

# Royal Borough of Greenwich Air Quality Annual Status Report for 2023

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This report provides a detailed overview of air quality in Royal Borough of Greenwich during 2023. It has been produced to meet the requirements of the London Local Air Quality Management (LLAQM) statutory process<sup>1</sup>.

## **Contact details:**

Environmental Protection Team  
Environmental Health (Pollution and Residential Services)  
Directorate of Housing and Safer Communities  
' 020 8921 8921

\* 4<sup>th</sup> Floor, The Woolwich Centre, 35 Wellington Street, London SE18 6HQ  
8 pollution-regulation@royalgreenwich.gov.uk

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<sup>1</sup> LLAQM Policy and Technical Guidance 2019 (LLAQM.TG(19))

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## Abbreviations

Abbreviation	Description
AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
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 <sub>10</sub>	Particulate matter less than 10 micron in diameter
PM <sub>2.5</sub>	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 <sup>(1)</sup>
Nitrogen dioxide (NO <sub>2</sub> )	200 µg m <sup>-3</sup> not to be exceeded more than 18 times a year	1-hour mean	31 Dec 2005
Nitrogen dioxide (NO <sub>2</sub> )	40 µg m <sup>-3</sup>	Annual mean	31 Dec 2005
Nitrogen dioxide (NO <sub>2</sub> )	WHO AQG <sup>(2)</sup> : 10 µg m <sup>-3</sup>	Annual mean	
Particles (PM <sub>10</sub> )	50 µg m <sup>-3</sup> not to be exceeded more than 35 times a year	24-hour mean	31 Dec 2004
Particles (PM <sub>10</sub> )	WHO AQG <sup>(2)</sup> : 45 µg m <sup>-3</sup> not to be exceeded more than 3-4 times a year	24-hour mean	
Particles (PM <sub>10</sub> )	40 µg m <sup>-3</sup>	Annual mean	31 Dec 2004
Particles (PM <sub>10</sub> )	WHO AQG <sup>(2)</sup> : 15 µg m <sup>-3</sup>	Annual mean	
Particles (PM <sub>2.5</sub> )	20 µg m <sup>-3</sup>	Annual mean	2020
Particles (PM <sub>2.5</sub> )	London Mayoral Objective <sup>(3)</sup> : 10 µg m <sup>-3</sup>	Annual mean	2030
Particles (PM <sub>2.5</sub> )	WHO AQG <sup>(2)</sup> : 5 µg m <sup>-3</sup>	Annual mean	
Particles (PM <sub>2.5</sub> )	Target of 15% reduction in concentration at urban background locations	3-year mean	Between 2010 and 2021
Particles (PM <sub>2.5</sub> )	WHO AQG <sup>(2)</sup> : 15 µg m <sup>-3</sup>	24-hour mean	
Sulphur dioxide (SO <sub>2</sub> )	266 µg m <sup>-3</sup> not to be exceeded more than 35 times a year	15-minute mean	31 Dec 2005
Sulphur dioxide (SO <sub>2</sub> )	350 µg m <sup>-3</sup> not to be exceeded more than 24 times a year	1-hour mean	31 Dec 2004
Sulphur dioxide (SO <sub>2</sub> )	125 µg m <sup>-3</sup> not to be exceeded more than 3 times a year	24-hour mean	31 Dec 2004
Sulphur dioxide (SO <sub>2</sub> )	WHO AQG <sup>(2)</sup> : 40 µg m <sup>-3</sup> 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

