London Borough of Haringey
Annual Air Quality Status Report 2021

This report provides a detailed overview of air quality in London Borough of Haringey during 2021. It has been produced to meet the requirements of the London Local Air Quality Management (LLAQM) statutory process[1].

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Date of publication – May 2022

[1] LLAQM Policy and Technical Guidance 2019 (LLAQM.TG(19))

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Abbreviations

Abbreviation	Description
AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
AQO	Air Quality Objective
BEB	Buildings Emission Benchmark
CAB	Cleaner Air Borough
EV	Electric Vehicle
GLA	Greater London Authority
LAEI	London Atmospheric Emissions Inventory
LAQM	Local Air Quality Management
LLAQM	London Local Air Quality Management
NRMM	Non-Road Mobile Machinery
PM_{10}	Particulate matter less than 10 micron in diameter
$PM_{2.5}$	Particulate matter less than 2.5 micron in diameter
TEB	Transport Emissions Benchmark
TfL	Transport for London

Table A. Summary of National Air Quality Standards and Objectives

Pollutant	Standard / Objective (UK)	Averaging Period	Date (1)
Nitrogen dioxide (NO_2)	200 µg m^{-3} not to be exceeded more than 18 times a year	1-hour mean	31 Dec 2005
Nitrogen dioxide (NO_2)	40 µg m^{-3}	Annual mean	31 Dec 2005
Particles (PM_{10})	50 µg m^{-3} not to be exceeded more than 35 times a year	24-hour mean	31 Dec 2004
Particles (PM_{10})	40 µg m^{-3}	Annual mean	31 Dec 2004
Particles ($PM_{2.5}$)	25 µg m^{-3}	Annual mean	2021
Particles ($PM_{2.5}$)	Target of 15% reduction in concentration at urban background locations	3-year mean	Between 2010 and 2021
Sulphur dioxide (SO_2)	266 µg m^{-3} not to be exceeded more than 35 times a year	15-minute mean	31 Dec 2005
Sulphur dioxide (SO_2)	350 µg m^{-3} not to be exceeded more than 24 times a year	1-hour mean	31 Dec 2004
Sulphur dioxide (SO_2)	125 µg m^{-3} not to be exceeded more than 3 times a year	24-hour mean	31 Dec 2004
Ozone	100 µg m-3 not to be exceeded more than 10 times a year	8-hour mean	31 Dec 2005

Notes:

(1) Date by which to be achieved by and maintained thereafter

1. Air Quality Monitoring

Haringey now operates three automatic monitoring stations (Table B), which are all representative of public exposure.

For Haringey roadside, the nearest relevant exposures are residential properties located less than 4m from the kerb; the sample inlet is in line with the building façades, demonstrating relevant exposure. This site is located on High Road, Tottenham and is classified as a Roadside site. Monitoring at this location has been undertaken since December 1994.

The Haringey South site is located in a local park and is classified as an urban background site. Whilst this location is not defined as a sensitive receptor, it is representative of relevant exposure, being a background site within the Greater London area with monitoring at the location started in November 2012. In 2013, the monitoring equipment was relocated to its current location within the park from another area within the park for safety reasons.

The third automatic monitoring station (Wood Green Monitoring Station) is locally managed by the council and is classified as a Roadside site. Monitoring at this location commenced in May 2021.

1.1 Locations

Table B. Details of Automatic Monitoring Sites for 2021

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA? If so, which AQMA?	Distance to Relevant Exposure (m)	Distance to Kerb of Nearest Road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Monitoring technique
UK-AIR ID: UKA00260 **EU Site ID:** GB0637A	Haringey Roadside (639, High Road)	533894	190707	Roadside	Yes	3m – residential	4m	4m	NO_2,	APNA-370

UK-AIR ID: UKA00568**U** **Site ID:** GB1024A	Haringey South (Priory Park)	529987	188917	Urban Background	Yes	None	N/A	3.5m	NO_2, Ozone	APNA-370; Chemiluminescent
Site ID: HG005	Haringey Wood Green, (14 High Rd Hornsey, London N22 6HH)	531255	189961	Roadside	Yes	2m	1m	2m	NO_2, PM10, PM2.5	APNA-370; APDA-372

The Council has been monitoring for nitrogen dioxide by diffusion tube throughout the borough since 2004. Towards the end of 2010, six of the existing monitoring location sites were closed and nine new locations were opened. These nine new locations were chosen as a result of the latest air quality modelling that was carried out in 2009 by Bureau Veritas on behalf of the North London Cluster Group. The modelling identified hotspot locations where the hourly NO_2 objective may be at risk of being exceeded and where there is relevant exposure.

In March 2021, nineteen additional monitoring locations HR39 – HR57 were added to the existing sixteen monitoring locations as part of the council effort to implements its action on the measures submitted in the approved AQAP.

Table C below gives individual site details, locations for the 2021 monitoring round. There were thirty-five diffusion tubes monitoring locations throughout the borough in 2021. All diffusion tube sites are indicative of relevant exposure from roadside and background sites. The diffusion tubes are located at building facades of residential properties and schools or adjacent to hotspot locations where possible.

Three of the diffusion tubes sites have been at their location long-term (>10 years); these are a mixture of roadside and background sites and thus provide good long-term trends. Diffusion tube HR14; a triplicate site from July 2020 is co-located with Haringey Roadside automatic monitoring site and the data is fed into the National Diffusion Tube Co-location study. In 2018, monitoring at locations HR20 and HR28 stopped and monitoring at locations HR36 and HR37 began as detailed in the following table: In 2019, two additional monitoring locations in HR21 and HR38 began whilst HR28 also re-commenced.

Location	Number (see Table C)	Description/Comments
• **Schools**	5	All school diffusion tube monitoring sites are located within 150m of a main road carrying >10,000 vehicles per day. Existing: <u>Diffusion tubes added:</u> 2017: HR34 and HR35. 2018: HR36. 2019: HR21, HR38 whilst HR28 re-commenced. 2021: HR39, HR43, HR44, HR45, HR46, HR48, HR50, HR55, HR56 and HR57. <u>Diffusion tube stopped:</u> 2018: HR28

Location	Number (see Table C)	Description/Comments
• **Main road**	5	Diffusion tube added: 2018: Monitor HR37; 2020: HR14b and HR14c; 2021: HR40, HR41, HR42, HR47, HR49, HR51, HR52, HR53 and HR54.
• **GP Surgeries**	2	These are located outside GP surgeries i.e., HR24 and HR27.
• **Urban background**	1	HR08 was classified as an urban background site, however the adjacent site has been undergoing redevelopment to mixed use, residential and commercial. Therefore, consideration is still being given to relocation.

Table C. Details of Non-Automatic Monitoring Sites for 2021

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA? If so, which AQMA?	Distance to Relevant Exposure (m)	Distance to Kerb of Nearest Road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor. (Y/N)
HR06	200A, Archway Road, N6 5BA	528945	187682	Roadside	Y	<0.5m	1.5m	2.5m	NO_2	N
HR08	7 Cross Lane, N8 7QG	530512	189446	Urban Background	Y	2m	0m	2.5m	NO_2	N
HR14a	639 High Road, N17	533890	190710	Roadside	Y	3m	4m	3.5m	NO_2	Y
HR14b [d]	639 High Road, N17	533890	190710	Roadside	Y	3m	4m	3.5m	NO_2	Y
HR14c [d]	639 High Road, N17	533890	190710	Roadside	Y	3m	4m	3.5m	NO_2	Y
HR21 [c]	Lordship Lane Primary School, N22 5PS	532010	190549	Roadside	Y	0m - located in school playground	N/A	1.5m	NO_2	N
HR24	Westbury Medical Centre, 205 Westbury Av., N22 6RX	532155	190517	Roadside	Y	0m – located on building facade	9m	2.0m	NO_2	N
HR25	Rowland Hill Nursery, White Hart Lane	532554	191383	Roadside	Y	0m – located in school playground	7m	1.5m	NO_2	N
HR27	The Old Surgery, 572 Green Lanes, N8 0RP	531758	188872	Roadside	Y	0m – located on building facade	4.5m	2.5m	NO_2	N
HR28 [C]	Bounds Green Primary School, N11 2QG	530063	191324	Roadside	Y	7.5m	2m	2.5m	NO_2	N
HR30	Earlsmead Primary School, N17	533899	189023	Roadside	Y	0m – located within school site.	<0.5m	2.5m	NO_2	N

