London Borough of Barking and Dagenham Air Quality Annual Status Report for 2023

Date of publication: July 2024

This report provides a detailed overview of air quality in London Borough of Barking and Dagenham during 2023. It has been produced to meet the requirements of the London Local Air Quality Management (LLAQM) statutory process[1].

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

Contents

Tables

Figures

Abbreviations

Abbreviation	Description
AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
AQN	Air Quality Neutral
AQO	Air Quality Objective
AQP	Air Quality Positive
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 and International Standards, Objectives and Guidelines

Pollutant	Standard / Objective / Guideline	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
Nitrogen dioxide (NO_2)	WHO AQG[2]: 10 µg m^{-3}	Annual mean	
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})	WHO AQG[2]: 45 µg m^{-3} not to be exceeded more than 3-4 times a year	24-hour mean	
Particles (PM_{10})	40 µg m^{-3}	Annual mean	31 Dec 2004
Particles (PM_{10})	WHO AQG[2]: 15 µg m^{-3}	Annual mean	
Particles ($PM_{2.5}$)	20 µg m^{-3}	Annual mean	2020
Particles ($PM_{2.5}$)	London Mayoral Objective[3]: 10 µg m^{-3}	Annual mean	2030
Particles ($PM_{2.5}$)	WHO AQG[2]: 5 µg m^{-3}	Annual mean	
Particles ($PM_{2.5}$)	Target of 15% reduction in concentration at urban background locations	3-year mean	Between 2010 and 2021
Particles ($PM_{2.5}$)	WHO AQG[2]: 15 µg m^{-3}	24-hour mean	
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} mot to be exceeded more than 3 times a year	24-hour mean	31 Dec 2004
Sulphur dioxide (SO_2)	WHO AQG[2]: 40 µg m^{-3} not to be exceeded more than 3-4 times a year	24-hour mean	

Notes:

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

(2) 2021 World Health Organisation Air Quality Guidelines

(3) London Mayoral Objective

1. Air Quality Monitoring

London Borough of Barking and Dagenham (LBBD) operates 2 automatic monitoring stations (Table B), which are both located at suburban background and within 24 and 28meters respectively from relevant exposure.

1.1 Locations

Table B. Details of Automatic Monitoring Sites for 2023

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
(BG1)	Rush Green Primary School	Suburban Background	551053	187233	NO_2, SO2	Y	Chemiluminescent, UV Florescence	28	50	4
(BG2)	Scrattons Farm	Suburban Background	548043	183320	NO_2, PM10	Y	Chemiluminescent, Teom	24	24	3.5

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

The Council started monitoring for nitrogen dioxide by diffusion tube in the borough in 2020 at eight monitoring locations.
This was increased by another twenty locations in 2021 and have since increased again by another twenty monitoring locations in 2023.
The council now have forty-eight monitoring locations spread throughout the borough with one of it a triplicate location at Rush Green Primary School which is co-located with one of the council automatic monitoring stations.
Table C below gives individual site details, locations for the 2023 monitoring round. All diffusion tube sites are indicative of relevant exposure from roadside, background, and urban background sites. The diffusion tubes are located at building facades of residential properties and schools or adjacent to hotspot locations where possible.

Table C. Details of Non-Automatic Monitoring Sites for 2023

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
DT1	Ripple Road Primary School	Roadside	544793	183783	NO_2	Y	17	2	N	2.5
DT2	1A Westminster Gardens	Roadside	545032	183193	NO_2	Y	3	1	N	2.5
DT3	6/7 Scrattons Terrace	Roadside	547806	183543	NO_2	Y	5	1	N	2.5
DT4	291 Dagenham Heathway	Roadside	549035	184813	NO_2	Y	6	1	N	2.5
DT5	Wood Lane/Valence Avenue Junction	Roadside	547789	185792	NO_2	Y	5	2	N	2.5
DT6a	Rush Green Primary School	Background	551057	187231	NO_2	Y	28	N/A	Y	1.5
DT6b	Rush Green Primary School	Background	551057	187231	NO_2	Y	28	N/A	Y	1.5
DT6c	Rush Green Primary School	Background	551057	187231	NO_2	Y	28	N/A	Y	1.5
DT7	Whalebone Lane South/Whalebone North/High Road Junction	Roadside	548544	188125	NO_2	Y	2	2	N	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
DT8	Outside No. 31 Eastern Avenue West (the A12)	Roadside	548359	189057	NO_2	Y	3	12	N	2.5
DT9	St Pauls Way (Beside Abbey Green Play Area)	Roadside	544128	183662	NO_2	Y	3	2	N	2.5
DT10	Glenny Road	Roadside	544385	184565	NO_2	Y	3	2	N	2.5
DT11	209 New Road (A1306)	Roadside	549832	183208	NO_2	Y	5	2	N	2.5
DT12	40 – 38 Thames Road	Roadside	546501	182713	NO_2	Y	5	2	N	2.5
DT13	2 Choats Road	Roadside	547081	183053	NO_2	Y	5	2	N	2.5
DT14	High Road (Chadwell Health) A118	Roadside	548065	187998	NO_2	Y	5	2	N	2.5
DT15	102 Renwick Road	Roadside	546935	183135	NO_2	Y	6	2	N	2.5
DT16	1 River Road	Roadside	545296	183204	NO_2	Y	5	2	N	2.5
DT17	95 Bastable Avenue	Roadside	545842	183144	NO_2	Y	5	2	N	2.5
DT18	463 Lodge Avenue	Roadside	546415	183717	NO_2	Y	5	2	N	2.5
DT19	835a Longbridge Road (A124)	Roadside	546744	185774	NO_2	Y	5	2	N	2.5
DT20	1 Althorne Way/ Wood Lane (A124)	Roadside	549173	186755	NO_2	Y	3	1	N	2.5
DT21	217 Whalebone Lane South (A1112)	Roadside	548733	187586	NO_2	Y	6	2	N	2.5
DT22	1249 Chequers Lane	Roadside	549078	183327	NO_2	Y	6	1	N	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
DT23	623 Rainham Road South	Roadside	550263	184902	NO_2	Y	5	2	N	2.5
DT24	Cook Road	Roadside	548487	183557	NO_2	Y	20	2	N	2.5
DT25	61 King Edward's Road (Adjacent to A13)	Roadside	544699	183650	NO_2	Y	6	1	N	2.5
DT26	251 Valence Avenue	Roadside	547762	186888	NO_2	Y	5	1	N	2.5
DT27	145 Fanshawe Avenue	Roadside	544339	184702	NO_2	Y	5	1	N	2.5
DT28	102 Maplestead Road	Roadside	546731	183684	NO_2	Y	5	1	N	2.5
DT29	143 Grafton Road	Roadside	548422	186431	NO_2	Y	2	5	N	2.5
DT30	947 Longbridge Road	Roadside	544631	184553	NO_2	Y	3	1	N	2.5
DT31	St Vincent's Catholic Primary School	Roadside	547209	186599	NO_2	Y	10	1	N	2.5
DT32	Opposite 131 Upney Lane	Roadside	545942	184073	NO_2	Y	10	2	N	2.5
DT33	196 Longbridge Road	Roadside	545124	184935	NO_2	Y	7	2	N	2.5
DT34	150 London Road (Opposite Shell Petrol Station)	Roadside	543867	184106	NO_2	Y	2	1	N	2.5
DT35	29 London Road	Roadside	544206	184158	NO_2	Y	5	1	N	2.5
DT36	39 Alfred's Gardens	Roadside	545536	183446	NO_2	Y	5	1	N	2.5
DT37	Gascoigne Wharf, Alfreds Way, (Opposite Bestway)	Roadside	544667	183104	NO_2	Y	5	1	N	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
DT38	6 William Hope Close	Background	545495	183310	NO_2	Y	10	N/A	N	2.5
DT39	308 Lodge Avenue	Roadside	546618	184605	NO_2	Y	8	1	N	2.5
DT40	91 Markyate Road	Roadside	546968	185087	NO_2	Y	6	1	N	2.5
DT41	Goresbroook School, Cook Road	Roadside	548056	183606	NO_2	Y	10	2	N	2.5
DT42	60 Arnold Road	Roadside	548974	184041	NO_2	Y	5	2	N	2.5
DT43	Connections, Shankar Road, House of Faith	Roadside	549537	183284	NO_2	Y	10	2	N	2.5
DT44	Leys Infants School, 9 Leys Avenue	Roadside	550508	184123	NO_2	Y	7	2	N	2.5
DT45	463 Rainham Road South	Roadside	550289	184928	NO_2	Y	8	1	N	2.5
DT46	116 Alibon Road	Roadside	548935	185402	NO_2	Y	7	2	N	2.5
DT47	830 Dagenham Road	Roadside	550002	185912	NO_2	Y	8	1	N	2.5
DT48	65 Marston Avenue	Roadside	549154	186114	NO_2	Y	6	1	N	2.5

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.

1.2 Comparison of Monitoring Results with AQOs

Concentration values are those at the location of the monitoring site (bias adjusted and annualised, as required), not those following any fall-off with distance correction.

Table D. Annual Mean NO_2 Monitoring Results: Automatic Monitoring (µg/m^3)

Site ID	Site type	Valid data capture for monitoring period %[(a)]	Valid data capture 2023 %[(b)]	2017	2018	2019	2020	2021	2022	2023
(BG1)	Automatic	-	87	-	-	-	-	17	17	16
(BG2)	Automatic	-	97	-	-	-	-	20	21	18

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**.

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**.

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%.

Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

(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%).

At both (LBBD) automatic monitoring station, the NO_2 trend remains steady in the last three years whilst also continued to fall in concentration in the last two years.

Table E. Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring ($\mu g/m^3$)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2017	2018	2019	2020	2021	2022	2023
DT1	544793	183783	Roadside	-	100.0	-	-	-	28.5	30.05	29.76	27.1
DT2	545032	183193	Roadside	-	100.0	-	-	-	26.7	28.88	24.07	23.2
DT3	547806	183543	Roadside	-	100.0	-	-	-	29.0	30.88	28.63	26.8
DT4	549035	184813	Roadside	-	100.0	-	-	-	37.3	**41.65**	39.57	38.7
DT5	547789	185792	Roadside	-	100.0	-	-	-	31.1	38.94	35.12	31.0
DT6a	551057	187231	Urban Background	-	100.0	-	-	-	19.8	17.11	13.58	13.4
DT6b	551057	187231	Urban Background	-	100.0	-	-	-	19.8	18.01	13.47	13.3
DT6c	551057	187231	Urban Background	-	91.7	-	-	-	19.8	15.18	13.50	13.1
DT7	548544	188125	Roadside	-	100.0	-	-	-	29.8	34.35	30.80	27.5
DT8	548359	189057	Roadside	-	100.0	-	-	-	26.8	31.68	27.69	25.3
DT9	544128	183662	Roadside	-	91.7	-	-	-	-	28.88	27.00	24.3
DT10	544385	184565	Roadside	-	100.0	-	-	-	-	25.91	24.47	23.8
DT11	549832	183208	Roadside	-	91.7	-	-	-	-	31.34	28.08	27.1
DT12	546501	182713	Roadside	-	91.7	-	-	-	-	26.51	23.40	24.4
DT13	547081	183053	Roadside	-	100.0	-	-	-	-	28.66	21.69	20.2
DT14	548065	187998	Roadside	-	100.0	-	-	-	-	32.02	32.98	33.2
DT15	546935	183135	Roadside	-	91.7	-	-	-	-	28.25	21.64	20.5
DT16	545296	183204	Roadside	-	100.0	-	-	-	-	34.63	34.86	30.9
DT17	545842	183144	Roadside	-	100.0	-	-	-	-	25.63	23.32	20.9

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2017	2018	2019	2020	2021	2022	2023
DT18	546415	183717	Roadside	-	100.0	-	-	-	-	39.09	36.83	34.4
DT19	546744	185774	Roadside	-	100.0	-	-	-	-	38.98	29.53	27.2
DT20	549173	186755	Roadside	-	100.0	-	-	-	-	27.02	25.97	27.0
DT21	548733	187586	Roadside	-	100.0	-	-	-	-	37.00	35.83	31.5
DT22	549078	183327	Roadside	-	100.0	-	-	-	-	20.59	21.76	20.0
DT23	550263	184902	Roadside	-	100.0	-	-	-	-	35.18	32.78	30.1
DT24	548487	183557	Roadside	-	83.3	-	-	-	-	31.46	32.87	30.8
DT25	544699	183650	Roadside	-	100.0	-	-	-	-	39.66	37.49	35.4
DT26	547762	186888	Roadside	-	100.0	-	-	-	-	32.76	28.07	27.3
DT27	544339	184702	Roadside	-	100.0	-	-	-	-	32.61	29.25	26.6
DT28	546731	183684	Roadside	-	100.0	-	-	-	-	31.91	30.79	29.0
DT29	548422	186431	Roadside	50.0	-	-	-	-	-	-	-	18.4
DT30	544631	184553	Roadside	50.0	-	-	-	-	-	-	-	24.5
DT31	547209	186599	Roadside	41.7	-	-	-	-	-	-	-	19.4
DT32	545942	184073	Roadside	50.0	-	-	-	-	-	-	-	24.4
DT33	545124	184935	Roadside	50.0	-	-	-	-	-	-	-	23.5
DT34	543867	184106	Roadside	50.0	-	-	-	-	-	-	-	37.7
DT35	544206	184158	Roadside	41.7	-	-	-	-	-	-	-	32.1
DT36	545536	183446	Roadside	50.0	-	-	-	-	-	-	-	27.3
DT37	544667	183104	Roadside	50.0	-	-	-	-	-	-	-	29.2
DT38	545495	183310	Urban Background	50.0	-	-	-	-	-	-	-	22.8
DT39	546618	184605	Roadside	50.0	-	-	-	-	-	-	-	29.9
DT40	546968	185087	Roadside	41.7	-	-	-	-	-	-	-	19.7
DT41	548056	183606	Roadside	50.0	-	-	-	-	-	-	-	31.9
DT42	548974	184041	Roadside	50.0	-	-	-	-	-	-	-	21.0

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2017	2018	2019	2020	2021	2022	2023
DT43	549537	183284	Roadside	50.0	-	-	-	-	-	-	-	25.7
DT44	550508	184123	Roadside	50.0	-	-	-	-	-	-	-	19.6
DT45	550289	184928	Roadside	50.0	-	-	-	-	-	-	-	23.9
DT46	548935	185402	Roadside	50.0	-	-	-	-	-	-	-	22.3
DT47	550002	185912	Roadside	50.0	-	-	-	-	-	-	-	30.4
DT48	549154	186114	Roadside	41.7	-	-	-	-	-	-	-	19.6

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LLAQM.TG19.**

☒ **Diffusion tube data has been bias adjusted.**

☒ **Reported concentrations are those at the location of the monitoring site (bias adjusted and annualised, as required), i.e. prior to any fall-off with distance correction.**

Notes:

The annual mean concentrations are presented as.