## 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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Inlet Height (m)
GR4 Temporarily closed	Eltham	Suburban	543978	174655	NO <sub>2</sub> , PM <sub>10</sub> ,PM <sub>2.5</sub> , (and O <sub>3</sub> )	Y	Chemiluminescent FIDAS	Y (0)	N/A	5
GN5 (Operational October 2017)	Hoskins St (Trafalgar Rd)	Roadside	539018	178007	NO <sub>2</sub> PM <sub>10</sub>  PM <sub>2.5</sub>	Y	Chemiluminescent TEOM	Y (0)	5	3
GB6	Falconwood	Roadside	544997	175098	NO <sub>2</sub> PM <sub>10</sub>  PM <sub>2.5</sub> O <sub>3</sub>	Y	Chemiluminescent TEOM FDMS	Y (5)	1.2	3
GN6 (Operational July 2018)	John Harrison Way	Roadside	539687	179123	NO <sub>2</sub> PM <sub>10</sub>  PM <sub>2.5</sub>	Y	Chemiluminescent FDMS TEOM	Y (0)	3	3
GR7	Blackheath Hill	Roadside	538141	176710	NO <sub>2</sub> PM <sub>10</sub>	Y	Chemiluminescent TEOM	Y (0)	10	3
GR8	Woolwich Flyover	Roadside	540200	178367	NO <sub>2</sub> PM <sub>10</sub>  PM <sub>2.5</sub>  (and O <sub>3</sub> )	Y	Chemiluminescent TEOM BAM	Y (0)	3	3

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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Inlet Height (m)
GR9	Westthorne Avenue	Roadside	541879	175016	NO <sub>2</sub> PM <sub>10</sub> PM <sub>2.5</sub> (and O <sub>3</sub> )	Y	Chemiluminescent TEOM FDMS	Y (0)	12	3
GNO Note- previously GR10	Burrage Grove	Roadside	544084	178881	NO <sub>2</sub> PM <sub>10</sub> PM <sub>2.5</sub>	Y	Chemiluminescent FDMS TEOM	Y (1)	12	3
GN3 Note - previously GR13	Plumstead High St	Roadside	545560	178526	NO <sub>2</sub> PM <sub>10</sub> PM <sub>2.5</sub> (and O <sub>3</sub> )	Y	Chemiluminescent FDMS TEOM	Y (0)	5	3
GN4 Note- previously GR14	Fiveways Sidcup Rd	Roadside	543582	172653	NO <sub>2</sub> PM <sub>10</sub>	Y	Chemiluminescent TEOM	Y (5)	2	3

**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

**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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
GW23	Siebert Rd	Roadside	540420	177706	NO <sub>2</sub>	Y	0.0	17.2	No	2.0
GW24	Plumstead common Rd	Roadside	543806	177951	NO <sub>2</sub>	Y	0.0	3.0	No	2.0
GW25	Eltham Rd	Roadside	540099	174881	NO <sub>2</sub>	Y	0.0	3.0	No	2.0
GW26	Foots Cray Rd	Roadside	544015	173139	NO <sub>2</sub>	Y	0.0	0.5	No	2.0
GW27	Charlton village	Roadside	541645	177874	NO <sub>2</sub>	Y	0.0	0.5	No	2.0
GW29	Woolwich Rd	Roadside	541167	178512	NO <sub>2</sub>	Y	0.0	1.5	No	2.0
GW32	Banchory Rd	Roadside	540664	177235	NO <sub>2</sub>	Y	0.0	17.1	No	2.0
GW33	Blackheath hill	Roadside	537971	176776	NO <sub>2</sub>	Y	0.0	1.5	No	2.0
GW34	Bannockburn School	Roadside	545490	178543	NO <sub>2</sub>	Y	0.0	3.0	No	2.0
GW35	Woolwich Rd Greenwich	Roadside	539527	178281	NO <sub>2</sub>	Y	0.0	1.5	No	2.0
GW36	Boord St	Roadside	539320	179234	NO <sub>2</sub>	Y	50.0	30.0	No	2.0