HR31	97/101 High Road, N22 6BB	531245	189935	Roadside	Y	3m	<0.5m	2..0m	NO_2	N
HR32	271 Archway Road, N6 5AA	528612	188072	Roadside	Y	<1m	<0.5m	2.0m	NO_2	N
HR34 [a]	Coleridge Primary school	531079	187926	Roadside	Y	0m – located within school site.	<0.5m	2.5m	NO_2	N
HR35 [a]	Chestnuts Primary School	532324	188766	Roadside	Y	0m – located within school site.	<0.5m	2.5m	NO_2	N
HR36 [b]	Holy Trinity CE School, Tottenham	533842	189581	Roadside	Y	0m - On Large Gate Outside Playground Area Somerset Rd, London N17 9EJ	2m	2.0m	NO_2	N
HR37 [b]	Weston Park/Broadway, 48 The Broadway, N8 9TP	530123	188420	Roadside	Y	0m - Outside Gail's Bakery 48 The Broadway, London N8 9TP	2m	2.0m	NO_2	N
HR38 [C]	Welbourne Primary School N15	533991	189460	Roadside	Y	0m – Located on the school fence	2m	2.5m	NO_2	N
HR39 [e]	Fortismere School, N10 1NE	528180	189842	Roadside	Y	2m	1m	2.0m	NO_2	N
HR40 [e]	Opposite Highgate Private Hospital, 17 – 19 View Road, Highgate. N6 4DJ	527884	188089	Roadside	Y	5m	<0.5m	2.5m	NO_2	N
HR41 [e]	258 Muswell Hill Broadway, N10 3SH	528797	189636	Roadside	Y	1m	1m	2.5m	NO_2	N
HR42 [e]	15 Stanhope Road, N6 5NE	529254	188051	Roadside	Y	1m	1m	2.5m	NO_2	N
HR43 [e]	St Aidan's VC Primary School, N4 4RR	531018	188018	Roadside	Y	2m	<0.5m	2.0m	NO_2	N
HR44 [e]	North Harringay Primary School, N8 0NU	531303	189128	Roadside	Y	5m	1m	2.0m	NO_2	N

HR45 [e]	Tiverton Primary School, Pulford Road. N15 6SP	532866	188246	Roadside	Y	5m	1m	2.0m	NO_2	N
HR46 [e]	St John Vianney Roman Catholic Primary School, N15 3HB	531882	189187	Roadside	Y	5m	1m	2.0m	NO_2	N
HR47 [e]	134 West Green Rd, N15 5AD	533117	189142	Roadside	Y	3m	1m	2.5m	NO_2	N
HR48 [e]	Mulberry Primary School, N17 9RB	534022	190341	Roadside	Y	2m	<0.5m	2.0m	NO_2	N
HR49 [e]	151 Mount Pleasant Road, N17 6TQ	533199	190058	Roadside	Y	1m	1m	2.5m	NO_2	N
HR50 [e]	Belmont Junior School, Rusper Road, N22 6RA	532063	189889	Roadside	Y	2m	1m	2.0m	NO_2	N
HR51 [e]	76 Coburg Road, N22 6UB	530691	189963	Roadside	Y	5m	1m	2.5m	NO_2	N
HR52 [e]	263 Victoria Road, N22 7XH	529423	190621	Roadside	Y	3m	1m	2.5m	NO_2	N
HR53 [e]	56 Partridge Way, N22 8DW	530497	190904	Roadside	Y	5m	2m	2.5m	NO_2	N
HR54 [e]	Woodside High Road/ White Hart Lane, N22 5QJ	531617	191114	Roadside	Y	5m	1m	2.5m	NO_2	N
HR55 [e]	Risley Ave. Primary, London N17 7AB	533257	190739	Roadside	Y	5m	<0.5m	2.0m	NO_2	N
HR56 [e]	Dukes Aldridge Academy, Almond Road, N17 0PG	534205	191270	Roadside	Y	5m	<0.5m	2.0m	NO_2	N
HR57 [e]	Campsbourne School Nightingale Lane, N8 7AF	530186	189628	Roadside	Y	1m	1m	2.0m	NO_2	N

[a] monitoring started in 2017, [b] added in 2018, [c] added in 2019, [d] added in 2020 and [e] added in 2021

1.2 Comparison of Monitoring Results with AQOs

The results presented are after adjustments for “annualisation” and for distance to a location of relevant public exposure (if required), the details of which are described in Appendix A.

Table D1. Annual Mean NO_2 Ratified and Bias-adjusted Monitoring Results

Site ID	Site type	Valid data capture for monitoring period %[a]	Valid data capture 2021 %[b]	2015	2016	2017	2018	2019	2020	2021 [c]
UK-AIR ID: UKA00260 **EU Site ID:** GB0637A	Automatic	-	96	**40**	**43**	40	39	37	33	32
UK-AIR ID: UKA00568 **EU Site ID: GB1024A**	Automatic	-	91	24	26	24	23	22	16	18
Site ID: HG005	Automatic	62	-	-	-	-	-	-	-	**44**

Notes: Exceedance of the NO_2 annual mean AQO of 40 µg m^{-3} are shown in **bold**.

NO_2 annual means in excess of 60 µg m^{-3}, indicating a potential exceedance of the NO_2 hourly mean AQS objective are shown in **bold and underlined.**

[a] data capture for the monitoring period, in cases where monitoring was only carried out for part of the year
[b] data capture for the full calendar year (e.g., if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%)

[c] Means should be “annualised” in accordance with LLAQM Technical Guidance, if valid data capture is less than 75%

The concentration of NO_2 monitored along the two Haringey Roadside were still higher than that recorded on London Haringey Priory Park South.

No exceedances of the annual objective of 40µg/m^3 NO_2 were identified at either of the two existing Haringey locations, therefore the annual objective has been achieved. The hourly NO_2 objective was also achieved at both monitoring locations. However, there is an exceedance of the annual objective of 40µg/m3 NO_2 at the locally managed (Wood Green Monitoring Station) but the hourly NO_2 objective was achieved at the monitoring location.

At the Haringey South location, the NO_2 trend remains steady and low whilst that of the Haringey Roadside has also continued to fall in concentration.

Table D2. Annual Mean NO_2 Ratified and Bias-adjusted Monitoring Results

Site ID	Site type	Valid data capture for monitoring period %[(a)]	Valid data capture 2021 %[(b)]	2015	2016	2017	2018	2019	2020	2021
HR06	200A, Archway Road, N6 5BA	-	91.7	**51**	**44**	**41**	35	36.3	30.24	32.8
HR08	7 Cross Lane, N8 7QG	-	100	31	28	27	19	29.5	20.32	25.3
HR14a	639 High Road, N17	-	100	39	33	34	33	34.1	30.10	30.7
HR14b [d]	639 High Road, N17	-	100	-	-	-	-	-	33.01	30.4
HR14c [d]	639 High Road, N17	-	100	-	-	-	-	-	30.20	31.8
HR21 [c]	Lordship Lane Primary School	-	100	33	31	30	-	23.0	21.98	21.4
HR24	Westbury Medical Centre, 205 Westbury Av., N22 6RX	-	91.7	**43**	37	33	33	34.1	28.72	30.8
HR25	Rowland Hill Nursery, White Hart Lane	-	100	33	30	29	35	27.4	20.16	23.0
HR27	The Old Surgery, 572 Green Lanes, N8 0RP	-	100	**43**	36	33	31	36.4	28.97	32.7
HR28 [C]	Bounds Green Primary School, N11	-	91.7	35	33	34	-	30.7	28.97	30.5
HR30	Earlsmead Primary School, N17	-	83.3	**50**	**43**	**40**	**44**	39.6	33.12	30.1
HR31	97/101 High Road, N22 6BB	-	83.3	**-**	**59**	**52**	**65**	**67.8**	**71.52**	**62.3**
HR32	271 Archway Road, N6 5AA	-	91.7	-	**69**	**55**	**66**	**53.4**	**49.51**	**54.0**