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean 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%.

Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

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

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Neither of the two automatic monitoring stations exceeds the annual AQ objectives of 40 µg m-3 but exceeded the WHO guidelines of 10 µg m-3. Therefore, the annual objective has been achieved but the WHO guidelines has not been met. The hourly NO_2 objective was achieved at both monitoring locations.

All the diffusion tube results have been appropriately bias adjusted, using the Gradko Environmental national adjustment factors. Exceedances of the annual AQ objective of 40 µg m-3 is highlighted in bold. None of the passive monitoring locations (diffusion tubes) exceed the air quality objective but the Dagenham Heathway (DT4) was very close to the annual air quality objective. However, all the passive monitoring locations (diffusion tubes) exceed the WHO guidelines.

At all the (LBBD) 28 previous passive monitoring locations between 2021 – 2023, the NO_2 trend remains steady in the last three years whilst also continued to fall in concentration in the last two years. Only 4 monitoring locations increased in concentration between 2021 – 2022 i.e. (DT14, DT16, DT22 and DT24) but between 2022 – 2023, this was down to three which are (DT12, DT14 and DT20).

Most of 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 (22).

Table F. 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 2023 %([b])	2017	2018	2019	2020	2021	2022	2023
(BG1)	Automatic	87	0	0	0	0	0	0	0
(BG2)	Automatic	97	0	0	0	0	0	0	0

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%).

Table F shows that there have been no exceedances of the hourly NO_2 objective in 2023 whilst this has remain consistent at 0 in the last seven years.

The 2023 annual Mean NO_2 Concentration in the London Borough of Barking and Dagenham is attached to this report (Appendix B).

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

Site ID	Valid data capture for monitoring period %(a)	Valid data capture 2023 %(b)	2017	2018	2019	2020	2021	2022	2023
(BG2)	-	72	20	19	18	18	18	18	17

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%.

(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 is no exceedance of the annual PM_{10} objective in 2023 but the WHO guidelines annual mean of 15 µg m-3 was exceeded.

The PM_{10} trend remains steady in the last seven years whilst also continued to fall in concentration in the last five years.

Table H. 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 2023 %[(b)]	2017	2018	2019	2020	2021	2022	2023
(BG2)	-	72	4	0	6	3	2	2	2

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%).

The 24-hour mean AQ objective was not exceeded in 2023 and the WHO guidelines of 45 µg m-3 of not more than 3-4 times a year was not exceeded either.

Table I. 2023 SO_2 Automatic Monitoring Results: Comparison with Objectives

Site ID	Valid data capture for monitoring period %[(a)]	Valid data capture 2023 %[(b)]	Number of 15-minute means > 266 µg m^{-3}	Number of 1-hour mean > 350 µg m^{-3}	Number 24-hour mean > 125 µg m^{-3}
(BG1)	-	84	0	0	0

Notes

Results are presented as the number of instances where monitored concentrations are greater than the objective concentration.

Exceedances of the SO_2 objectives are shown in **bold** (15-min mean = 35 allowed a year, 1-hour mean = 24 allowed a year, 24-hour mean = 3 allowed a year).

If the period of valid data is less than 85%, the relevant percentiles are 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%).

None of the SO_2 objectives were exceeded for the year 2023. The WHO guidelines was not exceeded either.

2. Action 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 should prepare an Air Quality Action Plan (AQAP) within 12 months. The AQAP should specify how air quality targets will be achieved and maintained and provide dates by which measures will be carried out.

A summary of AQMAs declared by London Borough of Barking and Dagenham can be found in Table J. The table presents a description of the 2 AQMA(s) that are currently designated within an area encompassing the whole London Borough of Barking and Dagenham with unspecified road transport as its major source declared 16th December 2008. Appendix C provides maps of AQMA(s) and the air quality monitoring locations in relation to the AQMA(s). The air quality objectives pertinent to the current AQMA designation(s) for the two pollutants are as follows:

- 200 µg m-3 not to be exceeded more than 18 times a year for 1-hour mean and 40 µg m-3 Annual mean for NO_2.
- 50 µg m-3 not to be exceeded more than 35 times a year for PM_{10} 24-hour mean.

Table J. Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance : Declaration	Level of Exceedance : Current Year	Number of Years Compliant with Air Quality Objective	Name and Date of AQAP Publication	Web Link to AQAP
Nitrogen dioxide (NO_2)	Declared 16th December 2008	200 µg m-3 not to be exceeded more than 18 times a year for 1-hour mean and 40 µg m-3 Annual mean for NO_2.	An area encompassing the whole borough.	Unspecified	71.8	38.7	12 years	AQAP for AQMA, 2020 - 2025	https://www.lbbd.gov.uk/community-safety-and-crime/make-report/report-air-quality-issues
Particles (PM10)	Declared 16th December 2008	50 µg m-3 not to be exceeded more than 35 times a year for PM10 24-hour mean.	An area encompassing the whole borough.	Unspecified	44	2	12 years	AQAP for AQMA, 2020 - 2025	https://www.lbbd.gov.uk/community-safety-and-crime/make-report/report-air-quality-issues

☒ **London Borough of Barking and Dagenham confirm the information on UK-Air regarding their AQMA(s) is up to date.**

☒ **London Borough of Barking and Dagenham confirm that all current AQAPs have been submitted to GLA.**

