

SERVICE UPDATE

<u>Name of Function:</u>	Protective Services
<u>Date:</u>	February 2023
<u>Title of Update:</u>	Air Quality Progress
<u>Report Author:</u>	Ann Marie Rankin
<u>Chief Officer:</u>	Mark Reilly
<u>Contact Details:</u>	AMRankin@aberdeencity.gov.uk

UPDATE:

Purpose:

To update committee members on the annual air quality monitoring results for 2021.

1. Summary of Annual Air Quality Monitoring Result in 2021

- 1.1 The Air Quality Progress Report 2022 was published in June and is available on the council website at:

<https://www.aberdeencity.gov.uk/services/environment/air-quality-aberdeen/air-quality-reports>

- 1.2 The Environment Act 1995 places a statutory duty on local authorities to review and assess air quality against national objectives for 7 pollutants that have an adverse effect on health.
- 1.3 The Scottish Government has stipulated authorities must submit an annual progress report for approval by the Scottish Government and the Scottish Environmental Protection Agency (SEPA). The Scottish Government approved the 2022 report on 8 August 2022.
- 1.4 The main pollutants of concern in Aberdeen City are nitrogen dioxide (NO₂) and particulate matter (PM₁₀), related to road traffic emissions. These pollutants have a significant public health impact, particularly the young, elderly and those with pre-existing medical conditions. In 2018, Health Protection Scotland estimated that approximately 1700 attributable (premature) deaths in Scotland annually can be attributed to air pollution.¹

1.5 Table 1 details the air quality objectives for the purposes of Local Air Quality Management.

Table 1: Air Quality objectives

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Nitrogen dioxide	200 µg/m ³ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 µg/m ³	Annual mean	31.12.2005
Particulate Matter (PM ₁₀) (gravimetric)	50 µg/m ³ , not to be exceeded more than 7 times a year	24-hour mean	31.12.2011
	18 µg/m ³	Annual mean	31.12.2011

2. Nitrogen Dioxide Monitoring Results

2.1 Table 2 shows the annual mean NO₂ concentrations over the period 2017-2021 at Aberdeen's six continuous monitoring sites. Erroll Park replaced a site previously sited on Erroll Place, which had to be relocated due to the demolition of a housing development on the street; hence why data is only available from 2021. There is also a network of diffusion tubes recording NO₂ concentrations at 55 sites across the city.

2.2 The NO₂ automatic monitoring data collected at all sites in 2021 increased slightly on 2020 levels. This was to be expected following a relaxation of Covid-19 restrictions in relation to the twelve months previous. There has not been a return to pre-pandemic concentrations, however the national lockdown between January-April 2021 has been taken into consideration here. Concentrations at all automatic sites continued to be below the annual mean air quality objective of 40 µg/m³.

2.3 However, one diffusion tube located on Market Street suggest an exceedance of the objective at this location within the city centre Air Quality Management Area (AQMA) continues. This is comparable to 2020.

- 2.4 Within the Wellington Road AQMA the annual mean levels recorded at the Wellington Road automatic site and the 2 diffusion tube locations continued to be below the annual mean objective.
- 2.5 There were no exceedances of the annual mean objective recorded in the Anderson Drive AQMA. Diffusion tubes DT39 and DT41, situated on the Haudagain Roundabout, both saw a decrease on 2020 levels. Both previously recorded levels exceeding the objective – last in 2018 – but have continued to decrease since the opening of the Aberdeen Western Peripheral Route (AWPR), which may have contributed to the improvement.
- 2.6 There were no exceedances of the hourly mean objective at any automatic or diffusion tube sites in 2021.
- 2.7 Nitrogen dioxide levels at monitoring locations outside the AQMAs remain well below the annual mean objective. Diffusion tubes installed in 2016 following the opening of the Diamond Bridge were removed in 2021, as concentrations of NO₂ were consistently low across these sites. Data for tubes located in the Rosemount area – specifically Rosemount Place, where physical distancing measures were only removed in September 2021 – noted significant decreases on pre-pandemic levels, potentially due to the changes in traffic flows in the area.

Table 2: Annual mean NO₂ concentrations at continuous monitoring sites

Site	Annual mean NO ₂ concentration (µg/m ³)				
	2017	2018	2019	2020	2021
Errol Park	N/A	N/A	N/A	N/A	21
Union St	43	40	38	24	25
Market St	35	31	33	22	27
Anderson Dr	21	19	17	12	13
Wellington Rd	46	39	39	25	28
King St	28	23	22	16	17
Objective Value	40	40	40	40	40

3. Particulate Monitoring Results

- 3.1 There were no exceedances of the annual mean or 24 hour mean objective at any of the continuous monitoring sites in 2021. The

24 hour mean objective has been met at all monitoring sites for the last 5 years.

- 3.2 Table 3 shows the annual mean PM₁₀ concentrations over the period 2017-2021.

Table 3: Annual mean PM₁₀ concentrations at continuous monitoring sites

Site	Annual mean concentration (µg/m ³)				
	2017	2018	2019	2020	2021
Erroll Park	N/A	N/A	N/A	N/A	9.5
Union St	13	15	12	10	11
Market St	11	17	13	10	11
Anderson Dr	12	14	13	9	9
Wellington Rd	13	17	14	14	12
King St	12	14	14	11	12
Objective Value	18	18	18	18	18

- 3.3 There are 6 continuous monitoring sites measuring PM₁₀ levels in Aberdeen City. As before with NO₂, data for Erroll Park is only available from 2021.
- 3.4 No exceedances of the annual mean were recorded at any of the continuous monitoring sites.

4. Conclusions

- 4.1 The 3 AQMAs in the City remain valid for NO₂ and PM₁₀ annual means to ensure sustained compliance with the air quality objectives.
- 4.2 New monitoring data has not identified a need for any other changes to the existing AQMAs

References

1. Air Quality in Scotland, The Scottish Government, 2021.