Site ID	Site type	Valid data capture for monitoring period %[a]	Valid data capture 2021 %[b]	2015	2016	2017	2018	2019	2020	2021
HR34 [a]	Coleridge Primary school	-	100	-	-	31	31	32.1	28.15	29.7
HR35 [a]	Chestnuts Primary School	-	91.7	-	-	22	31	30.5	22.25	23.8
HR36 [b]	Holy Trinity CE School, Tottenham	-	100	-	-	-	30	33.9	29.11	29.1
HR37 [b]	Weston Park/Broadway, 48 The Broadway, N8 9TP	-	100	-	-	-	36	**42.2**	29.59	32.3
HR38 [C]	Welbourne Primary School N15	-	100	-	-	-	-	24.5	21.36	22.4
HR39 [e]	Fortismere School, N10 1NE	75	-	-	-	-	-	-	-	21.6
HR40 [e]	Opposite Highgate Private Hospital, 17 – 19 View Road, Highgate. N6 4DJ	83.3	-	-	-	-	-	-	-	25.5
HR41 [e]	258 Muswell Hill Broadway, N10 3SH	75	-	-	-	-	-	-	-	**42.5**
HR42 [e]	15 Stanhope Road, N6 5NE	83.3	-	-	-	-	-	-	-	21.0
HR43 [e]	St Aidan's VC Primary School, N4 4RR	83.3	-	-	-	-	-	-	-	19.3
HR44 [e]	North Harringay Primary School, N8 0NU	83.3	-	-	-	-	-	-	-	19.9
HR45 [e]	Tiverton Primary School, Pulford Road. N15 6SP	83.3	-	-	-	-	-	-	-	17.5

Site ID	Site type	Valid data capture for monitoring period %[a]	Valid data capture 2021 %[b]	2015	2016	2017	2018	2019	2020	2021
HR46 [e]	St John Vianney Roman Catholic Primary School, N15 3HB	83.3	-	-	-	-	-	-	-	20.6
HR47 [e]	134 West Green Rd, N15 5AD	83.3	-	-	-	-	-	-	-	30.3
HR48 [e]	Mulberry Primary School, N17 9RB	75	-	-	-	-	-	-	-	20.6
HR49 [e]	151 Mount Pleasant Road, N17 6TQ	83.3	-	-	-	-	-	-	-	23.7
HR50 [e]	Belmont Junior School, Rusper Road, N22 6RA	83.3	-	-	-	-	-	-	-	19.2
HR51 [e]	76 Coburg Road, N22 6UB	66.7	-	-	-	-	-	-	-	20.4
HR52 [e]	263 Victoria Road, N22 7XH	83.3	-	-	-	-	-	-	-	28.7
HR53 [e]	56 Partridge Way, N22 8DW	75	-	-	-	-	-	-	-	22.5
HR54 [e]	Woodside High Road/ White Hart Lane, N22 5QJ	83.3	-	-	-	-	-	-	-	20.9
HR55 [e]	Risley Ave. Primary, London N17 7AB	83.3	-	-	-	-	-	-	-	31.2
HR56 [e]	Dukes Aldridge Academy, Almond Road, N17 0PG	83.3	-	-	-	-	-	-	-	22.5
HR57 [e]	Campsbourne School Nightingale Lane, N8 7AF	83.3	-	-	-	-	-	-	-	19.9

Notes:

The annual mean concentrations are presented as µg m-3.

Exceedances of the NO_2 annual mean AQO of 40 µg m-3 are shown in bold.

NO2 annual means in excess of 60 µg m-3, indicating a potential exceedance of the NO_2 hourly mean AQS objective are shown in **bold and underlined**.

Means for diffusion tubes have been corrected for bias.

All means have been "annualised" in accordance with LLAQM Technical Guidance if valid data capture for the calendar year is less than 75% and greater than 25%.

Results have been distance corrected where applicable.

(a) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(b) data capture for the full calendar year (e.g., if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%).

All the diffusion tube results have been appropriately bias adjusted, using the Lambeth Scientific Services analytical laboratory national adjustment factors. Exceedances of the annual objective of 40µg/m3 are highlighted in bold. Similarly, to the 2020 data, HR31(Wood Green High Road) and HR32 (Archway Road/Southwood) exceed the air quality objective but HR30 (Earlsmead primary) and HR37 (Weston Park/Broadway Crouch End) continue to fall below the air quality objective. With the expansion of the monitoring locations to 35 in the borough, there is also an exceedance of the annual objective of 40µg/m3 at HR41 (Muswell Hill). The results are in accordance with the fact that the diffusion tubes are located in or adjacent to hotspot locations, as identified by the Bureau Veritas AQ modelling.

The data presented represents monitoring results for a 12-month period (January – December) and tubes are exposed in accordance with the UK Defra guidance LAQM.TG (16).

With diffusion tubes considered to have limitations, the government recommends that; tubes should be co-located with an automatic analyser to determine a bias adjustment factor, which is then applied to the raw annual average concentrations for the same year to obtain bias adjusted results. Haringey co-locates a diffusion tube at HR14 (639 High Road, Tottenham) and submits the data annually.

However, it is the national laboratory average adjustment factor (Lambeth Scientific Services) that is applied to the raw annual average concentrations for the correct year to obtain the bias adjusted results. The bias adjustment factors are on their website:

http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html

The raw data from the co-located diffusion tube is submitted annually to the NO_2 diffusion tube network data managers for verification of the diffusion tubes and calculation of the laboratory bias adjustment factor.

The bias adjustment factor used was 0.97 of 5 study national bias adjustment factor by Lambeth Scientific Services for year 2021.

With the triplicate tube introduced at the council own co-location site from July 2020; we might start considering using the calculated local bias adjustment factor from the next year's report.

Table E shows that there have been no exceedances of the hourly NO_2 objective in 2021.

Table E. NO_2 Automatic Monitoring Results: Comparison with 1-hour Mean Objective, Number of 1-Hour Means > 200 µg m^{-3}

Site ID	Valid data capture for monitoring period %([a])	Valid data capture 2021 %([b])	2015	2016	2017	2018	2019	2020	2021
UK-AIR ID: UKA00260 **EU Site ID:** GB0637A	-	96	0	6	5	0	0	0	0
UK-AIR ID: UKA00568 **EU Site ID:** GB1024A	-	91	0	0	0	0	0	0	0
Site ID: HG005	62	-	-	-	-	-	-	-	0 (120)

Notes

Results are presented as the number of 1-hour periods where concentrations greater than 200 µg m^{-3} have been recorded.

Exceedance of the NO_2 short term AQO of 200 µg m^{-3} over the permitted 18 hours per year are shown in **bold**.

If the period of valid data is less than 85%, the 99.8th percentile of 1-hour means is provided in brackets.

(a) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

(b) Data capture for the full calendar year (e.g., if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%

There have been no exceedances of the hourly NO_2 objective in 2021.

The 2021 annual Mean NO_2 Concentration in the London Borough of Haringey is attached to this report (Appendix B).

Table F. Annual Mean PM_{10} Automatic Monitoring Results (µg m^{-3})

Site ID	Valid data capture for monitoring period %([a])	Valid data capture 2021 %([b])	2015	2016	2017	2018	2019	2020	2021
Site ID: HG005	64.60	-	-	-	-	-	-	-	16

Notes

The annual mean concentrations are presented as µg m^{-3}.

Exceedances of the PM_{10} annual mean AQO of 40 µg m^{-3} are shown in **bold**.

All means have been "annualised" in accordance with LLAQM Technical Guidance, if valid data capture is less than 75% and more than 25%. However, the above figure has not been annualised been the only monitoring site for PM_{10} in the borough.

(a) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(b) Data capture for the full calendar year (e.g., if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%).