2.2 Air Quality Action Plan Progress

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

Table K. Delivery of Air Quality Action Plan Measures

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
1	Monitoring and core statutory duties	Maintain the borough's monitoring network, and add an additional 20 diffusion tubes	• In addition to the existing 30 NOx Diffusion Tubes in our last monitoring report, 20 additional NOx tubes were added from July 2023 and in the year 2023, we were able again to have a full year monitoring data with 100% data capture at twenty two of the twenty-eight monitoring locations, 91.7% at five locations and 83.3% at one of the locations. For the new additional 20 monitoring locations started in July 2023, we have 50% data capture at sixteen of the monitoring locations and 41.7% data capture at the remaining four monitoring locations.
2	Monitoring and core statutory duties	Work with and support relative emerging AQ monitoring projects to integrate new/modern monitoring techniques, including the £1m C40 project delivered in partnership with the GLA.	• In 2023 the council was fully involved in publicising the free air quality sensors for communities: Breathe London Communities Programme Round 3. The programme which provides 20 fully funded air quality sensors to community groups, as part of the Breath London network. The Council advertise this opportunity to our communities through our various available comms channels, e.g. residents' newsletters, social media as well as through the borough website etc. and leaving the flyer in places such as libraries and community sensors to expand the reach.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			• The Council also begin to publicise and promote its project – Community Air Quality: Breathing in Barking and Dagenham running with the help of Imperial College. This was done through the social media spaces to promote the project, gather interest and get more involvement wherever possible. The project was also publicised through press release, newsletter copy, facebook, twitter and LinkedIn post. https://bd.communityairquality.com/
3	Monitoring and core statutory duties	IPPC duties and inspections under the Environmental Permitting Regulations 2010	• The council continue to deliver its statutory obligations regarding this action. • Annual data statistical return on environmental permitting functions returned to Defra including number of permitted processes (A2, Schedule 13 and Part B processes) in 2023.
4	Emissions from developments and buildings	Raising awareness of and enforce the borough's Smoke Control Zone (SCZ). To include: an awareness campaign using Communications Team media platforms and active enforcement	• Our enforcement officers continue to investigate complaint of smoke nuisance and. • In 2023 the Council was in communication with the London Port Health Authority (City of London Corporation) as regards including permanent moorings within its existing SCA.
5	Emissions from developments and buildings	Ensuring emissions from construction are minimised. All major developments must carry out an Air Quality Assessment in accordance with the GLA's guidance	• 100% of major planning applications adjoined with AQ. assessments, or conditioned gained through local policy mechanism.
6	Emissions from developments and buildings	Include Greater London Authority (GLA) guidance on environmental and construction best practices into BeFirst/LBBD and other major developments	• All major planning applications conditioned with GLA best practice guidance in 2023. • The Draft Local Plan requires development to submit a Construction Management Plan to mitigate the adverse effects of construction. Be First published their public realm guidelines for new developments in 2020, and planning applications are required to meet guidance through conditions or legal obligations also in 2023.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			• Design Team use BIM & MMC to deliver to borough's 2030 net zero objectives.
7	Emissions from development and building	Ensuring enforcement of non-road mobile machinery (NRMM) air quality policies. Include NRMM requirements within local planning guidance. Planning conditions imposed asking for NRMM compliance for all relevant major developments.	• NRMM is part of the Local Plan included into Regulation 19. All relevant planning applications in 2023 include NRMM conditions with 28 of the sites in the borough also registered on GLA NRMM website for the year. • Of the 21 sites audited for NRMM in 2023, 18 of the sites were compliant whilst 1 was not and there is no NRMM at the other 2 sites. • Policy DMSI 4 of the Draft Local Plan states the whole borough is an air quality management area, which requires the appropriate use of plant machinery and technology. Relevant planning applications include NRMM conditions.
8	Emissions from development and building	Reducing emissions from Combined heat and power (CHP) by ensuring that air quality as well as carbon emissions are considered when assessing planning applications or where existing schemes require new or upgraded heat sources	• We continue to maintain the register of CHPs plant within the borough.
9	Emissions from development and building	Enforce the GLA 'Air Quality Neutral' (AQN) policy or any preceding changes to this regional measure to all major developments	• In 2023, all the major planning applications meet GLA policy on AQN.
10	Emissions from development and building	Ensuring adequate appropriate, and well-located green space and infrastructure is included in new large-scale developments	• In 2023, Thames Road /Crossness development incorporates local green spaces as part of the movement strategy whilst, • Barking Riverside has created The Wilds eco park as a green space.
11	Emissions from developments and buildings	Ensure that planning and development teams implement policies on Healthy Streets at an early stage for larger developments (as defined by the GLA)	• In 2023, Thames Road redevelopment is using the Healthy Streets principles to create a healthy street with active travel connections. • Proposals for Valence Avenue, Dagenham Road include Healthy Streets principals.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
12	Emissions from developments and buildings	Promoting and delivering energy efficiency and energy supply retrofitting projects in workplaces and homes through retrofit programmes such as Retrofit Accelerator and Cosy Homes. LBBD to be zero carbon from Council operations (e.g., housing and fleet) by 2030, and zero carbon Borough wide by 2050	• The Council has adopted its Zero Carbon Roadmap and Climate Change Action Plan whilst, many of the workstreams mentioned in it are currently under way. • The Cosy Homes scheme with EON have continued to delivered energy efficiency measures, such as loft, cavity and external insulation and solar panels to almost 2,000 homes between 2020/22, across tenure, saving more than 15tCO2e. This was largely funded by ECO3 and Green Homes Grant. • The Council is now working with EON to deliver additional insulation and energy conservation measures to 350 properties through Green Homes Grant LAD3 and has launched its next iteration of Cosy Homes delivering installs under ECO4 and the Great British Insulation Scheme. • Deep retrofit pilots have begun on the Becontree Estate, funded in part by Social Housing Decarbonisation Demonstrator Fund, with 3 completed and 17 more underway. • The Council have contracted to deliver Phase 1 of the Corporate Estate Retrofit Programme which will deploy ECMs across 15 of the most energy consuming buildings in the Council's buildings portfolio. This is expected to commence in June 2023.
13	Emissions from developments and buildings	Improve air quality in the Borough by delivering improvements to reduce building emissions and increase uptake of Decentralised Energy Networks	• The council continues to work towards reducing emission from new development by ensuring relevant conditions are recommend at the planning stage as well as ensuring energy efficient measures are adopted for the site energy source. Installation of biomass is discouraged whilst the use of solar panel and Air Source Heat pump are encouraged.
14	Emissions from developments and buildings	Participate in the Pan-London Non-Road Mobile Machinery registration campaign in conjunction with lead Borough (London	• We continue to maintain our membership of Pan-London Non-Road Mobile Machinery registration campaign.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		Borough of Merton), to reduce emissions from construction vehicles in line with GLA guidance.	• Of the 21 sites audited for NRMM in 2023, 18 of the sites were compliant whilst 1 was not and there is no NRMM at the other 2 sites.
15	Public health and awareness raising	Public Health department taking shared responsibility for borough air quality issues and implementation of Air Quality Action Plan. 11a, Directors of Public Health (DPHs) regularly briefed on the scale of the problem in their area. 11b, DPHs incorporate up to date air quality information in their Joint Strategic Needs Assessment 11c, Air Quality Action Plans are formally signed off by the DPH. 11d, At least one Consultant grade public health specialist with air quality responsibilities in their job profile	• Our colleagues in Public Health continue to deliver on their aspect of the AQAP in 2023. • In 2023 the council was fully involved in publicising the free air quality sensors for communities: Breathe London Communities Programme Round 3. The programme which provides 20 fully funded air quality sensors to community groups, as part of the Breath London network. The Council advertise this opportunity to our communities through our various available comms channels, e.g. residents' newsletters, social media as well as through the borough website etc. and leaving the flyer in places such as libraries and community sensors to expand the reach. • The Council also begin to publicise and promote its on-going project – Community Air Quality: Breathing in Barking and Dagenham running with the help of Imperial College. This was done through the social media spaces to promote the project, gather interest and get more involvement wherever possible. The project was also publicised through press release, newsletter copy, facebook, twitter and LinkedIn post. https://bd.communityairquality.com/
16	Public health and awareness raising	Engage with local businesses and support access to business-specific funding schemes which promote, sustainable transport, collaborative delivery and low emission procurement practices through business forums and newsletters distribution.	• The council continuing to engage with businesses on how to improve the local AQ as agreed in the council AQAP.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
17	Public health and awareness raising	Develop and implement a communications strategy to disseminate air quality information to raise awareness and encourage behaviour change – may include, messages to residents with heart and lung diseases (working in partnership with local NHS services). E.g., re publicising the Mayor's pollution alerts, promotion of active travel/sustainable transport, green home grants and anti-idling messages etc.	• Clean Air Day disseminated via Comms in 2023. • Assist in promoting the clean air day through our comms team by council-wide email regarding the day as well as its launch in the Reg Services Newsletter. • We were also involved in its publicity through community engagement by having a stand in the market on the day. • We also engage our education service and schools to take part.
18	Public health and awareness raising	Encourage schools to join the TfL STARS accredited travel planning programme. Promotes sustainable approach to active travel therefore reducing vehicle emissions and increasing physical activity.	• In 2023, we have 32 schools engaged/working towards accreditation, 4 Gold accredited and 1 bronze accredited submission.
19	Public health and awareness raising	Air quality in and around schools: Apply to the funding made available through TfL for LIPs to deliver the recommendations from the 'school streets.	• Be First continues to conduct consultation on all schemes and has monitored the operation of the School Streets in place. • New School Streets are implemented on an experimental basis, and residents will have six months to give their views on the School Streets. • Two additional schemes were launched in 2023 - 2024. • Five schemes to be launch in 2024 - 2025 (delivery delayed due to procurement of new camera supplier in 2023 - 2024) • Programme expected to continue indefinitely, subject to funding.
20	Public Health and awareness raising	Use council lobbying power to increase/encourage local and regional action using a health in all policies approach.	• Environmental Health contributed to, and supported, the lobbying work undertaken by the East London AQ Cluster Group in response to the proposed changes consulted on within the Environment Bill, 2020 and has continue to do so in 2023.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		Lobbying within the BHR and NEL partnerships (including NHS and LA) to encourage other partners to consider measures to improve air quality – including their staff, residents, in their procurements and their in-house services. Lobby and work with TFL to reduce NO_2 & PM emissions from buses in LBBD, and to reduce air quality concentrations from TfL regulated roads.	
21	Public Health and Awareness Raising	Submit responses to relevant government and regional consultations – ensure responses focus on reducing emissions of local air pollutants and CO2.	• In 2023, The team participated in various stakeholders meeting to discuss issues relevant to local air quality.
22	Public Health and Awareness Raising	Continued implementation of the Barking Riverside Travel Plan, to accelerate uptake of cycling walking and sustainable transport.	• As part of the Section 106 Agreement - The Travel Plan has been refreshed dated July 2023 and approved on 17th October 2023. • This update provides an opportunity to review the measures and initiatives that have been implemented on site as part of the FTP dated 2016 and re-focus the plan to target further improvements that aim to achieve aspirational mode shares towards sustainable options.
23	Public Health and Awareness Raising	Prepare and deliver Council-wide (LBBD) and BeFirst Travel Plans encouraging sustainable transport modes for staff and visitors.	• Be First Travel Plan is currently being developed. LBBD Travel Plan to follow
24	Public Health and Awareness Raising	Deliver the 'Ways of Working' (LBBD Staff) Travel to Work Plan and implement deliverables for staff to travel more sustainably and safely (in response to Covid19)	• Ways of Working Travel plan still ongoing.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
25	Delivery servicing and freight	Review of the process documentation templates (procurement strategy document, delegated authority documents and award contract documents) to include air quality requirements for reducing vehicle emissions.	• This measure is still on-going following the AQAP adoption in February 2021.
26	Delivery servicing and freight	Review, implementation, and approval of the 'contract rules' in tandem with Council legal department with a view to adding air quality requirements for reducing vehicle emissions.	• This measure is still on-going following the AQAP adoption in February 2021.
27	Delivery servicing and freight	Reducing emissions from deliveries to local businesses and residents. Work with and support TfL to install rapid electric vehicle charging points to encourage low emission vehicles.	• We secure on-site ECVP points on major applications in 2023.
28	Borough Fleet	Reducing emissions from council fleet. Undertake 'Grey' Fleet review with Energy Saving Trust to inform future vehicle choice and infrastructure	• Regarding the grey fleet, a review was undertaken by EST in 2020 and the Council's policies are being reviewed to follow their recommendations.
29	Borough Fleet	Investigate the feasibility of, and implement the best environmentally performing, alternative fleet vehicle fuel (e.g., Hydrogen, Electric, Gas-to Liquid)	• The EV plans were scrapped along with the procurement of the vehicles. • Cost was the main issue with the installation of the infrastructure not being the most straightforward. Cabinet rejected the proposals because of the council's financial situation. • The current fleet plans are due to be drawn up but will be conservative and unlikely to include Electric vehicles for the next few years.
30	Borough Fleet	Undertake an infrastructure and operational review for the Council fleet depot land space charging in the Borough to	• The EV plans were scrapped along with the procurement of the vehicles.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		incentivise EV charging uptake at the workplace	• Cost was the main issue with the installation of the infrastructure not being the most straightforward. Cabinet rejected the proposals because of the council's financial situation. • The current fleet plans are due to be drawn up but will be conservative and unlikely to include Electric vehicles for the next few years.
31	Borough Fleet	Undertake annual fleet audits with a vehicle replacement programme to show continued progress in phasing out older and more polluting vehicles by 2030	• The EV plans had been scrapped along with the procurement of the vehicles. However, as of December 2023, the council have 9 Electric Vehicles in its fleet.
32	Borough Fleet	Complete an industry-recognised fleet driver training programme (e.g., Freight Transport Association) to improve driver/vehicle operations and reduce fleet emissions	• In January 2021 Fleet services undertook anti-idling training in conjunction with the pan-London (anti idling) scheme led by Camden – Nothing further.
33	Borough Fleet	25% of total fleet vehicles to be fully electrified (Battery Electric Vehicle) by 2025. Long term target to have Council operations zero carbon by 2030 including fleet vehicles being zero tailpipe emission or as close as possible to zero tailpipe emissions using Best Available Technology.	• The EV plans had been scrapped along with the procurement of the vehicles.
34	Localised Solutions	19a) Implement the published Green Infrastructure Strategy. 19b) Apply for Green Space Grants / Community Tree Planting 19c) Develop and implement a tree planting delivery programme which strategically targets high pollution areas (roads) where feasible	• **As regards action19a:** Parks Commissioning is responsible for delivering the borough's Parks and Green Spaces Strategy (POSS) and associated Action Plan which in turn supports the implementation of the borough's GI and Biodiversity Strategy. • In 2023 funding was identified to support a review/refresh of the Borough's POSS. This work, which was commissioned in February 2024, will ensure that the strategy continues to be relevant, remains focused on addressing current issues and

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			challenges, and includes an emphasis on climate change mitigation and adaptation, planting resilient, carbon absorbing species. • In addition to the ongoing delivery of flagship park development projects such as the Central Park Master Plan Soil Importation scheme and the Parloes Park Parklife/Bobby Moore Community Hub Parks Commissioning (Ranger Service) has delivered a diverse range of smaller scale park improvement projects. The projects delivered in the Dagenham Corridor by the Ranger Service in 2023 include: o Rewild London Funding of £39,000 to improve the habitat of the **Slack Bird Sanctury** on the Chase LNR. o Additional funding from the Rewild London Fund (£39,000) enabled us to carry out a **Reptile and Amphibian Survey** in the Dagenham Corridor at the Beam Parklands (in partnership with the Land Trust), Beam Valley Country Park, Eastbrookend Country park and the Chase LNR. The funding has also paid for some habitat improvements. Reptiles were surveyed using reptile mats and direct identification. Amphibians were surveyed using night-time torchlight surveys and eDNA water testing. Local volunteers and wildlife enthusiasts were trained in reptile ID and helped to collect data for the survey. Will Atkins, LEHART, advised throughout the project and led the torchlight surveys. Numerous amphibians and other creatures were found, but most exciting was a confirmation of Great Crested Newts – with an egg laying female even captured on camera.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			○ **Eastbrook end Forest School** lunched April 2023. We ran over 40 sessions of forest school this year, reaching over 500 children. Weekly forest schools ○ The Forest School was set up in addition to the regular Ranger-led curriculum-based education sessions that we deliver for local schools. In 2023 the Rangers had ~40 visits from 18 different schools - adding up to over 1000 children and more than 200 adults learning about the park's nature and wildlife. Not to mention several other schools who brought around 750 children to the parks for end of term self-led visits. It has been a very busy year! Many sessions were offered for FREE to local families through a successful partnership and generous support from BD Money. ○ In 2023, through external fundings and development of successful partnerships (i.e., with Thames 21, EU Research Unit for rewilding, The Land Trust, London Essex Hertfordshire Essex Amphibian and Reptiles) we ran a series of **free wildlife courses** and training in the spring and summer with experts from the charity LEHART and Essex Wildlife Trust - including both classroom presentations and practical sessions. ○ This year the LBBD Ranger Service collaborated with the Land Trust's 'Green Angels' and Essex Wildlife Trust to run a series of fascinating **Wildlife ID training sessions and nature walks**, including an early morning bird walk and an evening bat walk. ○ The first year of **ecological monitoring** has been completed on the Rom rewilding site by researchers from the Fondazione Edmund Mach in Trentino, Italy, as part

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			of a European project seeking to understand how rewilding can be implemented to reduce public health risks. The project will run for 5 years, and The Chase LNR is one of 11 located around Europe, from Sweden to Italy. • **As regards action 19b:** Tree planting delivered by Parks Commissioning in 2023 included the following schemes: • **Old Dagenham Park – LUF 'Heart of the Community Project:** to top up/replace the 2022 tree planting (i.e., 1,975 x whips & 20 x standards) a further 1,200 x whips and 4 x standards were planting in 2023. • **Miyawaki Forests:** planted at Old Dagenham Park and Eastbrook end Country Park (c4,200 native trees). • **Central Park Master Plan:** c113 trees planted as part of the delivery of the overall master plan works. • **Total trees planted in 2023:** c5,517 trees planted because of schemes commissioning and supported by Parks Commissioning. • **As regards action 19c:** Parks Commissioning's remit is focused on the borough's parks and green spaces. However, whilst we haven't specifically delivered tree planting schemes which target high pollution areas (roads) we have delivered schemes which directly support this objective, and which will in due course will contribute to air quality improvements in areas adjacent parks. • The Council is committed to becoming a carbon neutral authority by 2030 and supporting the wider borough in becoming so by 2050. Therefore, in support of this above objective in September 2023 the Head of Head of Sustainability, Net Zero & Parks Commissioning appointed Thames Chase Trust and Viridis