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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
GW37	De Lucy School	Urban background	546630	179557	NO <sub>2</sub>	Y	0.0	215.0	No	2.0
GW38a	Westhorne Av	Urban Background	541885	175045	NO <sub>2</sub>	Y	0.0	30.0	No	2.0
GW39a, GW39b, GW39c	Bexley Rd ECC	Urban Background	543986	174660	NO <sub>2</sub>	Y	0.0	N/A	Yes	2.0
GW40	Sherewsbury house	Urban Background	544065	176996	NO <sub>2</sub>	Y	0.0	575.0	No	2.0
GW41	Sidcup	Roadside	543391	172765	NO <sub>2</sub>	Y	0.0	3.0	No	2.0
GW42	Greenwich church St	Roadside	538317	177652	NO <sub>2</sub>	Y	0.0	2.0	No	2.0
GW43	Creek Rd	Roadside	537353	177632	NO <sub>2</sub>	Y	0.0	2.0	No	2.0
GW44	Eltham high St	Roadside	543096	174439	NO <sub>2</sub>	Y	0.0	3.6	No	2.0
GW106	gran depot Rd	Roadside	543505	178576	NO <sub>2</sub>	Y	0.0	1.0	No	2.0
GW48	Greenwich south St	Roadside	538044	176960	NO <sub>2</sub>	Y	0.0	2.5	No	2.0
GW49	Woolwich high St	Roadside	543472	179217	NO <sub>2</sub>	Y	0.0	1.0	No	2.0

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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
GW50a, GW50b, GW50c	Woolwich flyover	Roadside	540203	178367	NO <sub>2</sub>	Y	0.0	3.0	Yes	2.0
GW51	Bugsby Way	Roadside	539638	179024	NO <sub>2</sub>	Y	0.0	2.0	No	2.0
GW52	Woolwich high St	Roadside	542842	179108	NO <sub>2</sub>	Y	0.0	1.5	No	2.0
GW53	Shooters hill Rd	Roadside	542181	176878	NO <sub>2</sub>	Y	0.0	1.5	No	2.0
GW54	Westhorne Av	Roadside	541915	175039	NO <sub>2</sub>	Y	0.0	2.5	No	2.0
GW55a, GW55b, GW55c	Crown woods Way	Roadside	545005	175097	NO <sub>2</sub>	Y	0.0	1.2	Yes	2.0
GW56	Sidcup Rd	Roadside	543679	172598	NO <sub>2</sub>	Y	0.0	1.5	No	2.0
GW57a	Trafalgar Rd	Roadside	538968	177955	NO <sub>2</sub>	Y	0.0	7.0	No	2.0
GW58a, GW58b, GW58c	Blackheath hill	Roadside	538143	176712	NO <sub>2</sub>	Y	0.0	10.0	Yes	2.0
GW59a, GW59b, GW59c	Westhorne Av	Roadside	541883	175016	NO <sub>2</sub>	Y	0.0	12.0	Yes	2.0
GW60a, GW60b, GW60c	Burrage grove	Roadside	544086	178882	NO <sub>2</sub>	Y	0.0	12.0	Yes	2.0

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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
GW101	Plumstead Rd	Roadside	544727	178884	NO <sub>2</sub>	Y	0.0	1.0	No	2.0
GW102	Plumstead Rd	Roadside	544075	178898	NO <sub>2</sub>	Y	0.0	1.0	No	2.0
GW61a, GW61b, GW61c	John Harrison Way	Roadside	539687	179123	NO <sub>2</sub>	Y	0.0	3.0	Yes	2.0
GW31	Deansfield school	Roadside	543383	175664	NO <sub>2</sub>	Y	0.0	3.0	No	2.0
GW103	Wricklemarsh Rd	Roadside	540935	176575	NO <sub>2</sub>	Y	0.0	9.0	No	2.0
GW104	Sun lane	Roadside	540743	177072	NO <sub>2</sub>	Y	0.0	12.5	No	2.0
GW105	Clifton roundabout	Roadside	541143	174294	NO <sub>2</sub>	Y	0.0	5.0	No	2.0
GW30	Indus Rd	Roadside	541372	177070	NO <sub>2</sub>	Y	0.0	5.0	No	2.0
GW28	Dunblane Rd	Roadside	542656	176207	NO <sub>2</sub>	Y	0.0	7.5	No	2.0

**Notes:**

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

(2) N/A if not applicable.