PM10 Automatic Monitor:

Whilst monitoring for PM_{10} ceased in Haringey in 2014, this was recommenced at the Wood Green monitoring station in May 2021. However, the historical PM_{10} monitoring data is available at:

www.uk-air.defra.gov.uk

No exceedances of the annual objective of 40µg/m3 PM_{10} identified at the Haringey location therefore, the annual objective has been achieved.

Table G. PM_{10} Automatic Monitoring Results: Comparison with 24-Hour Mean Objective, Number of PM_{10} 24-Hour Means > 50 µg m^{-3}

Site ID	Valid data capture for monitoring period %[(a)]	Valid data capture 2021 %[(b)]	2015	2016	2017	2018	2019	2020	2021
Site ID: HG005	64.60	-	-	-	-	-	-	-	0 (24)

Notes

Exceedances of the PM_{10} 24-hour mean objective (50 µg m^{-3} over the permitted 35 days per year) are shown in **bold.**

Where the period of valid data is less than 85% of a full year, the 90.4th percentile is provided in brackets.

(a) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

(b) data capture for the full calendar year (e.g., if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%).

No exceedances of the PM_{10} 24-hour mean objective (50 µg m-3 over the permitted 35 days per year) identified at the Haringey location therefore, the 24-hour mean objective has been achieved.

Table H. Annual Mean $PM_{2.5}$ Automatic Monitoring Results (µg m^{-3})

Site ID	Valid data capture for monitoring period %[(a)]	Valid data capture 2021 %[(b)]	2015	2016	2017	2018	2019	2020	2021
Site ID: HG005	64.60	-	-	-	-	-	-	-	10

Notes

The annual mean concentrations are presented as µg m^{-3}.

Exceedances of the $PM_{2.5}$ annual mean AQO of 25 µg m^{-3} are shown in **bold**.

All means have been "annualised" in accordance with LLAQM Technical Guidance, if valid data capture is less than 75% and more than 25%. However, the above figure has not been annualised been the only monitoring site for $PM_{2.5}$ in the borough.

(a) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(b) Data capture for the full calendar year (e.g., if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%).

In January 2016; Defra's AURN London Network managers (Environmental Research Group, Kings College, London) notified the Council of its intention to remove the $PM_{2.5}$ Defra network monitor from the HGY1 location to another location, outside of the borough:

'Under the AQ Directive, Defra are required to regularly assess the monitoring requirements in the UK. During the most recent assessment, London was found to have a greater number of $PM_{2.5}$ instruments than required under the directive but the number in some other zones and agglomerations in the UK were identified as requiring additional PM measurement. Defra therefore needs to move the $PM_{2.5}$ instrument from the site at Haringey Roadside to another AURN site'

However, whilst $PM_{2.5}$ monitoring was stopped in the borough since that time, this was recommenced at the Wood Green monitoring station in May 2021. The historical $PM_{2.5}$ monitoring data is available at: www.uk-air.defra.gov.uk.

No exceedances of the annual objective of 25µg/m3 $PM_{2.5}$ identified at the Haringey location therefore, the annual objective has been achieved.

Table I. Days where maximum rolling 8hr mean >100ug/m3: (AQS Objective <= 10) for Ozone

Site ID	Valid data capture for monitoring period %[a]	Valid data capture 2021 %[b]	2015	2016	2017	2018	2019	2020	2021
UK-AIR ID: UKA00568 **EU Site ID:** GB1024A	-	93	-	-	-	-	-	-	7

Note:

No exceedances of the annual objective of Days where maximum rolling 8hr mean >100ug/m3: (AQS Objective <= 10) for Ozone identified at the Haringey location therefore, the annual objective has been achieved.

2. Action to Improve Air Quality

2.1 Air Quality Action Plan Progress

Table J provides a brief summary of London Borough of Haringey progress against the Air Quality Action Plan, showing progress made this year.