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			Consultancy to develop and deliver appropriate schemes and obtain match-funding. This partnership will deliver/promote: (i) strategic and targeted spend focused on nature-based solutions for carbon storge such as tree-planting and habitat restoration; and; (ii) the allocation of resources to employ the expertise to develop and translate the site-specific schemes identified in the borough's POSS and Green Infrastructure and Biodiversity Strategy into specific deliverable projects.
35	Localised Solutions	Continue to embed green infrastructure into LIP schemes.	• In 2023, the council completed. • River Road to Crossness cycle scheme +1 tree planted as well as • Frizlands Lane - Bull Lane Road Safety scheme • Two hawthorn trees and 150 lavender plants in new green verge.
36	Localised Solutions	Low Emission Neighbourhood (LEN): Continue to implement and project manage the TfL-funded 'Greening the Fiddlers' LEN in Becontree Heath, Dagenham, in one of the GLA's Air Quality Focus Areas.	• With the LEN project finished summer 2022, the final tree planting at the Becontree Avenue shopping parade and on Stour Road occur during the 22-23 planting season. • As part of the legacy work, we launched the Biking Becontree Cycle Hub in 2023 that saw a weekly pop-up Dr Bike go semi-permanent and offer sessions three times a week.
37	Cleaner Transport	Ensuring that Transport and Air Quality policies and projects are integrated. 37a) Head of Transport should sign off AQAP. 37b) Transport officers to attend air quality steering groups.	• Transport Officers continues to attend the air quality steering group meetings and are a key stakeholder in delivering the AQAP. • BAG011 Lower Roding Crossing Strategic Outline Business Case will be strictly for public and active transport to reduce private car use.
38	Cleaner Transport	Use parking policy to reduce private use vehicle emissions by reviewing borough parking permit fee banding and implement a policy to incentivise lower emission	• New Permit charges based on emissions introduced 2020/21 continues.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		vehicles/ dis-incentivise higher emitting vehicles	
39	Cleaner Transport	Review parking policy to reduce the overall number of parking permits to single household/residential tenancy. (de-incentivise higher number of cars p/house)	• This is currently under review as part of Parking Strategy 2023-2030.
40	Cleaner Transport	Introduce a policy to charge commercial vehicles parking overnight and at weekends in borough roads to reduce congestion and discourage commercial vehicles.	• Charges approved by Cabinet but legal information regarding implementation needs further investigation regarding traffic orders, signage etc. – Nothing further since last update.
41	Cleaner Transport	Review staff parking permits and implement a policy or management process to significantly reduce overall numbers, with the aim to reduce 'grey fleet' impacts	• Staff permits were reviewed in 2022. – Nothing further since last update.
42	Cleaner Transport	Installation of Ultra-low Emission Vehicle (ULEV) infrastructure to encourage low emission vehicles. e.g. On-street Electric Vehicle Charging Points	• In 2023 Be First continuing to support the roll out of public EV charge points, which is being managed and delivered by Connected Kerb. Connected Kerb are currently in the process of applying for funding to implement 200 on-street charging points. • Be First will be running a campaign to ask residents to 'request a charge point', this will help Connected Kerb, Be First and LBBD to decide where to locate the EV charging points once funding is received. • Be First received 2024/2025 funding from the DfT for up to a sum of £34,200 to support capacity and capability in local authorities to create local EV infrastructure strategies and for the planning and delivery of local EV infrastructure.
43	Cleaner Transport	Require private developers to install Ultra-Low Emission Vehicle (ULEV) infrastructure as per the GLA London Plan for major residential and non-residential	• In 2023, the council continue to implement its ULEV infrastructure as required in the emerging Local Plan and as per existing planning policy.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		developments. E.g., electric vehicle charging points	• New developments have to install the required GLA London Plan EV charging points for any new on-site residential parking.
44	Cleaner Transport	Provision of infrastructure to support walking and cycling e.g., the development of key strategic cycle routes including Barking Station to Chadwell Heath Station, cycle route CFR10 Barking Riverside to Ilford (via Barking Town Centre) and Heathway to Becontree Heath. Potentially 'Liveable Neighbourhoods' ambition for the Becontree Estates subject to TfL funding.	• In 2023, the council continue to develop a new LBBD Cycling & Walking Strategy, which includes an indicative programme for infrastructure investment over the next 10 years to improve cycling & walking provision. • Biking Becontree Bike Hub, commenced in April 2023 with 128 sessions held. 1210 repairs made, 968 enquiries answered, 65 bikes sold, and 10232 online enquiries made. • For Dr Bike at Barking Station: April to December 2023 (9 sessions were held with 59 bikes checked, 18 bikes repaired with parts and 27 recorded enquiries). • For Dr Bike at The Town Hall Square: Jan to March 2024 (3 sessions were held). • Eight secure bike hangars were installed in 2023-24 with additional 13 planned for installation by the end of May 2024.
45	Cleaner Transport	Discourage unnecessary idling by road vehicles. Participate in the Pan-London Anti-Idling campaign/project in conjunction with the London Borough of Camden and proactively enforce regulations to reduce idling vehicles. Focus anti-idling at school sites/roads	• The council continue to involve in active participation in the Pan-London Anti-Idling campaign/project in conjunction with the London Borough of Camden. • With the council "Local Schools for Local Children" project; the council has been very successful in its Borough wide school expansion programme in 2023. • We are continuing to be in a position where school places are available much closer to home meaning that families will travel shorter distances to school as we hope this will encourage pupils to walk rather than be driven. • Some travel distances are down from 5km to 2km which is far more manageable. • Anti-idling information are continued to be shared with all schools with a view to onward sharing with families and carers.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			• Many schools are continuing to be keen to develop their own "School Street" which has a significant impact on neighbourhood air quality. • The BeFirst scheme continue to push car parking away from the school and encourages walking. • More schools have signed up and it should be noted that feedback from schools so far is not necessarily to do with the idling issue alone but also with success in controlling inconsiderate parking and dropping off at the school gates.
46	Cleaner Transport	Encourage behaviour change in transport modes to increase sustainable transport and decrease private car use: a) Campaigns to promote walking to school b) Campaigns to promote workplace travel plans	• Big Walk and Wheel took place in 2023 with six schools participated in 14,864 journeys. • 12320 walking/wheeling, 1641 scooting, 903 scooting. • WOW – The Walk to School Challenge took place in (Sept '23 - March '24) with 11 schools participated with an average of 46% of pupils engaged with the system. • Total # reported trips >254,000 trips to school (all travel modes) • >171,000 of which were walking or wheeling, • >34,000 Park and Stride • Almost 5000 cycling whilst. • Cycleway 42 between Barking Riverside and Ilford has been completed.
47	Cleaner Transport	Develop a long-term strategy for the A13 to help improve traffic congestion, improve air quality and enable sustainable growth. Require full Environmental Impacts Assessments (EIA's) for A13 development proposals including; replacement of the Lodge Avenue flyover by TfL.	• Be First are part of the Strategic Working Group with TfL to ensuring the A13 Lodge Avenue flyover replacement at Castle Green brings about public realm, walking and cycling improvements to the area. TfL and Barking and Dagenham, are looking to implement a Green Bridge over the A13. • Be First are working with the City of London and consultants to produce a Strategic Transport Masterplan for the City Markets Site at Dagenham Dock. Will explore the sustainable transport options for developing the area.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
48	Cleaner Transport	Work with the River Roding Trust (RRT), the Canal and River Trust or relevant bodies to raise awareness of local air pollution emissions from waterways. Engage with canal boat owners to promote sustainability, cleaner fuel burning and anti-idling to reduce emissions from boats. Two Boat Mooring sites in LBBD. 1) near Hertford Road and Gurney Close IG11 8JY (narrow boat moorings only) and, 2) (static) barge mooring only, near Barking Creek IG11 7BW (all electrically powered only).	• Series of stakeholders meeting (officers from East London cluster group) and other London local authorities with publication were implemented in 2023 to address this measure.
49	Cleaner Transport	1) Promote World Car-Free day (22nd September) through Communications Department 2) Explore gaining funding though the Greater London Authority Mayor's Air Quality Fund (or other funding source) to promote car free days in LBBD streets Explore allowing residents to apply for 'Play Streets' or similar that allow streets/roads to be closed from traffic and encourage community engagement	• Be First continuing to monitor and apply for funding opportunities, however the number of funding opportunities in the last three years have been fewer.

3. Planning Update and Other New Sources of Emissions

Table L. Planning requirements met by planning applications in London Borough of Barking and Dagenham in 2023

Condition	Number
Number of planning applications where an air quality impact assessment was reviewed for air quality impacts	18
Number of planning applications required to monitor for construction dust	7
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	0
Number of developments required to install Ultra-Low NO_X boilers	1
Number of developments where an AQ Neutral building and/or transport assessments undertaken	18
Number of developments where the AQ Neutral building and/or transport assessments not meeting the benchmark and so required to include additional mitigation	0
Number of planning applications with S106 agreements including other requirements to improve air quality	3
Number of planning applications with CIL payments that include a contribution to improve air quality	0
NRMM: Central Activity Zone, Canary Wharf and Opportunity Areas Number of conditions related to NRMM included. Number of developments registered and compliant. Number of audits % of sites unregistered prior to audit 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 IV of the Directive and/or exemptions to the policy.	N/A
NRMM: Greater London (excluding Central Activity Zone, Canary Wharf and Opportunity Areas) Number of conditions related to NRMM included. Number of developments registered and compliant. Number of audits % of sites unregistered prior to audit 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 IIIB of the Directive and/or exemptions to the policy.	2 Whilst there are 28 sites in the borough registered on GLA NRMM website for the year, 21 of the sites were audited for NRMM in 2023, out of which18 of the sites were compliant whilst 1 was not and there is no NRMM at the other 2 sites.

Records of the above information on planning applications are kept in the London Borough of Barking and Dagenham internal database called Flare. This is also duplicated in the Environmental Protection Team planning folder for officers' comments and recommendations.

The council received 18 major planning applications that required AQ assessment in 2023. The NRMM record is from the annual 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 Barking and Dagenham Fleet

The London Borough of Barking and Dagenham will like to confirm that, of the 324-council fleet as of December 2023, eight of these are electric van and one of this is a hybrid car representing 2.7% of the overall fleet that are of a) zero emission and b) zero emission capable vehicles.

4.2 NRMM Enforcement Project

We can confirm that London Borough of Barking and Dagenham will continue to support the NRMM Enforcement project in 2024 – 2025.

The standard wording use for NRMM conditions on construction/demolition sites are:

- **Non-Road Mobile Machinery- standard condition**

a. No works shall commence on the site until all plant and machinery to be used at the demolition and construction phases have been submitted to, and approved in writing by, the LPA. Evidence is required to meet Stage IIIB of EU Directive 97/68/EC for both NOx and PM. No works shall be carried out on site until all Non-Road Mobile Machinery (NRMM) and plant to be used on the site of net power between 37kW and 560 kW has been registered at http://nrmm.london/. Proof of registration must be submitted to the LPA prior to the commencement of any works on site.

b. An inventory of all NRMM must be kept on site during the course of the demolitions, site preparation and construction phases. All machinery should be regularly serviced, and service logs kept on site for inspection. Records should be kept on site which details proof of emission limits for all equipment. This documentation should be made available to local authority officers as required until development completion.

Reason**:** To protect local air quality and comply with Policy 7.14 of the London Plan and the GLA NRMM LEZ

- The NRMM condition is normally apply in the decision notice and this is,
- Applicable to all relevant sites.

4.2 Air Quality Alerts

We can confirm that London Borough of Barking and Dagenham did not sign up for *air*TEXT, but its AQ direct alerts service can be accessed through the UK-AIR available through the link below on our website.

https://uk-air.defra.gov.uk/forecasting/locations?q=barking%20and%20dagenham

Appendix A Details of Monitoring Site Quality QA/QC

A.1 Automatic Monitoring Sites

In 2023, The automatic monitoring sites routine calibrations were undertaken by Enviro Technology for the full year monthly whilst LSO duties, Audits and service/upkeep/maintenance was also contracted to the same company (Enviro Technology).

PM_{10} Monitoring Adjustment

No PM_{10} monitoring adjustment was done in 2023.

A.2 Diffusion Tubes

• Gradko is responsible for supplying and analysing the tubes.

• TEA 50/50

• Confirmation is given that Gradko follows the procedures set out in the Practical Guidance.

• National Bias adjustment factor of 0.83 of the spreadsheet versions issued 03/2024 was used.

Discussion of Choice of Factor to Use

For the Bias adjustment factor, the national figure was used as the survey consists of tubes exposed over a range of settings, which differ from the co-location site, (see TG16 Box 7.11).