## 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<sub>2</sub> Monitoring Results: Automatic Monitoring (µg/m<sup>3</sup>)**

Site ID	Site type	Valid data capture for monitoring period % <sup>(a)</sup>	Valid data capture 2023 % <sup>(b)</sup>	2017	2018	2019	2020	2021	2022	2023
GR4 Eltham	Automatic	N/A	N/A	20	16	17	15	15	10.3	Temporarily closed
GN5 Hoskins Street (Operational October 2017)	Automatic	62	62	N/A	<b>43</b>	<b>41</b>	34	33	32	30.9
GN6 John Harrison Way (Operational July 2018)	Automatic		100	N/A	34	33	26	25	23	22
GB6 Falconwood	Automatic	70	70	40	39	36	27	27	22	17.4
GR7 Blackheath	Automatic		97	38	35	38	29	30	27	28
GR8 Woolwich Flyover	Automatic	55	55	<u>65</u>	<b>57</b>	<b>52</b>	<b>43</b>	40	40	33.1

Site ID	Site type	Valid data capture for monitoring period % <sup>(a)</sup>	Valid data capture 2023 % <sup>(b)</sup>	2017	2018	2019	2020	2021	2022	2023
GR9 Westhorne Av	Automatic		100	39	38	34	25	26	23.6	21
GN0 (GR10) Burrage Grove	Automatic		97	35	35	33	26	27	26	23
GN3(GR13) Plumstead High St	Automatic		100	34	33	34	30	25	25	23
GN4(GR14) Fiveways	Automatic		91	<b>41</b>	40	37	26	31	27	24

**Notes:**

The annual mean concentrations are presented as  $\mu\text{g m}^{-3}$ .

Exceedances of the NO<sub>2</sub> annual mean AQO of  $40 \mu\text{g m}^{-3}$  are shown in **bold**.

NO<sub>2</sub> annual means in excess of  $60 \mu\text{g m}^{-3}$ , indicating a potential exceedance of the NO<sub>2</sub> 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%).

**Table E. Annual Mean NO<sub>2</sub> Monitoring Results: Non-Automatic Monitoring (µg/m<sup>3</sup>)**

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
GW23	540420	177706	Roadside	91.67	87.4	36.6	31.1	34.6	27.0	28.0	23.0	24.0
GW24	543806	177951	Roadside	91.67	87.4	<b>50.1</b>	<b>45.8</b>	<b>44.8</b>	35.0	37.0	29.0	31.0
GW25	540099	174881	Roadside	91.67	87.4	35.1	32.2	32.2	27.0	27.0	23.0	21.6
GW26	544015	173139	Roadside	75	71.5	28.4	23.8	26.5	22.0	22.0	18.0	16.1
GW27	541645	177874	Roadside	91.67	87.4	38.6	31.9	34.9	26.0	26.0	23.0	25.8
GW29	541167	178512	Roadside	91.67	87.4	<b>56.2</b>	<b>53.8</b>	<b>49.2</b>	39.0	38.0	29.0	30.4
GW32	540664	177235	Roadside	91.67	87.4	<b>45.9</b>	39.3	39.5	32.0	30.0	26.0	25.1
GW33	537971	176776	Roadside	83.33	79.7	<b>53.9</b>	<b>46.6</b>	<b>47.4</b>	37.0	37.0	31.0	33.6
GW34	545490	178543	Roadside	91.67	87.4	37.2	33.9	35.3	30.0	28.0	26.0	24.9
GW35	539527	178281	Roadside	91.67	87.4	<b>53.6</b>	<b>48.9</b>	<b>52.9</b>	<b>42.0</b>	34.0	29.0	30.6
GW36	539320	179234	Roadside	91.67	87.4	<b>56.4</b>	<b>46.9</b>	<b>49.3</b>	<b>41.0</b>	30.5	23.0	23.9
GW37	546630	179557	Urban Background	75	72.3	23.3	21.0	21.9	18.0	18.0	14.0	14.4
GW38a	541885	175045	Urban Background	91.67	87.4	32.1	28.3	29.0	22.0	23.0	21.0	18.6
GW39a, GW39b, GW39c	543986	174660	Urban Background	91.67	87.4	19.1	17.2	18.5	15.0	16.0	14.0	11.8
GW40	544065	176996	Urban Background	83.33	79.7	16.5	16.9	18.2	16.0	15.0	16.6	11.1
GW41	543391	172765	Roadside	91.67	87.4	<b>54.5</b>	<b>44.9</b>	47.7	36.0	31.0	27.0	25.3
GW42	538317	177652	Roadside	83.33	80.5	<b>44.8</b>	<b>40.1</b>	39.8	32.0	32.0	27.0	28.9
GW43	537353	177632	Roadside	91.67	87.4	<b>50.4</b>	<b>43.5</b>	<b>44.2</b>	33.0	29.0	26.0	25.8
GW44	543096	174439	Roadside	83.33	77.3	<b>48.0</b>	<b>43.5</b>	<b>47.8</b>	39.0	<b>42.0</b>	34.0	37.0
GW106	543505	178576	Roadside	91.67	87.4	38.4	35.5	36.0	31.0	30.0	27.0	25.5
GW48	538044	176960	Roadside	58.33	58.1	38.5	33.1	37.8	31.0	28.0	26.0	29.0