Table J. Delivery of Air Quality Action Plan Measures

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
1.	**Monitoring and other core statutory duties**	a. With the support of all relevant teams, monitoring to include maintaining the borough's two automatic and 13 NO_x diffusion tube monitors across the borough and expand monitoring networks, especially around schools. b. Complete and submit Annual Status Reports on time. c. Update AQAPs every five years at a minimum and follow LLAQM guidance when doing this; check/amend AQMA's as required.	• We have increased monitoring by additional 19 NOx diffusion tubes, 1 automatic monitoring station and 2 indicative monitors for our school street project in 2021. This took our passive monitoring sites in 2021 to 35, 3 automatic monitoring sites and two indicative monitors. • Haringey Low Emission Neighbourhood Feasibility Study was also conducted at Tottenham High Road with the result submitted January 2021. Following its review, the council is seeking funding to progress Haringey's preferred solutions.
2.	**Emissions from developments and buildings**	a. Investigate the potential for larger development areas to proactively assess air quality impacts cumulatively.	• The council has continued to deliver on this measure. In 2021, 23 major planning applications were required to submit a dust management plan and register with the Considerate Constructors Scheme.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		b. Ensuring emissions from demolition and construction are minimised	
3.	Emissions from developments and buildings	a. Ensuring enforcement of non-road mobile machinery (NRMM) air quality policies	• The council continues to deliver on this measure in conjunction with its partner (GLA). In 2021, of the 25 sites audited, 19 were in compliant, 5 have not yet a NRMM within the scope (37 – 560KW) on site that can be audited whilst 1 is non-compliant.
4.	Emissions from developments and buildings	a. Reducing emissions from CHP. b. Enforcing CHP air quality policy. Ensure smaller developments use ultra-low NO_x Boilers.	• The council continues to monitor the impact of CHP plant within our borough and in 2021, only two major developments with CHPs boiler was subject to GLA emissions limits and/or other restrictions to reduce emissions but no Biomass boiler was installed for the year. Moreover, neither of these developments were subject to install Ultra-Low NOx boilers.
5.	Emissions from developments and buildings	a. Enforce Air Quality Neutral (AQN) policy	• We continue to enforce this policy and in 2021, there are eleven developments where an AQ Neutral building and/or transport assessments were undertaken.
6.	Emissions from developments and buildings	a. Ensuring adequate, appropriate, and well-located green space and infrastructure is included in new and existing developments.	• The council continues to ensure that exposure in amenity spaces is considered during development. This means the activities appropriate in existing amenity areas and at the design stage for the new sites. We aim to ensure there is a provision for green infrastructure in each development approved by the planning service. However, the council was not successful in its 2021 Defra bid to roll out its successful pilot on pollution screens. We will keep exploring other sources of fundings.
7.	Emissions from developments and buildings	a. Declaring Smoke Control Zones and ensuring they are fully promoted. To include: an awareness campaign, engagement with suppliers, and active enforcement. b. Ensuring that Smoke Control Areas are	• The council continues to enforce smoke emissions from bonfires. • We continue to be a member of the GLA wood burning working group and was successful in our Defra joint bid with other local authorities on Wood burners London wide project. • We still receive complaints about smoke from wood burning on canal boats and from restaurants using charcoal grills and in 2021, the council received 88 bonfire complaints which was about half of the number of complaints received in 2020. • However, the council civil enforcement officers continue to deal with perpetrators whilst we also intensify our awareness campaign through our website and constant response to public enquiries on this.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		appropriately identified and fully enforced.	
8.	Emissions from developments and buildings	a. Promoting and delivering energy efficiency and energy supply retrofitting projects in workplaces and homes through EFL retrofit programmes such as RE: FIT, RE: NEW and through borough carbon offset funds to replace old boilers/top-up lost insulation in combination with other energy conservation measures.	• Council adopted Affordable Energy Strategy 2021-2025 and approved use of £520,000 carbon offsetting funding to be used to deliver energy efficiency measures to fuel poor households which is still on-going. • Shine London are still providing an energy advice service. • We have had some work undertaken by Turner and Townsend and this is now being transferred into a specific energy strategy with a delivery plan. • We are currently in the design phase of the Energiesprong project. Whilst it may not proceed to installation nevertheless, a retrofit on the properties will be undertaken. • Promotion of GLA Green Homes Grant scheme for energy efficiency works which is still underway but now called Sustainable Warmth Fund. • Following the Council membership of Solar Together, a Pan-London buying group that reduces the cost of solar panels for households, we took part in Solar Together London Round 4 where installation is still taking place and we are expecting around 78 installations. • In 2021 Some improvements are being made by installing some noise/thermal insulation panels • We have also seen some domestic applications to retrofit air source heat pumps to replace local combustion. • The Community Carbon Fund is also funding local community groups to reduce their carbon emissions through Section 106 monies (from carbon offset contributions), some of which will also result in air quality improvements: - Collage Arts: installation of double glazing and LED lighting which will reduce the space heating demand, in preparation for the future retrofit of an air source heat pump. - Edible London: replacement of diesel/petrol vehicle for an electric van will result in the reduction of local combustion emissions. - Living Under One Sun will be researching feasibility of low-carbon energy production and cargo-bike delivery for future projects – TBC on impact but expected to be positive once this goes ahead. - Lordship Hub will install a solar PV system and LED lighting, which won't impact any local air quality, but will improve it for the electricity grid through lower energy demand. - Turkish Cypriot Community Association will install LED lighting, which won't impact any local air quality, but will improve it for the electricity grid through lower energy demand. • These projects will also be promoting the reduction in carbon emissions locally through engagement programmes. • HfH energy retrofit strategy in development to facilitate spending of £101m carbon budget set aside in the HRA to deliver a net zero borough. • 106 fuel poor private homes retrofitted with Green Homes Grant. A further 200 planned for 2022.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			• Ecofurb energy retrofit service promoted to be able to pay owner occupiers.
9.	Emissions from developments and buildings	a. Installation of residential electric charge points within developments. b. Master planning and redevelopment areas aligned with Air Quality Positive and Healthy Streets approaches.	• The council has 107 EV charging bays installed on the public highway that are managed by the Council. The map can be found https://www.google.com/maps/d/edit?mid=1xOOrGSnckjwPD3iRuEo6T5nVLx_M11JW&usp=sharing. • In addition to the above, the council continues to recommend installation of EVCP within new development at planning stage. Requesting that 20% of all new parking bays are to be electrified before occupation of units. • Our Smarter Travel encourages modal use changes through activities via national and local campaigns such as bike training and walking to school projects. • We continue to use every opportunity to bring the road safety and air quality messages of active travel to the schools and residents. • Bikeability is delivered to adults and families in the borough whilst bike maintenance sessions were offered in parks to assist residents in keeping vehicles safe.
10.	**Public health and awareness raising**	a. Public Health department taking shared responsibility for borough air quality issues and implementation of Air Quality Action Plans. b. Public Health Teams should be supporting engagement with local stakeholders (businesses, schools, community groups and healthcare providers). They should be asked for their support via the DPH when projects are being developed. c. Directors of Public Health (DsPH) fully briefed on the scale of the problem in your local authority area; what is being done, and what is needed. A briefing should be provided	• We are yet to receive any further progress report from our colleagues in Public Health beside the update below submitted in our 2020 report. • Public Health completed the Joint Strategic Needs Assessment (JSNA) on Air Quality. • Air Quality also mentioned in the JSNA Healthy Place (Draft) which will be finished this year. • Public Health supported numerous works across the council during COVID to improve active travel, pavement widening and planning. • Public Health Team makes health evidence submission to the cabinet paper on Air Quality. • School Super zone evaluation compiled by focus groups from parents and children on environment with around 3 schools and one children's centre in Tottenham which was fed into environmental improvements, including the Parks and Green Spaces Strategy, development of Page Green Common and Down Lane Park, Improved Greening around the schools. • Air Quality is also being monitored via the Borough Plan. Healthy Place is now included in the draft Health & Wellbeing Strategy with Air Quality as one of the priorities. • This will be monitored via the Healthy Place Group whilst; • Draft Health Impact Assessment on Planning Applications includes Air Quality indicators.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		d. Directors of Public Health to have responsibility for ensuring their Joint Strategic Needs Assessment (JSNA) has up to date information on air quality impacts on the population e. Strengthening co-ordination with Public Health by ensuring that at least one public health specialist within the borough has air quality responsibilities outlined in their job profile f. Director of Public Health to sign off Statutory Annual Status Reports and all new Air Quality Action Plans	
11.	Public health and awareness raising	a. Engagement with businesses as part of the 'Liveable Neighbourhoods' project in Crouch End	• No action as the Liveable Crouch End Project was stopped due to TfL funding. The Council is now working to deliver 3 Low Traffic Neighbourhoods in the summer of 2022. This includes residents and business engagement.
12.	Public health and awareness raising	a. Supporting Airtext, promotion and dissemination of high pollution alert services.	• The council has continued to deliver on this measure in 2021 by disseminating high pollution alert service to members of the public.
13.	Public health and awareness raising	a. Encourage schools to join the TfL STARS accredited travel planning programme	• All borough Schools (LA & Private) continue to receive updated bulletins every 2 weeks with current relevant news. • We continue to promote TfL STARS activities and national and local actions to offer as many schools as possible opportunities to take part. • 1:1 and group support offered to schools e.g., Sustrans big walk and wheel and Walk to School Week. • Resources offered to encourage participation in schemes and assistance with the system.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			• Whilst we Liaise between schools and highways on issues raised to encourage more participation.
14.	Public health and awareness raising	a. Air quality in and around schools	• Smarter Travel Team provide resources to support the schools, encourage participation in the Anti Idling workshops offered and support schools with School Streets project. • We provide promotional items regarding air quality activities. • We also offer every school bikeability training and the offer of buying bikes on pay monthly basis. • We have created walk zone leaflets bespoke to every school. These have been sent to every school too – to promote active travel. • Walk to school Week is also promoted.
15.	**Delivery servicing and freight**	a. Update of procurement policies to reduce pollution from logistics and servicing. b. Ensure local authority procurement policies include a requirement for suppliers with large fleets to have attained bronze Fleet Operator Recognition Scheme (FORS) accreditation or equivalent standard. c. Priority loading for ultra-low emission delivery vehicles.	• The council continues to follow the rules set by procurement for any freight that falls under our service areas.
16.	Delivery servicing and freight	a. Reducing emissions from deliveries to local businesses and residents: Re-organisation of freight to support consolidation (or micro-consolidation) of deliveries, by setting up or participating in new logistics facilities, and/or potentially additional cost depending upon type of contract and distance needed to travel	• With this major exercise likely to have contractual, cost and service disruption implications, this action will be reviewed as part of the new contract which expires in 3 years when service round is due for review.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
17.	**Borough Fleet**	a. Reducing emissions from council fleets: Increasing the number of hydrogens, electric, hybrid, bio-methane and cleaner vehicles in the boroughs' fleet	• The Council is constantly reviewing its fleet. This has included using tracking equipment to monitor usage levels and compare these vehicles to alternative electric vehicles (EVs). This analysis has shown that at this time there are no EVs on the market that deliver our service requirements, but we believe that the vehicles will be there within the next year or so. Therefore, where vehicles need to be replaced, they will be replaced with new and cleaner Euro 6 vehicles. However, where we can stretch the life of the vehicles we will do so, with the ambition to switch to EVs within the next few years. We have procured a fleet of 7 E-Cargo Bikes for the Parks service, which will replace the small diesel buggies that are currently used in services across our parks as additions to their maintenance fleet
18.	**Localised solutions**	a. Expanding and improving green Infrastructure (GI)	• 218 new trees were planted between Jan-Dec 2021 • The PGSS has been developed in draft and will be consulted upon and adopted in 2022. • Smarter travel through TfL STARS encourages environmental activities and Trees for Cities has been working in several of our schools creating Edible Playgrounds and Lordship Lane Primary has a living wall.
19.	Localised solutions	a. Low Emission Neighbourhoods (LENs) b. Low Emission Vehicle Strategy c. Road closures around Schools d. Public recognition of businesses that contribute to good air quality e. Publicity of air quality status and Council activity	• We have delivered 17 new school streets in the borough with a rolling plan to increase the number of School Streets, where feasible. • https://www.haringey.gov.uk/parking-roads-and-travel/travel/smarter-travel/school-streets • E-cargo bikes purchased for the Parks team to be use instead of vehicles for site inspections and minor works/maintenance duties. • Smarter Travel Team offer support and guidance to schools and help to deliver 6 School Street schemes as part of the LTN projects in the borough. • https://www.haringey.gov.uk/parking-roads-and-travel/travel/transport-strategy/low-traffic-neighbourhoods-haringey
20.	**Cleaner transport**	a. Ensuring that Transport and Air Quality policies and projects are integrated	• Officers from both transport planning and pollution continue to work together as evident in the draft Walking and Cycling Action Plan and the Low Traffic Neighbourhoods project which is still on-going.
21.	Cleaner transport	a. Discouraging unnecessary idling by taxis and other vehicles	• The council has continued to drive behavioural changes whilst its effort on campaigning and education has also continued to be intensified through the council participation in the Pan London Anti-Idling Project and enforcement. • In 2021, a couple of idling campaigns were carried out with few pupils in attendance because of the national lockdown due to COVID 19 causing us to switch into a virtual campaign with our GLA partner for this work.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			• No progress was made on fleet engagement due to change in fleet management, but a lot of progress was made through the dissemination of information regarding this both internally and externally by our communication team. • Smarter Travel works with Leisure Team to deliver Play Streets in the borough, but a specific Car Free Day was not possible in 2021.
22.	Cleaner transport	a. Regular temporary car free days	• During 2021 there were no Car Free events due to social distancing requirements.
23.	Cleaner transport	a. Using parking policy to reduce pollution emissions such as free or discounted parking charges or residential parking permits for zero emission cars and/ or surcharges on diesel vehicles below Euro 6 standards for Resident and Controlled Parking Zone permits	• No further update beside the progress below reported in 2020 report. • In September 2020, the Council agreed to add a £10 increase across all existing parking permit charge bands. Alongside this, a surcharge (£80) was added on diesel fuelled vehicles and on second and subsequent residential parking permits per household (£50 per second vehicles). The report can be seen here.
24.	Cleaner transport	a. Installation of Ultra-low Emission Vehicle (ULEV) infrastructure (electric vehicle charging points, rapid electric vehicle charging point and hydrogen refuelling stations): Support GLA in the Expansion of ULEZ b. Increasing the proportion of electric, hydrogen and ultra-low emission vehicles in Car Clubs c. Increase the introduction and use of electric vehicle Car Clubs across the borough	• The council has 107 EV charging bays installed on the public highway that are managed by the Council. The map can be found https://www.google.com/maps/d/edit?mid=1xOOrGSnckjwPD3iRuEo6T5nVLx_M11JW&usp=sharing. • These will be supported by private charging stations in shopping centre car parks, private businesses, and homes. • The Council is finalising a Rapid Charging Hub with TfL at the site of the new Council depot on Watermead Way. This will work alongside the newly electrified bus depot operated by Go Ahead. • The new car club contract provides incentives for providers to take up electric cars on their fleet. However, we are yet to require 100% electric cars but when the existing contract expires in December 2022, we will review our targets for providers.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		d. Reprioritisation of road space; reducing parking at some destinations and or restricting parking on congested high streets and A roads to improve bus journey times, cycling experience, and reduce emissions caused by congested traffic.	
25.	Cleaner transport	a. Provision of infrastructure to support walking and cycling. To enable cycling by increasing the number of secure cycle parking spaces.	• Offering discounted bikes in 'Try before you bike' scheme with Peddle My Wheels with 260 residents now purchased a bike at low cost and received cycle training. 76 of this was purchased in 2021 • 300 adults took part in cycle training lessons • 18 Dr. Bike sessions delivered to the public with 312 bikes serviced. • We are yet to receive any further update from our colleagues in Transport Planning beside the progress below on the actions submitted in our 2020 report. Which are: • We have installed bike hangars on a number of residential streets to accommodate demand for secure residential cycle parking. To date we have installed 139 in the borough. • The emerging Walking and Cycling Action plan which was out for consultation in summer 2021 set out how we intend to deliver Walking and Cycling Infrastructure over the next 10 years, including any future cycling infrastructure and Low Traffic Neighbourhoods (LTNs).