Table M. Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2023	National	03/24	0.83
2022	National	03/23	0.82
2021	National	03/22	0.83
2020	National	06/21	0.82

Diffusion Tube Bias Adjustment Factors 03/24 Issue of the Spreadsheet				
			New (03/24) Factor	
Laboratory	Method	Year	No. of Studies	Factor
Gradko	50% TEA in acetone	2023	15	0.83

Local Bias adjustment Factor using Rush Green Primary School

Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tubes Measurements										Automatic Method		Data Quality Check	
Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 μgm^{-3}	Tube 2 μgm^{-3}	Tube 3 μgm^{-3}	Triplicate Mean	Standard Deviation	Coefficient of Variation (CV)	95% CI of mean	Period Mean	Data Capture (% DC)	Tubes Precision Check	Automatic Monitor Data
1	05/01/2023	31/01/2023	22.72	23.98	23.74	23	0.7	3	1.7	23	100	Good	Good
2	31/012023	28/02/2023	25.34	25.24	26.05	26	0.4	2	1.1	26.6	100	Good	Good
3	28/02/2023	04/04/2023	15.37	14.58	14.53	15	0.5	3	1.2	16.2	99	Good	Good
4	04/04/2023	02/05/2023	13.15	13.19	14.13	13	0.6	4	1.4	14.2	100	Good	Good
5	02/05/2023	05/06/2023	9.73	10.25	9.6	10	0.3	3	0.9	8.4	39	Good	or Data Capture
6	05/06/2023	04/07/2023	10.67	11.22	11.38	11	0.4	3	0.9	8.1	8	Good	or Data Capture
7	04/07/2023	01/08/2023	10.26	10.75	10.03	10	0.4	4	0.9	6.9	100	Good	Good
8	01/08/2023	05/09/2023	11.16	11.72	12.24	12	0.5	5	1.3	11.5	100	Good	Good
9	05/09/2023	03/10/2023	14.16	15.31	14.92	15	0.6	4	1.5	16.4	100	Good	Good
10	03/10/2023	03/11/2023	19.59	18.83		19	0.5	3	4.8	17.9	99	Good	Good
11	03/11/2023	05/12/2023	21.94	20.1	19.17	20	1.4	7	3.5	21	100	Good	Good
12	05/12/2023	08/01/2024	18.85	16.35	17.28	17	1.3	7	3.1	15.4	100	Good	Good
13													
											Overall survey -->	Good precision	Poor Overall DC

It is necessary to have results for at least two tubes in order to calculate the precision of the measurements

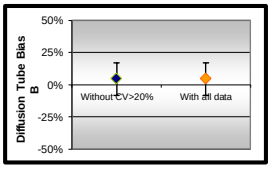
Site Name/ ID:	

Precision 12 out of 12 periods have a CV smaller than 20%

(Check average CV & DC from Accuracy calculations)

Accuracy (with 95% confidence interval)	
without periods with CV larger than 20%	
Bias calculated using 10 periods of data	
Bias factor A	0.99 (0.88 - 1.13)
Bias B	1% (-11% - 14%)
Diffusion Tubes Mean:	17 μgm^{-3}
Mean CV (Precision):	4
Automatic Mean:	17 μgm^{-3}
Data Capture for periods used:	100%
Adjusted Tubes Mean:	17 (15 - 19) μgm^{-3}

Accuracy (with 95% confidence interval)	
WITH ALL DATA	
Bias calculated using 10 periods of data	
Bias factor A	0.99 (0.88 - 1.13)
Bias B	1% (-11% - 14%)
Diffusion Tubes Mean:	17 μgm^{-3}
Mean CV (Precision):	4
Automatic Mean:	17 μgm^{-3}
Data Capture for periods used:	100%
Adjusted Tubes Mean:	17 (15 - 19) μgm^{-3}



Jaume Targa, for AEA
Version 04 - February 2011

Adjustment of DUPLICATE or TRIPLICATE Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tubes Measurements										Data Quality Check
Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 μgm^{-3}	Tube 2 μgm^{-3}	Tube 3 μgm^{-3}	Triplicate Average	Standard Deviation	CV	95% CI mean	Diffusion Tubes Precision Check
1	05/01/2023	31/01/2023	22.72	23.98	23.74	23.5	0.67	2.85	1.66	Good
2	31/01/2023	28/02/2023	25.34	25.24	26.05	25.5	0.44	1.73	1.10	Good
3	28/02/2023	04/04/2023	15.37	14.58	14.53	14.8	0.47	3.18	1.17	Good
4	04/04/2023	02/05/2023	13.15	13.19	14.13	13.5	0.55	4.11	1.38	Good
5	02/05/2023	05/06/2023	9.73	10.25	9.6	9.9	0.34	3.49	0.85	Good
6	05/06/2023	04/07/2023	10.67	11.22	11.38	11.1	0.37	3.36	0.93	Good
7	04/07/2023	01/08/2023	10.26	10.75	10.03	10.3	0.37	3.55	0.91	Good
8	01/08/2023	05/09/2023	11.16	11.72	12.24	11.7	0.54	4.61	1.34	Good
9	05/09/2023	03/10/2023	14.16	15.31	14.92	14.8	0.58	3.95	1.45	Good
10	03/10/2023	03/11/2023	19.59	18.83		19.2	0.54	2.80	4.83	Good
11	03/11/2023	05/12/2023	21.94	20.1	19.17	20.4	1.41	6.91	3.50	Good
12	05/12/2023	08/01/2024	18.85	16.35	17.28	17.5	1.26	7.22	3.14	Good
13										

It is necessary to have results for at least two tubes in order to calculate the precision of the measurements

Jaume Targa, for AEA

Version 04 - February 2011

Site Name/ ID:	Rush Green Primary School / (BG1)

Adjusted measurement (95% confidence level)
Without periods with CV larger than 20%

Bias calculated using 10 periods of data
Tube Precision: 4 Automatic DC: 100%
Bias factor A: 0.99 (0.88 - 1.13)
Bias B: 1% (-11% - 14%)

Information about tubes to be adjusted
Diffusion Tube average: 16 μgm^{-3}
Average Precision (CV): 4
Adjusted Tube average: 16 +/- 2 μgm^{-3}

Adjusted measurement (95% confidence level)
with all data

Bias calculated using 10 periods of data
Tube Precision: 4 Automatic DC: 100%
Bias factor A: 0.99 (0.88 - 1.13)
Bias B: 1% (-11% - 14%)

Information about tubes to be adjusted
Diffusion Tube average: 16 μgm^{-3}
Average Precision (CV): 4
Adjusted Tube average: 16 +/- 2 μgm^{-3}

A.3 Adjustments to the Ratified Monitoring Data

Short-term to Long-term Data Adjustment

The data for each of the monitoring sites was adjusted in line with Box 7.10 of the Local Air Quality Management Technical Guidance (TG16) using the co-located Rush Green School automatic monitoring station as the background site because the data capture rate for the monitoring locations commenced in July 2023 i.e., DT29 to DT48 were below 75% for a full calendar year required.

A second automatic site was not used for annualization calculation based on the recommendation in the technical guidance in section 7.198 that, if there are many sites to be corrected as in this case, local authorities are advised to use the technique described in Box 7.10 rather the technique discussed in Box 7.9. Moreover, whilst the Scrattons Farm is a suburban background site, we were a little bit cautious of the likely local effects of the nearest industrial and major road such as A13 which is under 200m from the site as advised in section 7.129 of the guidance.

Diffusion Tube Data Annualisation DT29 143 Grafton Road.

Months	Start Date	End Date	B1 (Am)	D1 (M)	B1 when D1 is available (Pm)
January	05/01/23	31/01/23	23.0		
February	31/01/23	28/02/23	26.6		
March	28/02/23	04/04/23	16.2		
April	04/04/23	02/05/23	14.2		
May	02/05/23	05/06/23	8.4		
June	05/06/23	04/07/23	8.1		
July	04/07/23	01/08/23	6.9	13.85	6.9
August	01/08/23	05/09/23	11.5	15.51	11.5
September	05/09/23	03/10/23	16.4	19.72	16.4
October	03/10/23	03/11/23	17.9	24.67	17.9
November	03/11/23	05/12/23	21.0	28.19	21.0
December	05/12/23	08/01/24	15.4	21.50	15.4
		Average	16.0	20.57	14.85

Annual Mean (Am) = 16.00

Period Mean (Pm) of B1 = 14.85

Ratio of Am/Pm = 16.00/14.85 = 1.08

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

Thus, D1 = M × Ra

= 20.57 X 1.08 = 22.22µg/m3

Diffusion Tube Data Annualisation DT30 947 Longbridge Road.

Months	Start Date	End Date	B1 (Am)	D1 (M)	B1 when D1 is available (Pm)
January	05/01/23	31/01/23	23.0		
February	31/01/23	28/02/23	26.6		
March	28/02/23	04/04/23	16.2		
April	04/04/23	02/05/23	14.2		
May	02/05/23	05/06/23	8.4		
June	05/06/23	04/07/23	8.1		
July	04/07/23	01/08/23	6.9	22.01	6.9
August	01/08/23	05/09/23	11.5	21.78	11.5
September	05/09/23	03/10/23	16.4	27.11	16.4
October	03/10/23	03/11/23	17.9	30.48	17.9
November	03/11/23	05/12/23	21.0	34.08	21.0
December	05/12/23	08/01/24	15.4	28.77	15.4
		Average	16.0	27.37	14.85

Annual Mean (Am) = 16.00

Period Mean (Pm) of B1 = 14.85

Ratio of Am/Pm = 16.00/14.85 = 1.08

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

Thus, D1 = M × Ra

= 27.37 X 1.08 = 29.56µg/m3

Diffusion Tube Data Annualisation DT31 947 St Vincent's Catholic Primary School.

Months	Start Date	End Date	B1 (Am)	D1 (M)	B1 when D1 is available (Pm)
January	05/01/23	31/01/23	23.0		
February	31/01/23	28/02/23	26.6		
March	28/02/23	04/04/23	16.2		
April	04/04/23	02/05/23	14.2		
May	02/05/23	05/06/23	8.4		
June	05/06/23	04/07/23	8.1		
July	04/07/23	01/08/23	6.9	16.05	6.9
August	01/08/23	05/09/23	11.5		
September	05/09/23	03/10/23	16.4	20.78	16.4
October	03/10/23	03/11/23	17.9	24.94	17.9
November	03/11/23	05/12/23	21.0	29.53	21.0
December	05/12/23	08/01/24	15.4	22.28	15.4
		Average	16.0	22.72	15.52

Annual Mean (Am) = 16.00

Period Mean (Pm) of B1 = 15.52

Ratio of Am/Pm = 16.00/15.52 = 1.03

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

Thus, D1 = M × Ra

= 22.72 X 1.03 = 23.40µg/m3

Diffusion Tube Data Annualisation DT32 Opposite 131 Upney Lane.

Months	Start Date	End Date	B1 (Am)	D1 (M)	B1 when D1 is available (Pm)
January	05/01/23	31/01/23	23.0		
February	31/01/23	28/02/23	26.6		
March	28/02/23	04/04/23	16.2		
April	04/04/23	02/05/23	14.2		
May	02/05/23	05/06/23	8.4		
June	05/06/23	04/07/23	8.1		
July	04/07/23	01/08/23	6.9	19.83	6.9
August	01/08/23	05/09/23	11.5	23.14	11.5
September	05/09/23	03/10/23	16.4	28.92	16.4
October	03/10/23	03/11/23	17.9	31.16	17.9
November	03/11/23	05/12/23	21.0	33.92	21.0
December	05/12/23	08/01/24	15.4	26.13	15.4
		Average	16.0	27.18	14.85

Annual Mean (Am) = 16.00

Period Mean (Pm) of B1 = 14.85

Ratio of Am/Pm = 16.00/14.85 = 1.08

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

Thus, D1 = M × Ra

= 27.18 X 1.08 = 29.35µg/m3

Diffusion Tube Data Annualisation DT33 196 Longbridge Road.

Months	Start Date	End Date	B1 (Am)	D1 (M)	B1 when D1 is available (Pm)
January	05/01/23	31/01/23	23.0		
February	31/01/23	28/02/23	26.6		
March	28/02/23	04/04/23	16.2		
April	04/04/23	02/05/23	14.2		
May	02/05/23	05/06/23	8.4		
June	05/06/23	04/07/23	8.1		
July	04/07/23	01/08/23	6.9	22.03	6.9
August	01/08/23	05/09/23	11.5	21.34	11.5
September	05/09/23	03/10/23	16.4	24.21	16.4
October	03/10/23	03/11/23	17.9	28.54	17.9
November	03/11/23	05/12/23	21.0	33.27	21.0
December	05/12/23	08/01/24	15.4	27.96	15.4
		Average	16.0	26.23	14.85

Annual Mean (Am) = 16.00

Period Mean (Pm) of B1 = 14.85

Ratio of Am/Pm = 16.00/14.85 = 1.08

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

Thus, D1 = M × Ra

= 26.23 X 1.08 = 28.33µg/m3

Diffusion Tube Data Annualisation DT34 150 London Road (Opposite Shell Petrol Station).

