

## Air Quality Report 2018

Bristol Airport monitors air quality 24 hours a day from a dedicated onsite air quality station.

The main airport sources come from vehicle traffic (staff and passenger journeys and airport operational vehicles), aircraft engines (during taxiing, take-off and landing), energy generation (diesel generators and gas boilers), fugitive emissions (evaporation - during fuelling of aircraft and vehicles) and other activities such as fire training.

### Reporting Objectives

This report considers air quality at Bristol Airport during 2018, comparing recorded concentrations with the UK's Air Quality Strategy and against the commitments contained within Bristol Airport's S106 Agreement with North Somerset Council. The National Air Quality Strategy (NAQS) forms the legislative basis for air quality in the UK, stipulating long and short-term objectives to ensure air quality does not result in health issues.

### Monitoring Methodology

Monitoring of air quality is undertaken continuously, with real time monitors recording levels of both NO<sub>2</sub> and PM<sub>10</sub> at the airport site. Additionally, passive diffusion tubes are deployed to monitor average monthly NO<sub>2</sub> concentrations at nine locations across the airport site, including the location of the continuous air quality monitor.

#### National Air Quality Strategy Objectives

Pollutant	Annual objective (mean limit)	Short term objective. (max events per annum)
NO <sub>2</sub>	40 µg/m <sup>3</sup>	18 hourly means > 200 µg/m <sup>3</sup>
PM <sub>10</sub>	40 µg/m <sup>3</sup>	35 daily means > 50 µg/m <sup>3</sup>

#### Section 106 Agreement

- Highlight air quality monitoring locations where monitored levels exceed 90% of the National Air Quality Strategy limit
- Report significant deterioration in air quality, defined as an increase in average annual concentration of more than 15% compared to the average levels recorded between 2008 – 2012 (NO<sub>2</sub>) or particulate levels exceeding 50 µg/m<sup>3</sup> in more than 15 days in a calendar year (PM<sub>10</sub>)



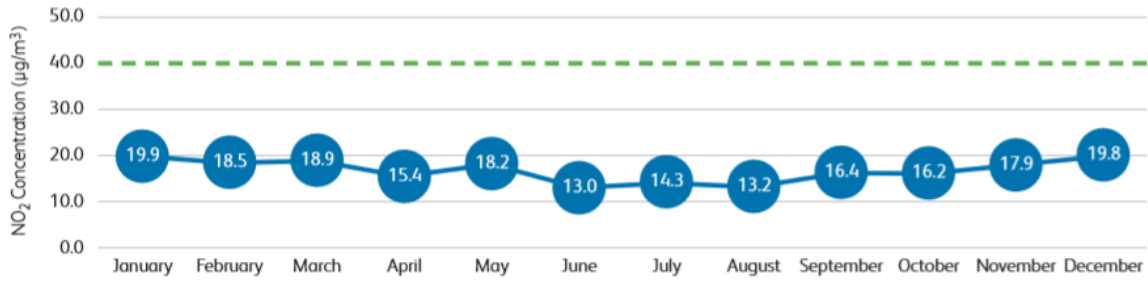
### Monitoring Results

Ambient concentrations of NO<sub>2</sub> and PM<sub>10</sub> recorded by real time monitoring are shown in Table 1 with analysis against NAQS and S106 objectives.

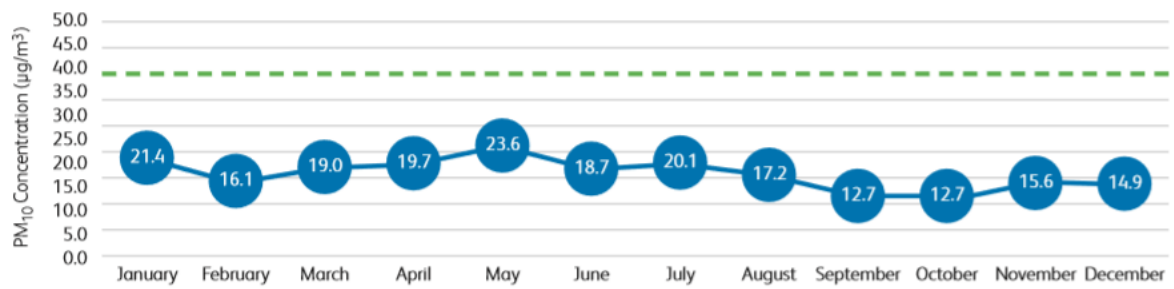
**Table 1:** Analysis of continuous monitoring data against NAQS and S106 requirements

	Recorded Annual Mean (µg/m <sup>3</sup> )	NO <sub>2</sub> - Hourly Means > 200µg/m <sup>3</sup> PM <sub>10</sub> - Daily Means > 50µg/m <sup>3</sup>	NAQS Compliant	Annual Mean <90% NAQS Objective
NO <sub>2</sub>	20	0	Yes	Yes
PM <sub>10</sub>	19	1	Yes	Yes

Monthly ambient concentrations recorded by real time monitoring are detailed in Figure 1.



**Figure 1:** Average monthly NO<sub>2</sub> concentrations recorded by real time monitors



**Figure 2:** Average monthly PM<sub>10</sub> concentrations recorded by real time monitors

NO<sub>2</sub> levels recorded by diffusion tube monitoring are shown in Table 2 with analysis against NAQS and S106 objectives.

**Table 2 :** Analysis of NO<sub>2</sub> diffusion tube results against NAQS and S106 requirements

Monitoring Location	5yr Baseline (µg/m <sup>3</sup> )	Recorded Annual Mean (µg/m <sup>3</sup> )	NAQS Compliant	Annual Mean <90% NAQS Objective	Significant Deterioration
1	34	35	Yes	Yes	No
2	39	35	Yes	Yes	No
3	16	11	Yes	Yes	No
4	15	16	Yes	Yes	No
5	38	34	Yes	Yes	No
6	21	22	Yes	Yes	No
7	25	24	Yes	Yes	No
8	50	38	Yes	Yes	No
9	22	24	Yes	Yes	No