3. Planning Update and Other New Sources of Emissions

Table K. Planning requirements met by planning applications in London Borough of Haringey in 2021

Condition	Number
Number of planning applications where an air quality impact assessment was reviewed for air quality impacts	13
Number of planning applications required to monitor for construction dust	23
Number of CHPs/Biomass boilers refused on air quality grounds	0
Number of CHPs/Biomass boilers subject to GLA emissions limits and/or other restrictions to reduce emissions	2
Number of developments required to install Ultra-Low NO_x boilers	0
Number of developments where an AQ Neutral building and/or transport assessments undertaken	11
Number of developments where the AQ Neutral building and/or transport assessments not meeting the benchmark and so required to include additional mitigation	3
Number of planning applications with S106 agreements including other requirements to improve air quality	0
Number of planning applications with CIL payments that include a contribution to improve air quality	0
NRMM: Central Activity Zone and Canary Wharf Number of conditions related to NRMM included. Number of developments registered and compliant. Please include confirmation that you have checked that the development has been registered with the GLA through the relevant NRMM website and that all NRMM used on-site is compliant with Stage IIIB of the Directive and/or exemptions to the policy.	N/A
NRMM: Greater London (excluding Central Activity Zone and Canary Wharf) Number of conditions related to NRMM included. Number of developments registered and compliant. Please include confirmation that you have checked that the development has been registered at www.nrmm.london and that all NRMM used on-site is compliant with Stage IIIA of the Directive and/or exemptions to the policy.	56 There are 56 conditions related to NRMM at the relevant 28 major building sites. 35 sites were registered on the nrmm website in 2021. In 2021, of the 25 sites audited, 19 were in compliant, 5 has not yet a NRMM within the scope (37 – 560KW) on site that can be audited whilst 1 is non-compliant. The Council will continue to work to ensure development sites are compliant regarding emissions from NRMM. The borough is a member of the

Condition	Number
	Pan London NRMM monitoring scheme hosted by Merton Council. It aims to continue to collate reports on, and to monitor the emissions from NRMM on development sites across London ensuring standards are applied consistently.

Records of the above information on planning applications are kept in the Haringey internal database called M3. This is also duplicated in the pollution team planning folder for officers' comment and recommendation.
The council received 13 major planning applications that required AQ assessment in 2021 which all submitted such reports at the planning stage.

The NRMM record is from the yearly audit report submitted to the council through its membership of Pan London NRMM as well as from the registered information on the nrmm.london website for the council.

3.1 New or significantly changed industrial or other sources

No new sources identified.

4. Additional Activities to Improve Air Quality

4.1 London Borough of Haringey Fleet

We can't provide details of how many a) zero emission and b) zero emission capable vehicles there are within our borough's fleet, and what percentage of the fleet these represent.

However, we have procured a fleet of 7 E-Cargo Bikes for the Parks service, which will replace the small diesel buggies that are currently used in services across our parks as additions to their maintenance fleet.

4.2 NRMM Enforcement Project

We can confirm that London borough of Haringey will continue to support the NRMM Enforcement project in 2022 – 23.

4.2 Air Quality Alerts

We can confirm that London Borough of Haringey support *air*TEXT (https://www.airtext.info/) which can be accessed through this link on the council website.

https://www.haringey.gov.uk/business/licensing-and-regulations/environment-and-waste/pollution-control/air-pollution/airtext

Appendix A Details of Monitoring Site Quality QA/QC

A.1 Automatic Monitoring Sites

Haringey's two automatic monitoring stations are part affiliated to the Automatic Urban & Rural Network (AURN) whilst the third is locally managed by Ricardo Energy and Environment (Ricardo). AURN sites have Defra funding as the data is more rigorously scrutinised with traceability to EU standards. Part affiliated sites are part funded by Defra and part funded by the local authority.

Defra's London AURN data manager is the Environmental Research Group (ERG), Imperial College London. ERG collates the data on a daily basis, validates it before sending it onto the national data managers, who ratify it to EU standards.

