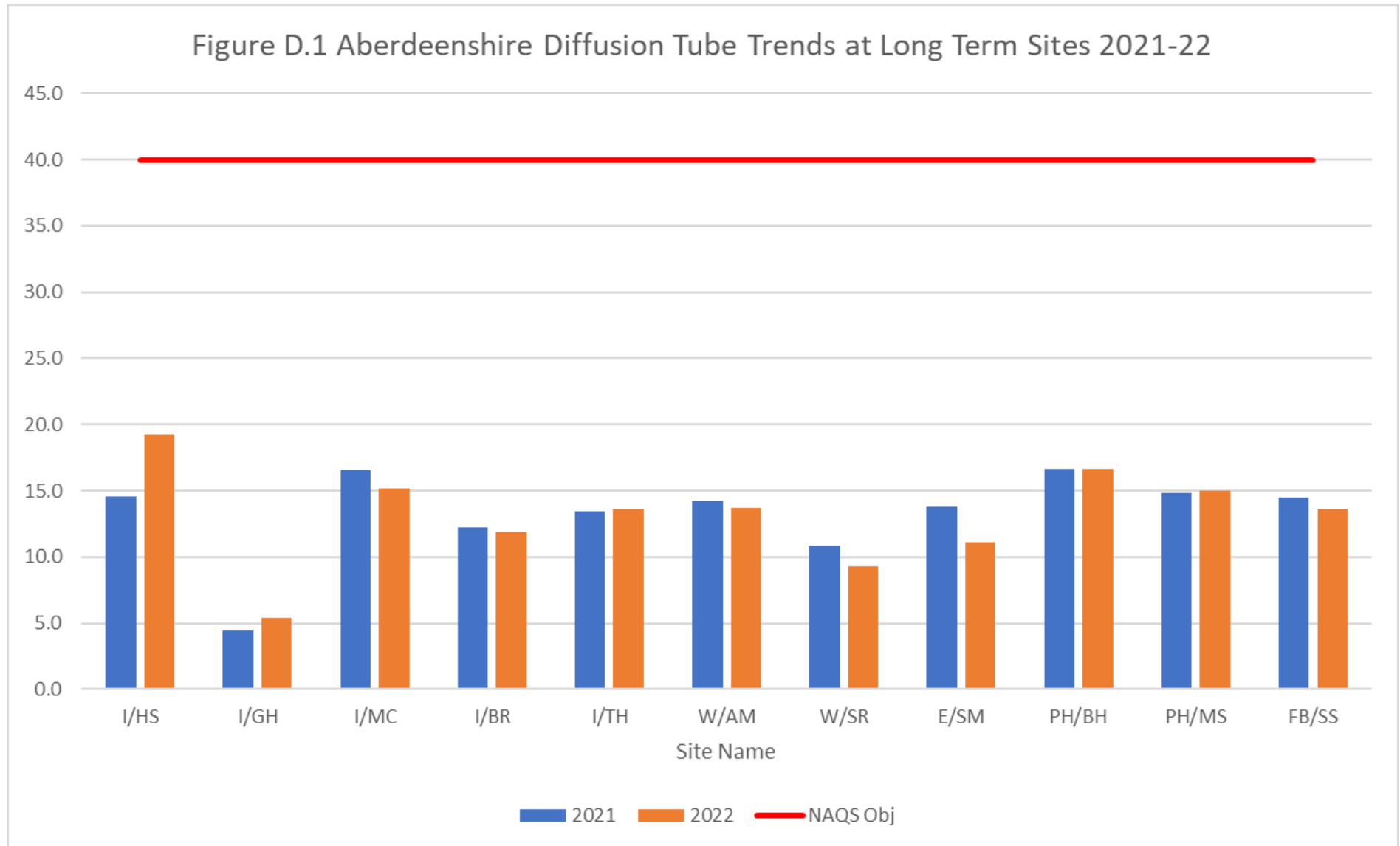
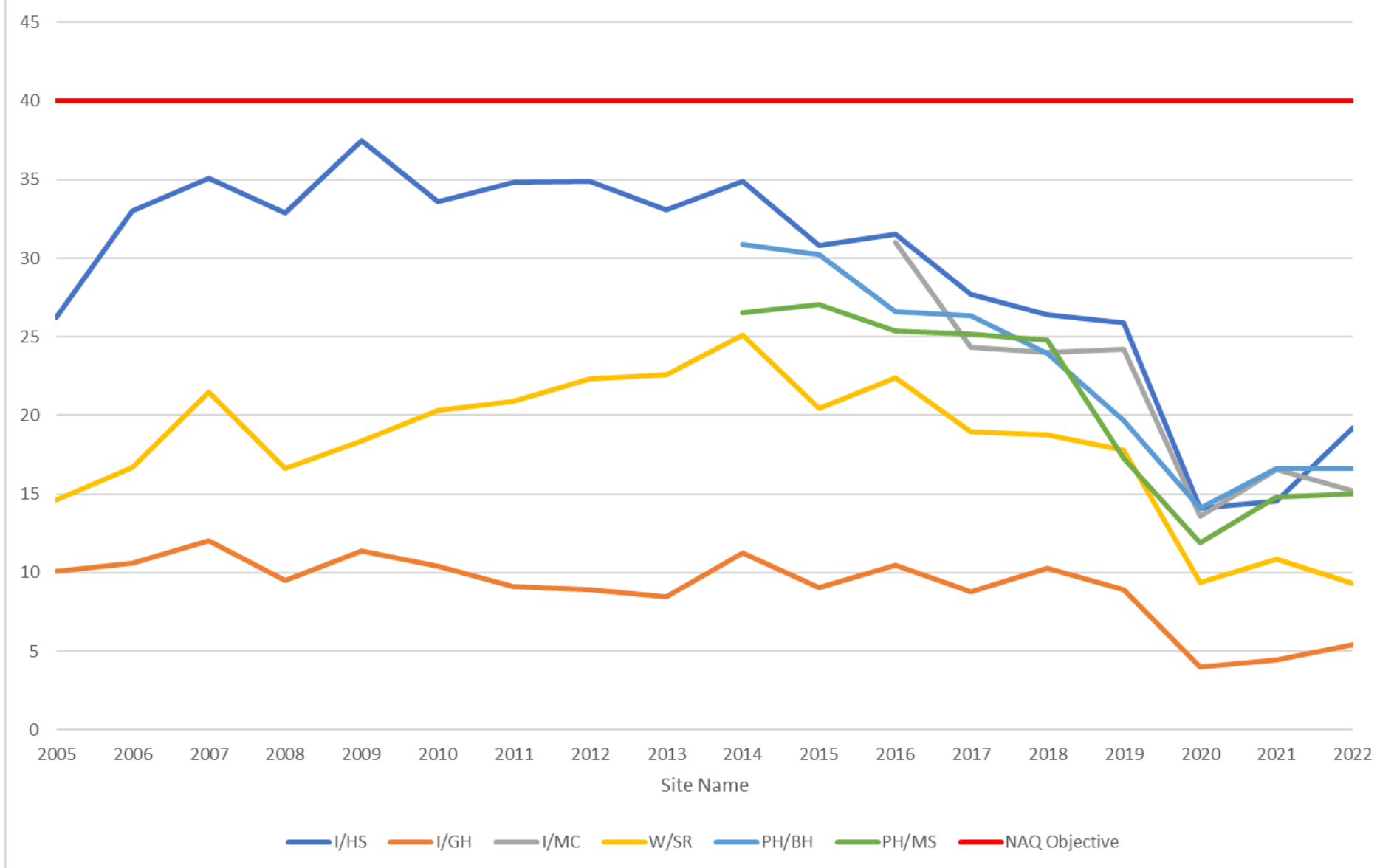


Figure D.2 Aberdeenshire Diffusion Tube Trends at Long Term Sites 2005 - 2022





## Glossary of Terms

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