Months	Start Date	End Date	B1 (Am)	D1 (M)	B1 when D1 is available (Pm)
January	05/01/23	31/01/23	23.0		
February	31/01/23	28/02/23	26.6		
March	28/02/23	04/04/23	16.2		
April	04/04/23	02/05/23	14.2		
May	02/05/23	05/06/23	8.4		
June	05/06/23	04/07/23	8.1		
July	04/07/23	01/08/23	6.9	44.41	6.9
August	01/08/23	05/09/23	11.5	36.86	11.5
September	05/09/23	03/10/23	16.4	43.75	16.4
October	03/10/23	03/11/23	17.9	38.38	17.9
November	03/11/23	05/12/23	21.0	44.21	21.0
December	05/12/23	08/01/24	15.4	44.84	15.4
		Average	16.0	42.07	14.85

Annual Mean (Am) = 16.00

Period Mean (Pm) of B1 = 14.85

Ratio of Am/Pm = 16.00/14.85 = 1.08

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

Thus, D1 = M × Ra

= 42.07 X 1.08 = 45.44µg/m3

Diffusion Tube Data Annualisation DT35 29 London Road

Months	Start Date	End Date	B1 (Am)	D1 (M)	B1 when D1 is available (Pm)
January	05/01/23	31/01/23	23.0		
February	31/01/23	28/02/23	26.6		
March	28/02/23	04/04/23	16.2		
April	04/04/23	02/05/23	14.2		
May	02/05/23	05/06/23	8.4		
June	05/06/23	04/07/23	8.1		
July	04/07/23	01/08/23	6.9	28.91	6.9
August	01/08/23	05/09/23	11.5		
September	05/09/23	03/10/23	16.4	43.77	16.4
October	03/10/23	03/11/23	17.9	42.53	17.9
November	03/11/23	05/12/23	21.0	41.91	21.0
December	05/12/23	08/01/24	15.4	30.74	15.4
		Average	16.0	37.57	15.52

Annual Mean (Am) = 16.00

Period Mean (Pm) of B1 = 15.52

Ratio of Am/Pm = 16.00/15.52 = 1.03

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

Thus, D1 = M × Ra

= 37.57 X 1.03 = 38.70µg/m3

Diffusion Tube Data Annualisation DT36 39 Alfred's Gardens.

Months	Start Date	End Date	B1 (Am)	D1 (M)	B1 when D1 is available (Pm)
January	05/01/23	31/01/23	23.0		
February	31/01/23	28/02/23	26.6		
March	28/02/23	04/04/23	16.2		
April	04/04/23	02/05/23	14.2		
May	02/05/23	05/06/23	8.4		
June	05/06/23	04/07/23	8.1		
July	04/07/23	01/08/23	6.9	25.60	6.9
August	01/08/23	05/09/23	11.5	26.08	11.5
September	05/09/23	03/10/23	16.4	28.89	16.4
October	03/10/23	03/11/23	17.9	36.14	17.9
November	03/11/23	05/12/23	21.0	36.17	21.0
December	05/12/23	08/01/24	15.4	29.83	15.4
		Average	16.0	30.45	14.85

Annual Mean (Am) = 16.00

Period Mean (Pm) of B1 = 14.85

Ratio of Am/Pm = 16.00/14.85 = 1.08

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

Thus, D1 = M × Ra

= 30.45 X 1.08 = 32.89µg/m3

Diffusion Tube Data Annualisation DT37 Gascoigne Wharf, Alfreds Way, (Opposite Bestway.

Months	Start Date	End Date	B1 (Am)	D1 (M)	B1 when D1 is available (Pm)
January	05/01/23	31/01/23	23.0		
February	31/01/23	28/02/23	26.6		
March	28/02/23	04/04/23	16.2		
April	04/04/23	02/05/23	14.2		
May	02/05/23	05/06/23	8.4		
June	05/06/23	04/07/23	8.1		
July	04/07/23	01/08/23	6.9	29.65	6.9
August	01/08/23	05/09/23	11.5	25.85	11.5
September	05/09/23	03/10/23	16.4	26.40	16.4
October	03/10/23	03/11/23	17.9	32.84	17.9
November	03/11/23	05/12/23	21.0	43.44	21.0
December	05/12/23	08/01/24	15.4	36.96	15.4
		Average	16.0	32.52	14.85

Annual Mean (Am) = 16.00

Period Mean (Pm) of B1 = 14.85

Ratio of Am/Pm = 16.00/14.85 = 1.08

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

Thus, D1 = M × Ra

= 32.52 X 1.08 = 35.12µg/m3

Diffusion Tube Data Annualisation DT38 6 William Hope Close.

Months	Start Date	End Date	B1 (Am)	D1 (M)	B1 when D1 is available (Pm)
January	05/01/23	31/01/23	23.0		
February	31/01/23	28/02/23	26.6		
March	28/02/23	04/04/23	16.2		
April	04/04/23	02/05/23	14.2		
May	02/05/23	05/06/23	8.4		
June	05/06/23	04/07/23	8.1		
July	04/07/23	01/08/23	6.9	18.35	6.9
August	01/08/23	05/09/23	11.5	21.20	11.5
September	05/09/23	03/10/23	16.4	22.92	16.4
October	03/10/23	03/11/23	17.9	29.21	17.9
November	03/11/23	05/12/23	21.0	32.14	21.0
December	05/12/23	08/01/24	15.4	28.82	15.4
		Average	16.0	25.44	14.85

Annual Mean (Am) = 16.00

Period Mean (Pm) of B1 = 14.85

Ratio of Am/Pm = 16.00/14.85 = 1.08

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

Thus, D1 = M × Ra

= 25.44 X 1.08 = 27.48µg/m3

Diffusion Tube Data Annualisation DT39 308 Lodge Avenue.

Months	Start Date	End Date	B1 (Am)	D1 (M)	B1 when D1 is available (Pm)
January	05/01/23	31/01/23	23.0		
February	31/01/23	28/02/23	26.6		
March	28/02/23	04/04/23	16.2		
April	04/04/23	02/05/23	14.2		
May	02/05/23	05/06/23	8.4		
June	05/06/23	04/07/23	8.1		
July	04/07/23	01/08/23	6.9	27.71	6.9
August	01/08/23	05/09/23	11.5	29.82	11.5
September	05/09/23	03/10/23	16.4	34.44	16.4
October	03/10/23	03/11/23	17.9	34.81	17.9
November	03/11/23	05/12/23	21.0	40.34	21.0
December	05/12/23	08/01/24	15.4	33.20	15.4
		Average	16.0	33.39	14.85

Annual Mean (Am) = 16.00

Period Mean (Pm) of B1 = 14.85

Ratio of Am/Pm = 16.00/14.85 = 1.08

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

Thus, D1 = M × Ra

= 33.39 X 1.08 = 36.06µg/m3

Diffusion Tube Data Annualisation DT40 91 Markyate Road.

Months	Start Date	End Date	B1 (Am)	D1 (M)	B1 when D1 is available (Pm)
January	05/01/23	31/01/23	23.0		
February	31/01/23	28/02/23	26.6		
March	28/02/23	04/04/23	16.2		
April	04/04/23	02/05/23	14.2		
May	02/05/23	05/06/23	8.4		
June	05/06/23	04/07/23	8.1		
July	04/07/23	01/08/23	6.9	16.35	6.9
August	01/08/23	05/09/23	11.5	16.79	11.5
September	05/09/23	03/10/23	16.4	20.23	16.4
October	03/10/23	03/11/23	17.9	23.35	17.9
November	03/11/23	05/12/23	21.0		
December	05/12/23	08/01/24	15.4	24.77	15.4
		Average	16.0	20.30	13.62

Annual Mean (Am) = 16.00

Period Mean (Pm) of B1 = 14.85

Ratio of Am/Pm = 16.00/13.62 = 1.17

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

Thus, D1 = M × Ra

= 20.30 X 1.17 = 23.75µg/m3

Diffusion Tube Data Annualisation DT41 Goresbroook School, Cook Road.

Months	Start Date	End Date	B1 (Am)	D1 (M)	B1 when D1 is available (Pm)
January	05/01/23	31/01/23	23.0		
February	31/01/23	28/02/23	26.6		
March	28/02/23	04/04/23	16.2		
April	04/04/23	02/05/23	14.2		
May	02/05/23	05/06/23	8.4		
June	05/06/23	04/07/23	8.1		
July	04/07/23	01/08/23	6.9	31.71	6.9
August	01/08/23	05/09/23	11.5	27.53	11.5
September	05/09/23	03/10/23	16.4	39.72	16.4
October	03/10/23	03/11/23	17.9	41.13	17.9
November	03/11/23	05/12/23	21.0	39.50	21.0
December	05/12/23	08/01/24	15.4	33.61	15.4
		Average	16.0	35.53	14.85

Annual Mean (Am) = 16.00

Period Mean (Pm) of B1 = 14.85

Ratio of Am/Pm = 16.00/14.85 = 1.08

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

Thus, D1 = M × Ra

= 35.53 X 1.08 = 38.37µg/m3

Diffusion Tube Data Annualisation DT42 60 Arnold Road.

Months	Start Date	End Date	B1 (Am)	D1 (M)	B1 when D1 is available (Pm)
January	05/01/23	31/01/23	23.0		
February	31/01/23	28/02/23	26.6		
March	28/02/23	04/04/23	16.2		
April	04/04/23	02/05/23	14.2		
May	02/05/23	05/06/23	8.4		
June	05/06/23	04/07/23	8.1		
July	04/07/23	01/08/23	6.9	15.47	6.9
August	01/08/23	05/09/23	11.5	19.11	11.5
September	05/09/23	03/10/23	16.4	23.72	16.4
October	03/10/23	03/11/23	17.9	24.96	17.9
November	03/11/23	05/12/23	21.0	31.67	21.0
December	05/12/23	08/01/24	15.4	25.28	15.4
		Average	16.0	23.37	14.85

Annual Mean (Am) = 16.00

Period Mean (Pm) of B1 = 14.85

Ratio of Am/Pm = 16.00/14.85 = 1.08

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

Thus, D1 = M × Ra

= 23.37 X 1.08 = 25.24µg/m3

Diffusion Tube Data Annualisation DT43 Connections, Shankar Road, House of Faith.

Months	Start Date	End Date	B1 (Am)	D1 (M)	B1 when D1 is available (Pm)
January	05/01/23	31/01/23	23.0		
February	31/01/23	28/02/23	26.6		
March	28/02/23	04/04/23	16.2		
April	04/04/23	02/05/23	14.2		
May	02/05/23	05/06/23	8.4		
June	05/06/23	04/07/23	8.1		
July	04/07/23	01/08/23	6.9	21.29	6.9
August	01/08/23	05/09/23	11.5	22.08	11.5
September	05/09/23	03/10/23	16.4	29.39	16.4
October	03/10/23	03/11/23	17.9	31.24	17.9
November	03/11/23	05/12/23	21.0	36.26	21.0
December	05/12/23	08/01/24	15.4	31.46	15.4
		Average	16.0	28.62	14.85

Annual Mean (Am) = 16.00

Period Mean (Pm) of B1 = 14.85

Ratio of Am/Pm = 16.00/14.85 = 1.08

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

Thus, D1 = M × Ra

= 28.62 X 1.08 = 30.91µg/m3

Diffusion Tube Data Annualisation DT44 Leys Infants School, 9 Leys Avenue.

Months	Start Date	End Date	B1 (Am)	D1 (M)	B1 when D1 is available (Pm)
January	05/01/23	31/01/23	23.0		
February	31/01/23	28/02/23	26.6		
March	28/02/23	04/04/23	16.2		
April	04/04/23	02/05/23	14.2		
May	02/05/23	05/06/23	8.4		
June	05/06/23	04/07/23	8.1		
July	04/07/23	01/08/23	6.9	15.90	6.9
August	01/08/23	05/09/23	11.5	16.43	11.5
September	05/09/23	03/10/23	16.4	21.22	16.4
October	03/10/23	03/11/23	17.9	25.22	17.9
November	03/11/23	05/12/23	21.0	30.09	21.0
December	05/12/23	08/01/24	15.4	22.31	15.4
		Average	16.0	21.86	14.85

Annual Mean (Am) = 16.00

Period Mean (Pm) of B1 = 14.85

Ratio of Am/Pm = 16.00/14.85 = 1.08

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

Thus, D1 = M × Ra

= 21.86 X 1.08 = 23.61µg/m3

Diffusion Tube Data Annualisation DT45 463 Rainham Road South.

Months	Start Date	End Date	B1 (Am)	D1 (M)	B1 when D1 is available (Pm)
January	05/01/23	31/01/23	23.0		
February	31/01/23	28/02/23	26.6		
March	28/02/23	04/04/23	16.2		
April	04/04/23	02/05/23	14.2		
May	02/05/23	05/06/23	8.4		
June	05/06/23	04/07/23	8.1		
July	04/07/23	01/08/23	6.9	20.62	6.9
August	01/08/23	05/09/23	11.5	22.69	11.5
September	05/09/23	03/10/23	16.4	26.43	16.4
October	03/10/23	03/11/23	17.9	29.69	17.9
November	03/11/23	05/12/23	21.0	32.97	21.0
December	05/12/23	08/01/24	15.4	27.32	15.4
		Average	16.0	26.62	14.85

Annual Mean (Am) = 16.00

Period Mean (Pm) of B1 = 14.85

Ratio of Am/Pm = 16.00/14.85 = 1.08

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

Thus, D1 = M × Ra

= 26.62 X 1.08 = 28.75µg/m3

Diffusion Tube Data Annualisation DT46 116 Alibon Road.