Routine calibrations are undertaken fortnightly for both the (roadside site) and (background site) by ESU1. Each site is audited bi-annually following a full service. The calibrations support the quality assurance and quality control (QA/QC) checks that are carried out on the raw data to the AURN standard. This is to ensure that:

- Data is representative of ambient concentrations in the area
- Measurements are accurate and precise in order to meet monitoring requirements
- Data can be consistently compared with data from national and international standard sites
- Measurements are consistent over time

Further information on data validation and ratification is available on the Defra website: www.uk-air.defra.gov.uk and https://www.airqualityengland.co.uk/ respectively.

PM_{10} Monitoring Adjustment

Whilst PM_{10} monitoring recommenced in May 2021, no monitoring adjustment was done for the year data.

A.2 Diffusion Tubes

Haringey's diffusion tubes are prepared and analysed by Lambeth Scientific Services which is a UKAS accredited laboratory. This laboratory participates in the Air Proficiency Testing (AIR – PT) scheme to meet European standards and is involved in the network field inter-comparison exercise operated by LGC, which assesses the sampling and analytical performance of the tubes. Nitrogen dioxide diffusion tubes are prepared using the 50% triethanolamine (TEA) in acetone method.

- Until July 2020 when we increased this to three, one diffusion tube was co-located with an automatic analyser for NO_2. This is at the Haringey Roadside monitoring site. All diffusion tube results have been appropriately bias adjusted, using the national analytical laboratory adjustment factor of 0.97 spreadsheet version issued 03/2022. Although we might be changing to the local factor from the next annual status report now that we are in a position of having a full monitoring data from the co-location site.
- Co-ordination of a quality assurance/quality control (QA/QC) framework, aimed at the analytical laboratories that supply and analyse the diffusion tubes currently comprises:
- Promotion of the independent Air Proficiency Testing (AIR – PT) scheme, operated by the Health and Safety Laboratory, with yearly assessment against agreed performance criteria.
- Operation of a field intercomparison exercise, in which diffusion tubes are co-located with an automatic analyser: from January 2006 this is at a roadside site.
- Operation of a QC solution testing scheme. Participation is recommended for any laboratory that prepares or analyses NO_2 diffusion tubes used by Local Authorities for LAQM purposes.
- Quarterly summaries of participating laboratories' performance in the Air Proficiency Testing (AIR – PT) scheme over the preceding 12 months, prepared by LGC, are available by clicking on the links below:

http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html

Table L. Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2021	National	03/22	0.97
2020	National	03/21	0.96

A.3 Adjustments to the Ratified Monitoring Data

Short-term to Long-term Data Adjustment

The data for HR51 Western Road, Wood Green was adjusted in line with Box 7.10 of the Local Air Quality Management Technical Guidance (TG16) using the co-located Haringey Tottenham Town Hall automatic monitoring station as the background site because the data capture rate for all monitoring data for 2021 at HR51 was 66.7% which was below 75% for a full calendar year required.

Diffusion Tube Data Annualisation for HR51

Months	Start Date	End Date	B1	D1	B1 when D1 is available
January	08/01/21	05/02/21	37.0		
February	05/02/21	04/03/21	37.5		
March	04/03/21	16/04/21	34.8	23.0	34.8
April	16/04/21	05/05/21	31.9	24.0	31.9
May	05/05/21	03/06/21	30.7	16.0	30.7
June	03/06/21	03/07/21	27.0	15.0	27.0
July	03/07/21	29/07/21	29.6	16.0	29.6
August	29/07/21	03/09/21	26.6		
September	03/09/21	30/09/21	35.5	21.0	35.5
October	30/09/21	04/11/21	33.1		
November	04/11/21	02/12/21	29.6	25.0	29.6
December	02/12/21	06/01/22	31.2	24.0	31.2
		Average	**32.0**	**20.5**	**31.2**

Annual Mean (Am) = 32.0

Period Mean (Pm) of B1 = 31.2

Ratio of Am/Pm = 32/31.2 = 1.02

Therefore, the annualised average (D1) = Measured Period Mean Concentrations (M) x Annualisation Factor (Ra)

Thus, D1 = M × Ra

= 20.5 X 1.02 = 21µg/m^3

Annualising Continuous Monitoring Data for Wood Green site

The automatic monitoring data for Wood Green station was annualised in line with Box 7.9 of the Local Air Quality Management Technical Guidance (TG16) using two long-term, continuous monitoring sites at Haringey Town Hall and Haringey South (Priory Park) both of which forms part of the national network because the data capture rate for all monitoring data for 2021 at the site was 62% which was below 75% for a full calendar year required. With the site to be annualised itself a Roadside site, this accounts for why one Roadside and one Urban background rather than both been (Urban Background, Suburban or Rural) sites.

Background Site	**Annual Mean 2021 (A_m)**	**Period Mean (P_m)**	**Ratio (A_m/P_m)**
Haringey Town Hall	32	30.4	1.05
Haringey South (Priory Park)	18	15.7	1.15
	Average (R_a)		1.10

The best estimate of the annual mean for Wood Green site in 2021 will be $M \times R_a = 40 \times 1.10 = 44.0 \mu g/m^3$

Distance Adjustment

All monitoring locations are representative of public exposure. No Distance adjustment is required.

Table M. Short-Term to Long-Term Monitoring Data Adjustment

Site ID	Annualisation Factor Haringey Town Hall	Annualisation Factor Haringey South (Priory Park)	Annualisation Factor	Annualisation Factor	Average Annualisation Factor	Raw Data Annual Mean (µg m^{-3})	Annualised Annual Mean (µg m^{-3})	Comments
HR51	1.02							Annualised with only one background site
HG005	1.05	1.15						Annualised with one Roadside and one Urban background

Appendix B Full Monthly Diffusion Tube Results for 2021

Table N. NO_2 Diffusion Tube Results

Site ID	Site address	Valid data capture for monitoring period % [a]	Valid data capture 2021 % [b]	Annual Mean NO_2													
				Jan	Feb	March	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual mean – raw data [c]	Annual mean – bias adjusted [c] (0.97)
HR06	Archway	91.7	91.7	37	32	33	39	29	-	33	24	42	32	37	34	33.8	32.8
HR08	Mortuary/ St James	100	100	37	34	24	25	24	20	22	14	27	25	31	31	26.1	25.3
HR14a	639 High Road, N17	100	100	36	33	34	31	31	30	31	33	33	32	25	31	31.7	30.7
HR14b	639 High Road, N17	100	100	39	31	31	29	30	31	30	29	34	32	27	32	31.3	30.4
HR14c	639 High Road, N17	100	100	37	34	36	30	32	30	31	28	37	34	29	35	32.8	31.8
HR21	Lordship Lane Primary School, N22 5PS	100	100	28	29	20	21	18	17	17	21	22	23	23	26	22.1	21.4
HR24	Westbury Medical Centre	91.7	91.7	41	36	35	36	-	33	28	3	38	32	37	31	31.8	30.8
HR25	Rowland Hill Nursery, White Hart Lane	100	100	28	32	23	26	22	19	19	13	28	23	23	28	23.7	23.0
HR27	The Old Surgery Green Lanes	100	100	35	39	34	34	30	35	32	24	37	36	33	35	33.7	32.7
HR28	Bounds Green School, N11 2QG	91.7	91.7	-	34	40	34	27	30	30	27	31	27	32	33	31.4	30.5
HR30	Earlsmead primary	83.3	83.3	37	36	32	34	33	-	28	19	-	28	32	31	31	30.1
HR31	Wood Green High Road	83.3	83.3	56	58	70	59	67	62	72	59	-	-	70	69	**64.2**	**62.3**

HR32	Archway Road/Southwood	91.7	91.7	61	50	56	50	63	56	60	45	66	62	-	44	**55.7**	**54.0**
HR34	Coleridge Primary school	100	100	32	33	31	33	32	28	28	22	41	30	28	29	30.6	29.7
HR35	Chesnuts Primary School	91.7	91.7	17	30	24	24	21	18	-	16	29	29	31	31	24.5	23.8
HR36	Holy Trinity CE School, Tottenham	100	100	37	30	34	24	30	24	25	20	31	36	34	35	30	29.1
HR37	Weston Park/Broadway, N8	100	100	39	36	37	28	35	30	30	25	37	32	37	34	33.3	32.3
HR38	Welbourne School, N15 4EA	100	100	24	26	25	21	21	20	18	18	25	25	27	27	23.1	22.4
HR39	Fortismere School, N10 1NE	75	75	-	-	-	26	22	19	19	11	27	22	27	28	22.3	21.6
HR40	Opposite Highgate Private Hospital, 17 – 19 View Road, Highgate. N6 4DJ	83.3	83.3	-	-	26	28	27	27	22	18	32	25	30	28	26.3	25.5
HR41	258 Muswell Hill Broadway, N10 3SH	75	75	-	-	48	44	-	46	32	29	56	47	50	42	**43.8**	**42.5**
HR42	15 Stanhope Road, N6 5NE	83.3	83.3	-	-	23	20	21	16	18	17	27	22	25	28	21.7	21.0
HR43	St Aidan's VC Primary School, N4 4RR	83.3	83.3	-	-	27	19	16	16	16	13	21	20	27	24	19.9	19.3
HR44	North Harringay Primary School, N8 0NU	83.3	83.3	-	-	25	19	16	16	17	13	24	24	28	23	20.5	19.9
HR45	Tiverton Primary School, Pulford Road. N15 6SP	83.3	83.3	-	-	20	21	17	15	16	13	21	15	20	22	18	17.5

HR46	St John Vianney Roman Catholic Primary School, N15 3HB	83.3	83.3	-	-	27	23	20	17	18	14	24	22	28	19	21.2	20.6
HR47	134 West Green Rd, N15 5AD	83.3	83.3	-	-	35	32	27	31	28	21	39	32	37	30	31.2	30.3
HR48	Mulberry Primary School, N17 9RB	75	75	-	-	5	24	20	-	19	20	24	24	25	30	21.2	20.6
HR49	151 Mount Pleasant Road, N17 6TQ	83.3	83.3	-	-	27	28	19	22	19	16	30	25	27	31	24.4	23.7
HR50	Belmont Junior School, Rusper Road, N22 6RA	83.3	83.3	-	-	20	19	19	16	16	15	21	22	25	25	19.8	19.2
HR51	76 Coburg Road, N22 6UB	66.7	66.7	-	-	23	24	16	15	16	-	21	-	25	24	21.0	20.4
HR52	263 Victoria Road, N22 7XH	83.3	83.3	-	-	36	28	26	27	26	18	35	33	33	34	29.6	28.7
HR53	56 Partridge Way, N22 8DW	75	75	-	-	-	25	21	19	19	14	29	26	27	29	23.2	22.5
HR54	Woodside High Road/ White Hart Lane, N22 5QJ	83.3	83.3	-	-	4	21	21	20	20	22	28	24	25	30	21.5	20.9
HR55	Risley Ave. Primary, London N17 7AB	83.3	83.3	-	-	30	32	30	30	31	25	41	32	35	37	32.3	31.2
HR56	Dukes Aldridge Academy, Almond Road, N17 0PG	83.3	83.3	-	-	25	24	16	17	17	23	26	25	28	31	23.2	22.5
HR57	Campsbourne School Nightingale Lane, N8 7AF	83.3	83.3	-	-	26	23	17	17	16	13	21	23	23	26	20.5	19.9

Notes

Concentrations are presented as µg m^{-3}.

Exceedances of the NO_2 annual mean AQO of 40 µg m^{-3} are shown in **bold**.

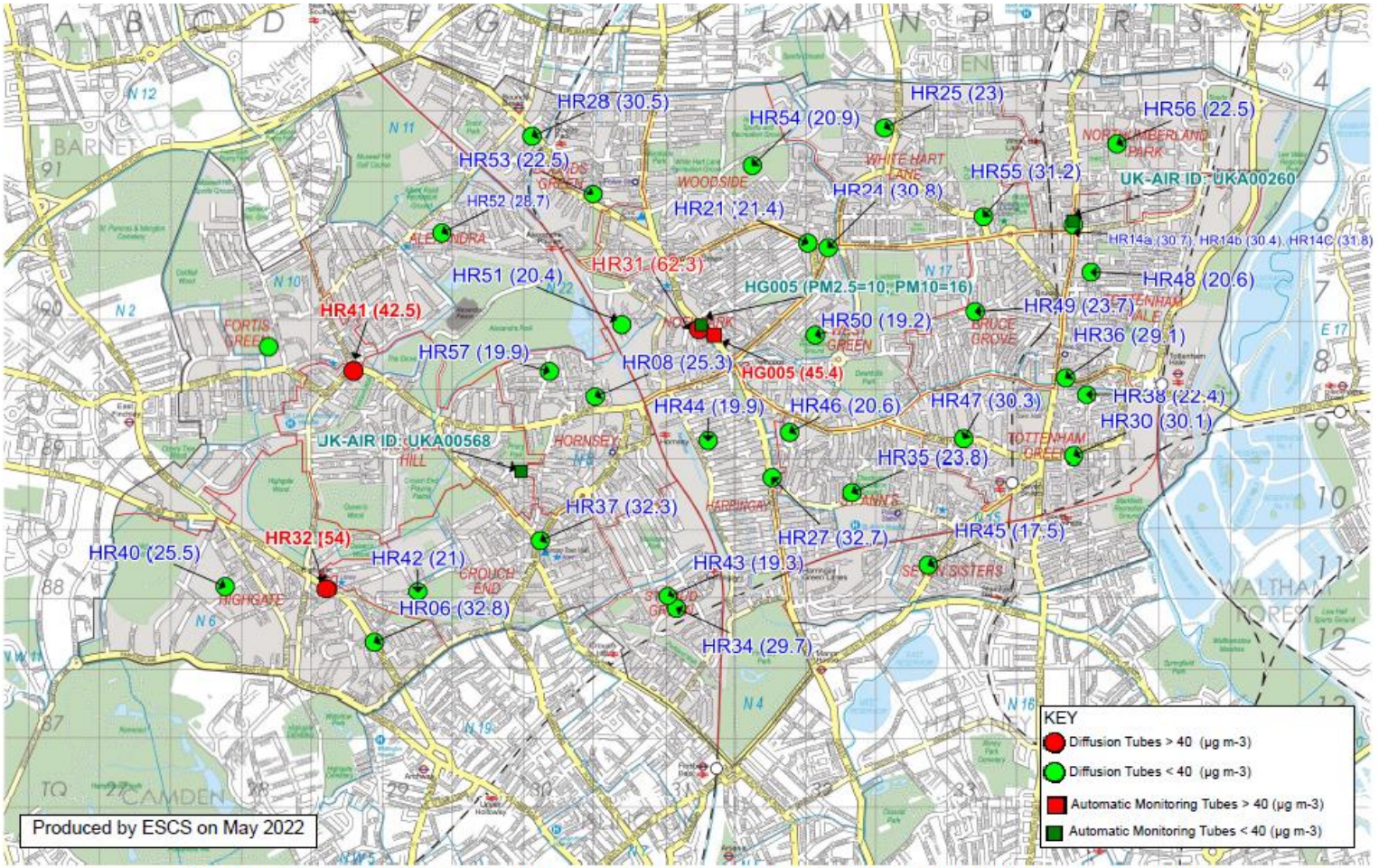
NO_2 annual means in excess of 60 µg m^{-3}, indicating a potential exceedance of the NO_2 hourly mean AQS objective are shown in **bold and underlined**.

All means have been "annualised" in accordance with LLAQM Technical Guidance if valid data capture for the calendar year is less than 75% and greater than 25%.

(a) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(b) data capture for the full calendar year (e.g., if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%).

Appendix C 2021 Monitoring Site Locations and Annual Mean NO_2, PM2.5 and PM10 Concentration



Air quality monitoring sites across London Borough of Haringey - 2021