Months	Start Date	End Date	B1 (Am)	D1 (M)	B1 when D1 is available (Pm)
January	05/01/23	31/01/23	23.0		
February	31/01/23	28/02/23	26.6		
March	28/02/23	04/04/23	16.2		
April	04/04/23	02/05/23	14.2		
May	02/05/23	05/06/23	8.4		
June	05/06/23	04/07/23	8.1		
July	04/07/23	01/08/23	6.9	18.93	6.9
August	01/08/23	05/09/23	11.5	19.18	11.5
September	05/09/23	03/10/23	16.4	23.63	16.4
October	03/10/23	03/11/23	17.9	28.45	17.9
November	03/11/23	05/12/23	21.0	32.72	21.0
December	05/12/23	08/01/24	15.4	26.45	15.4
		Average	16.0	24.89	14.85

Annual Mean (Am) = 16.00

Period Mean (Pm) of B1 = 14.85

Ratio of Am/Pm = 16.00/14.85 = 1.08

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

Thus, D1 = M × Ra

= 24.89 X 1.08 = 26.88µg/m3

Diffusion Tube Data Annualisation DT47 830 Dagenham Road.

Months	Start Date	End Date	B1 (Am)	D1 (M)	B1 when D1 is available (Pm)
January	05/01/23	31/01/23	23.0		
February	31/01/23	28/02/23	26.6		
March	28/02/23	04/04/23	16.2		
April	04/04/23	02/05/23	14.2		
May	02/05/23	05/06/23	8.4		
June	05/06/23	04/07/23	8.1		
July	04/07/23	01/08/23	6.9	28.38	6.9
August	01/08/23	05/09/23	11.5	26.87	11.5
September	05/09/23	03/10/23	16.4	33.16	16.4
October	03/10/23	03/11/23	17.9	37.73	17.9
November	03/11/23	05/12/23	21.0	42.69	21.0
December	05/12/23	08/01/24	15.4	34.63	15.4
		Average	16.0	33.91	14.85

Annual Mean (Am) = 16.00

Period Mean (Pm) of B1 = 14.85

Ratio of Am/Pm = 16.00/14.85 = 1.08

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

Thus, D1 = M × Ra

= 33.91 X 1.08 = 36.62µg/m3

Diffusion Tube Data Annualisation DT48 65 Marston Avenue.

Months	Start Date	End Date	B1 (Am)	D1 (M)	B1 when D1 is available (Pm)
January	05/01/23	31/01/23	23.0		
February	31/01/23	28/02/23	26.6		
March	28/02/23	04/04/23	16.2		
April	04/04/23	02/05/23	14.2		
May	02/05/23	05/06/23	8.4		
June	05/06/23	04/07/23	8.1		
July	04/07/23	01/08/23	6.9	14.36	6.9
August	01/08/23	05/09/23	11.5	17.37	11.5
September	05/09/23	03/10/23	16.4	18.56	16.4
October	03/10/23	03/11/23	17.9	26.33	17.9
November	03/11/23	05/12/23	21.0		
December	05/12/23	08/01/24	15.4	24.24	15.4
		Average	16.0	20.17	13.62

Annual Mean (Am) = 16.00

Period Mean (Pm) of B1 = 14.85

Ratio of Am/Pm = 16.00/13.62 = 1.17

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

Thus, D1 = M × Ra

= 20.17 X 1.17 = 23.60µg/m3

Annualisation of Particulate Matter (PM_{10}) at (BG2) – Scrattons Farm

With the data capture for PM_{10} less than 75% and need annualization in accordance with section 7.165 of the Local Air Quality Management Technical Guidance (TG22), this was conducted as advised in Box 7.9 of the technical guidance using the urban background sites which are: Bexley - Belvedere West and Newham - Wren Close to see the likely changes in the annual concentration in spite of this not been for specific periodic monitoring as there were recorded concentrations for each of the months in 2023. Only that some months are very low due to minor analyser fault for those periods which limited the overall data capture.

Therefore, the low data capture was not because of no specific periodic means for some months but that; the concentration varies throughout the year, because the instrument was operational for a period below average concentrations as can be seen for the month of January, February, April, August, September, October, and December.

Roadside Site	Annual mean 2023 (Am)	Period Mean 2023 (Pm)	Ratio (Am/Pm)
Bexley - Belvedere West	11.2	11.5	0.974
Newham - Wren Close	14.9	15.2	0.981
	Average (Ra)		0.977

Therefore, the best estimate of the annual mean for Barking and Dagenham - Scrattons Farm site in 2023 will be M × Ra = 17.0 × 0.977 = **16.6µg/m3**.

Distance Adjustment

All monitoring locations are representative of public exposure and no distance adjustment is required apart from DT4 at 291 Dagenham Heathway and DT34 at 150 London Road (Opposite Shell Petrol Station).

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

Site ID	Annualisation Factor Rush Green School	Annualisation Factor	Annualisation Factor	Annualisation Factor	Average Annualisation Factor	Raw Data Annual Mean (µg m^{-3})	Annualised Annual Mean (µg m^{-3})	Comments
DT29	1.08					20.57	22.22	Annualised with only one background site
DT30	1.08					27.37	29.56	Annualised with only one background site
DT31	1.03					22.72	23.40	Annualised with only one background site
DT32	1.08					27.18	29.35	Annualised with only one background site
DT33	1.08					26.23	28.33	Annualised with only one background site
DT34	1.08					42.07	45.44	Annualised with only one background site
DT35	1.03					37.57	38.70	Annualised with only one background site
DT36	1.08					30.45	32.89	Annualised with only one background site
DT37	1.08					32.52	35.12	Annualised with only one background site
DT38	1.08					25.44	27.48	Annualised with only one background site
DT39	1.08					33.39	36.06	Annualised with only one background site
DT40	1.17					20.30	23.75	Annualised with only one background site
DT41	1.08					35.53	38.37	Annualised with only one background site
DT42	1.08					23.37	25.24	Annualised with only one background site
DT43	1.08					28.62	30.91	Annualised with only one background site
DT44	1.08					21.86	23.61	Annualised with only one background site
DT45	1.08					26.62	28.75	Annualised with only one background site
DT46	1.08					24.89	26.88	Annualised with only one background site
DT47	1.08					33.91	36.62	Annualised with only one background site
DT48	1.17					20.17	23.60	Annualised with only one background site

Table O. NO_2 Fall off With Distance Calculations

Site ID	Distance (m): Monitoring Site to Kerb	Distance (m): Receptor to Kerb	Monitored Concentration (Annualised and Bias Adjusted (µg m^{-3})	Background Concentration (µg m^{-3})	Concentration Predicted at Receptor µg m^{-3})	Comments
DT4	1	6	38.65	17.9	31.2	
DT34	1	2	37.72	23.7	35.8	

Appendix B Full Monthly Diffusion Tube Results for 2023

Table P. NO_2 2023 Diffusion Tube Results ($\mu g/m^3$)

DT ID	X OS Grid Ref (Eastings)	Y OS Grid Ref (Northing)	Validate Data Capture 2023 % (b)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised	Annual Mean: Annualised and Bias Adjusted (0.83)	Annual Mean: Annualised and Bias Adjusted with Distance Corrected to Nearest Exposure	Comment
DT1	544793	183783	100.0	40.52	44.62	32.96	37.42	29.97	34.63	20.88	25.69	34.04	34.80	32.81	23.61	32.66	32.66	27.1	27.1	
DT2	545032	183193	100.0	38.90	41.06	28.71	27.67	22.66	21.76	22.00	19.99	23.92	26.77	33.49	28.02	27.91	27.91	23.2	23.2	
DT3	547806	183543	100.0	41.54	45.32	26.27	32.60	28.19	25.87	26.15	26.57	31.04	34.27	39.27	30.28	32.28	32.28	26.8	26.8	
DT4	549035	184813	100.0	57.73	57.70	46.61	43.95	37.12	42.70	42.12	40.48	43.46	52.09	50.12	44.68	46.56	46.56	38.7	*31.2*	
DT5	547789	185792	100.0	46.85	47.60	36.40	29.65	31.18	33.94	35.57	33.14	38.48	41.52	39.50	33.92	37.31	37.31	31.0	31.0	
DT6a	551057	187231	100.0	22.72	25.34	15.37	13.15	9.73	10.67	10.26	11.16	14.16	19.59	21.94	18.85	16.08	16.08	13.4	13.4	
DT6b	551057	187231	100.0	23.98	25.24	14.58	13.19	10.25	11.22	10.75	11.72	15.31	18.83	20.10	16.35	15.96	15.96	13.3	13.3	
DT6c	551057	187231	91.7	23.74	26.05	14.53	14.13	9.60	11.38	10.03	12.24	14.92		19.17	17.28	15.73	15.73	13.1	13.1	
DT7	548544	188125	100.0	33.86	44.55	34.36	32.78	33.57	35.24	26.79	27.23	34.23	35.85	36.09	23.20	33.15	33.15	27.5	27.5	
DT8	548359	189057	100.0	40.34	40.30	30.27	31.08	30.37	27.03	20.38	26.16	27.92	32.25	34.29	25.61	30.50	30.50	25.3	25.3	
DT9	544128	183662	91.7	36.20		30.33	31.24	30.65	29.98	21.17	23.94	30.06	28.35	32.86	26.71	29.23	29.23	24.3	24.3	
DT10	544385	184565	100.0	37.21	39.06	27.48	28.90	21.29	23.72	19.82	21.31	30.27	30.90	35.69	28.45	28.67	28.67	23.8	23.8	
DT11	549832	183208	91.7	46.76	44.87	34.74		19.27	26.08	26.83	27.81	30.34	36.18	35.41	30.51	32.62	32.62	27.1	27.1	
DT12	546501	182713	91.7	39.50	41.57		25.66	18.33	25.27	24.73	22.60	28.03	31.77	36.67	29.81	29.45	29.45	24.4	24.4	
DT13	547081	183053	100.0	36.3	19.01	24.46	27.15	23.14	24.91	18.89	18.79	23.67	25.60	27.87	22.58	24.36	24.36	20.2	20.2	
DT14	548065	187998	100.0	43.46	52.35	39.10	41.47	31.48	39.98	32.79	33.62	42.06	43.87	42.86	37.09	40.01	40.01	33.2	33.2	
DT15	546935	183135	91.7	33.45	36.94	23.40	24.42	17.53	21.24	17.11	19.25	19.96	27.05	30.87		24.66	24.66	20.5	20.5	
DT16	545296	183204	100.0	47.65	51.53	37.18	39.06	32.63	37.94	33.30	30.15	32.10	36.95	37.25	31.24	37.25	37.25	30.9	30.9	
DT17	545842	183144	100.0	33.07	36.91	23.02	24.72	18.71	18.67	19.18	20.26	24.16	27.04	31.43	24.26	25.12	25.12	20.9	20.9	
DT18	546415	183717	100.0	51.32	52.57	45.50	44.43	32.38	36.01	37.07	35.76	39.76	40.16	43.94	38.14	41.42	41.42	34.4	34.4	
DT19	546744	185774	100.0	42.58	48.62	31.51	30.17	22.21	28.24	26.46	28.47	32.21	35.45	38.51	28.24	32.72	32.72	27.2	27.2	
DT20	549173	186755	100.0	35.75	44.06	29.01	32.01	24.71	31.13	26.66	28.48	33.90	35.64	37.11	32.02	32.54	32.54	27.0	27.0	
DT21	548733	187586	100.0	45.70	48.01	39.10	39.59	33.87	38.82	30.30	31.85	38.46	38.56	37.94	33.22	37.95	37.95	31.5	31.5	
DT22	549078	183327	100.0	33.08	35.58	21.63	24.53	15.54	20.15	16.17	19.70	23.09	26.06	29.80	23.99	24.11	24.11	20.0	20.0	
DT23	550263	184902	100.0	45.52	46.42	36.08	34.27	28.28	32.44	32.35	30.79	34.29	40.99	40.27	33.94	36.30	36.30	30.1	30.1	
DT24	548487	183557	83.3	40.90	48.58	35.21			27.06	33.46	30.06	37.97	45.61	37.38	34.29	37.05	37.05	30.8	30.8	
DT25	544699	183650	100.0	48.93	44.85	50.20	43.01	27.73	42.75	41.58	37.04	43.00	49.76	45.59	37.84	42.69	42.69	35.4	35.4	
DT26	547762	186888	100.0	43.89	46.50	34.82	35.51	28.39	25.4	25.49	26.16	32.65	34.31	33.75	28.34	32.93	32.93	27.3	27.3	
DT27	544339	184702	100.0	39.24	38.96	34.87	35.78	23.22	28.41	24.26	26.14	36.56	31.82	35.44	29.13	31.99	31.99	26.6	26.6	
DT28	546731	183684	100.0	41.58	44.77	34.42	33.13	22.37	31.2	31.79	30.57	38.79	41.31	38.19	31.68	34.98	34.98	29.0	29.0	
DT29	548422	186431	50.0							13.85	15.51	19.72	24.67	28.19	21.50	20.57	*22.22*	18.4	18.4	
DT30	544631	184553	50.0							22.01	21.78	27.11	30.48	34.08	28.77	27.37	*29.56*	24.5	24.5	
DT31	547209	186599	41.7							16.05		20.78	24.94	29.53	22.28	22.72	*23.40*	19.4	19.4	
DT32	545942	184073	50.0							19.83	23.14	28.92	31.16	33.92	26.13	27.18	*29.35*	24.4	24.4	
DT33	545124	184935	50.0							22.03	21.34	24.21	28.54	33.27	27.96	26.23	*28.33*	23.5	23.5	
DT34	543867	184106	50.0							44.41	36.86	43.75	38.38	44.21	44.84	42.07	*45.44*	37.7	*35.8*	
DT35	544206	184158	41.7							28.91		43.77	42.53	41.91	30.74	37.57	*38.70*	32.1	32.1	
DT36	545536	183446	50.0							25.60	26.08	28.89	36.14	36.17	29.83	30.45	*32.89*	27.3	27.3	
DT37	544667	183104	50.0							29.65	25.85	26.40	32.84	43.44	36.96	32.52	*35.12*	29.2	29.2	
DT38	545495	183310	50.0							18.35	21.20	22.92	29.21	32.14	28.82	25.44	*27.48*	22.8	22.8	
DT39	546618	184605	50.0							27.71	29.82	34.44	34.81	40.34	33.20	33.39	*36.06*	29.9	29.9	
DT40	546968	185087	41.7							16.35	16.79	20.23	23.35		24.77	20.30	*23.75*	19.7	19.7	
DT41	548056	183606	50.0							31.71	27.53	39.72	41.13	39.50	33.61	35.53	*38.37*	31.9	31.9	
DT42	548974	184041	50.0							15.47	19.11	23.72	24.96	31.67	25.28	23.37	*25.24*	21.0	21.0	
DT43	549537	183284	50.0							21.29	22.08	29.39	31.24	36.26	31.46	28.62	*30.91*	25.7	25.7	
DT44	550508	184123	50.0							15.90	16.43	21.22	25.22	30.09	22.31	21.86	*23.61*	19.6	19.6	
DT45	550289	184928	50.0							20.62	22.69	26.43	29.69	32.97	27.32	26.62	*28.75*	23.9	23.9	
DT46	548935	185402	50.0							18.93	19.18	23.63	28.45	32.72	26.45	24.89	*26.88*	22.3	22.3	
DT47	550002	185912	50.0							28.38	26.87	33.16	37.73	42.69	34.63	33.91	*36.62*	30.4	30.4	
DT48	549154	186114	41.7							14.36	17.37	18.56	26.33		24.24	20.17	*23.60*	19.6	19.6	

☒ **All erroneous data has been removed from the NO_2 diffusion tube dataset presented in Table P.**

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.**

☐ **Local bias adjustment factor used.**

☒ **National bias adjustment factor used.**

☒ **Where applicable, data has been distance corrected for relevant exposure in the final column.**

☒ **London Borough of Barking and Dagenham confirm that all 2023 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.**

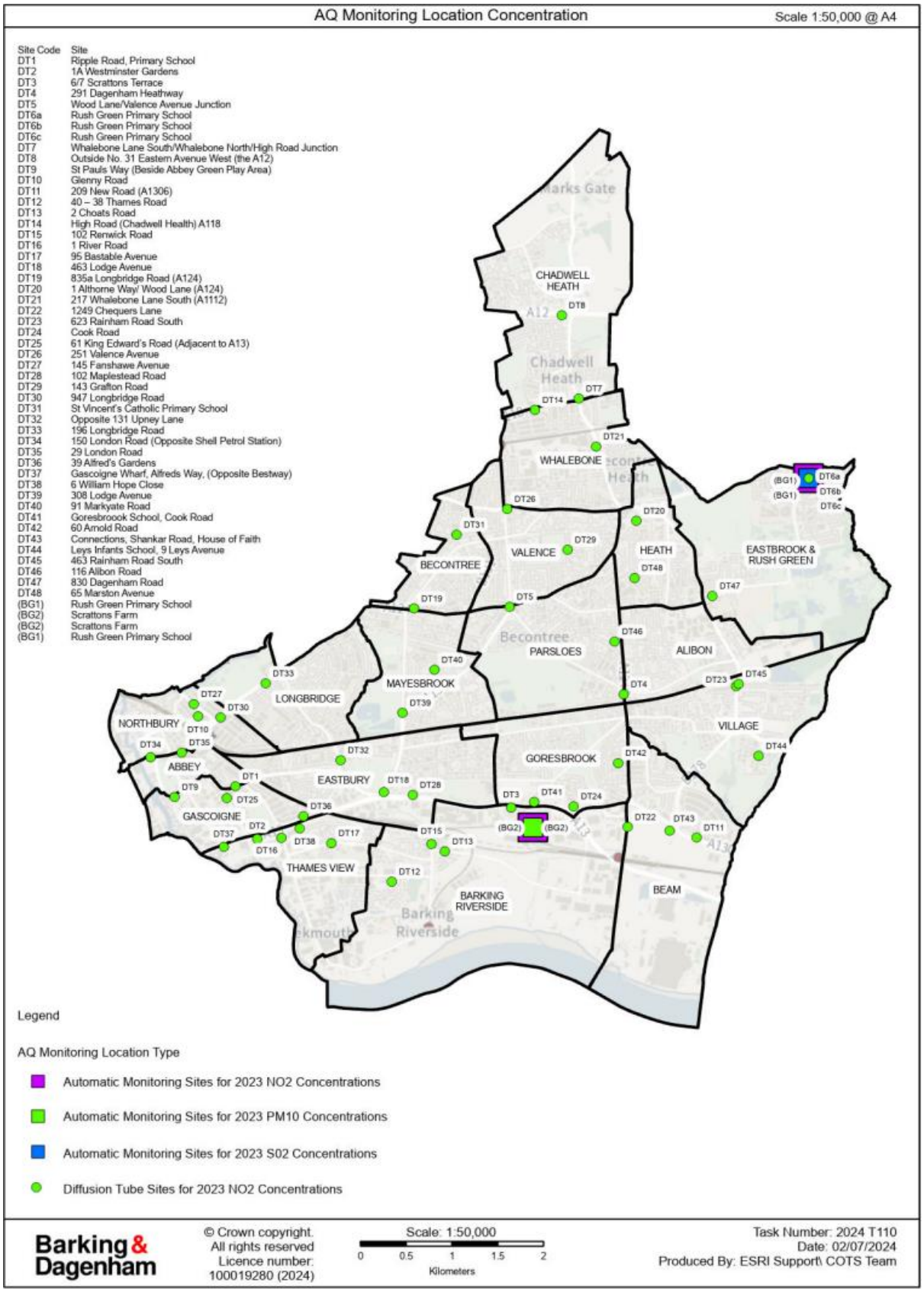
Notes:

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**.

Appendix C Map(s) of Monitoring Locations and AQMAs

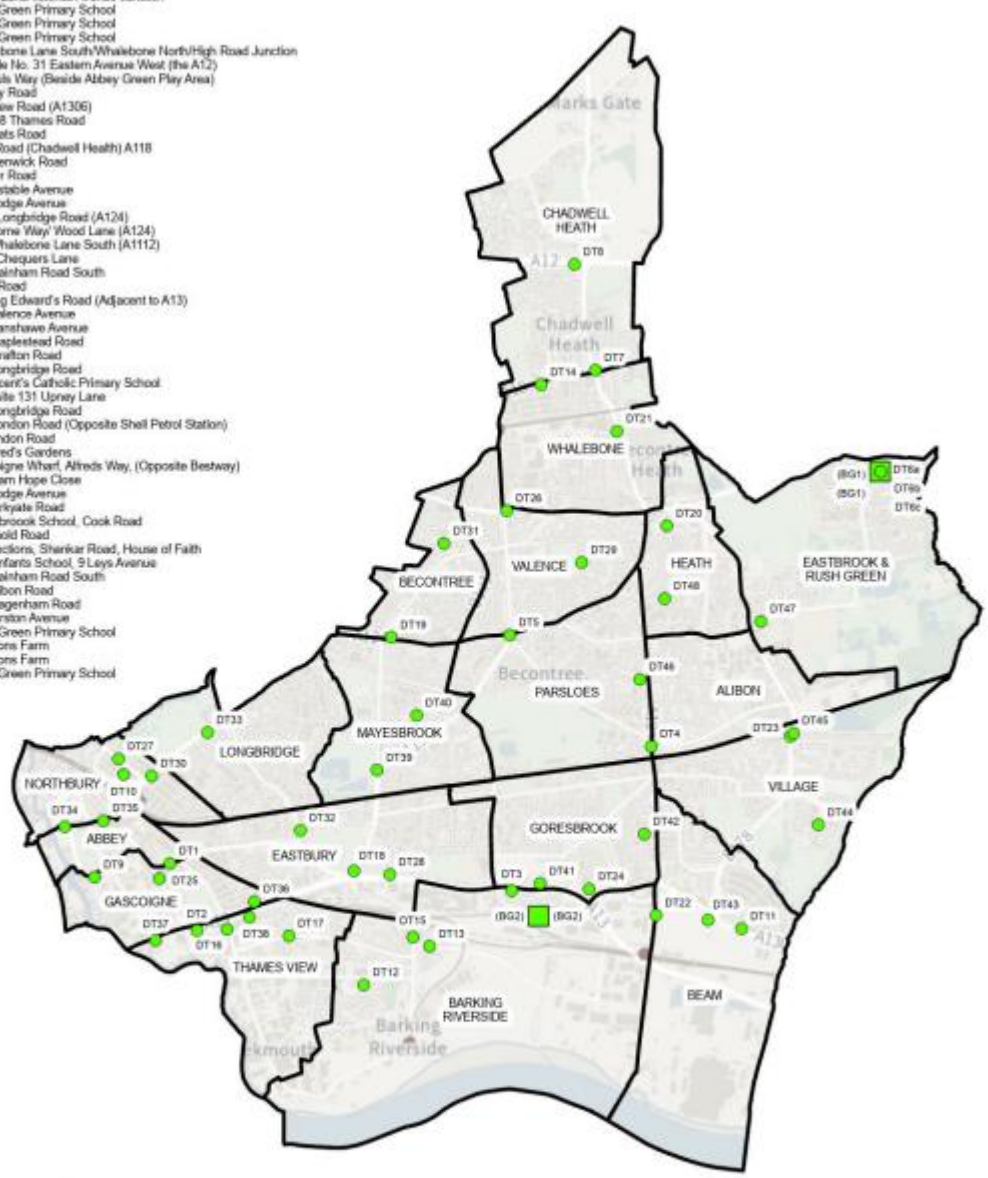
Figure A. Map of Automatic & Non-Automatic Monitoring Site(s) annual concentration for pollutants in 2023



AQ Monitoring Location Concentration

Scale 1:50,000 @ A4

Site Code	Site
DT1	Ripple Road, Primary School
DT2	1A Westminster Gardens
DT3	6/7 Scrattons Terrace
DT4	291 Dagenham Heathway
DT5	Wood Lane/Valence Avenue Junction
DT6a	Rush Green Primary School
DT6b	Rush Green Primary School
DT6c	Rush Green Primary School
DT7	Whalebone Lane South/Whalebone North/High Road Junction
DT8	Outside No. 31 Eastern Avenue West (the A12)
DT9	St Pauls Way (Beside Abbey Green Play Area)
DT10	Glenny Road
DT11	209 New Road (A1306)
DT12	40 – 38 Thames Road
DT13	2 Choats Road
DT14	High Road (Chadwell Heath) A118
DT15	102 Renwick Road
DT16	1 River Road
DT17	96 Barstable Avenue
DT18	463 Lodge Avenue
DT19	835a Longbridge Road (A124)
DT20	1 Althorne Way/ Wood Lane (A124)
DT21	217 Whalebone Lane South (A1112)
DT22	1249 Chequers Lane
DT23	623 Rainham Road South
DT24	Cook Road
DT25	61 King Edward's Road (Adjacent to A13)
DT26	251 Valence Avenue
DT27	145 Fanshawe Avenue
DT28	102 Maplestead Road
DT29	143 Grafton Road
DT30	947 Longbridge Road
DT31	St Vincent's Catholic Primary School
DT32	Opposite 131 Upney Lane
DT33	196 Longbridge Road
DT34	150 London Road (Opposite Shell Petrol Station)
DT35	29 London Road
DT36	39 Alfred's Gardens
DT37	Gascoigne Wharf, Alfreds Way, (Opposite Bestway)
DT38	6 William Hope Close
DT39	308 Lodge Avenue
DT40	91 Marksyate Road
DT41	Goresbrook School, Cook Road
DT42	60 Arnold Road
DT43	Connections, Shankar Road, House of Faith
DT44	Leys Infants School, 9 Leys Avenue
DT45	463 Rainham Road South
DT46	116 Alibon Road
DT47	830 Dagenham Road
DT48	65 Marston Avenue
(BG1)	Rush Green Primary School
(BG2)	Scrattons Farm
(BG2)	Scrattons Farm
(BG1)	Rush Green Primary School



Legend

AQ Monitoring Location Type

- Diffusion Tube Sites for 2023 NO2 Concentrations >=40(µg m-3)
- Automatic Monitoring Sites for 2023 N02, PM10 and S02 Concentrations>=40(µg m-3)
- Diffusion Tube Sites for 2023 NO2 Concentrations <40(µg m-3)
- Automatic Monitoring Sites for 2023 N02, PM10 and S02 Concentrations <40(µg m-3)

Barking & Dagenham

Scale: 1:50,000

0 0.5 1 1.5 2

Kilometers

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Date: 02/07/2024
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