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
GW49	543472	179217	Roadside	91.67	87.4	<b>58.1</b>	<b>41.8</b>	<b>43.8</b>	33.0	31.0	28.0	27.9
GW50a, GW50b, GW50c	540203	178367	Roadside	91.67	87.4	<b><u>69.5</u></b>	<b>54.3</b>	<b>53.2</b>	<b>49.0</b>	<b>41.0</b>	36.0	38.7
GW51	539638	179024	Roadside	91.67	87.4	43.6	37.0	39.0	30.0	29.0	26.0	27.0
GW52	542842	179108	Roadside	91.67	87.4	39.2	37.2	36.6	24.0	24.0	20.0	19.6
GW53	542181	176878	Roadside	91.67	87.4	34.0	29.0	29.8	24.0	24.0	22.0	21.5
GW54	541915	175039	Roadside	91.67	87.4	<b>48.7</b>	<b>50.6</b>	<b>53.0</b>	<b>41.0</b>	<b>40.0</b>	34.0	31.7
GW55a, GW55b, GW55c	545005	175097	Roadside	91.67	87.4	<b>44.6</b>	<b>42.1</b>	39.9	30.0	29.0	27.0	23.6
GW56	543679	172598	Roadside	91.67	87.4	<b>47.5</b>	<b>40.6</b>	39.1	32.0	29.0	25.0	26.1
GW57a	538968	177955	Roadside	91.67	87.4	33.7	29.5	29.7	24.0	24.0	20.0	21.1
GW58a, GW58b, GW58c	538143	176712	Roadside	91.67	87.4	<b>41.7</b>	37.9	36.6	29.0	30.0	27.0	25.4
GW59a, GW59b, GW59c	541883	175016	Roadside	91.67	87.4	37.6	35.4	33.7	25.0	25.0	23.0	21.9
GW60a, GW60b, GW60c	544086	178882	Roadside	91.67	87.4	32.2	29.5	29.3	24.0	21.3	21.0	20.3
GW101	544727	178884	Roadside	91.67	80.3	<b>58.1</b>	<b>56.5</b>	<b>53.8</b>	<b>44.0</b>	<b>41.0</b>	36.0	<b>40.9</b>
GW102	544075	178898	Roadside	91.67	87.4	<b>48.0</b>	<b>50.5</b>	<b>51.5</b>	<b>50.0</b>	<b>42.0</b>	34.7	36.5
GW61a, GW61b, GW61c	539687	179123	Roadside	91.67	87.4	28.1	31.9	32.8	26.0	23.0	23.0	25.0
GW31	543383	175664	Roadside	91.67	87.4	30.3	26.3	26.0	20.0	21.0	19.0	23.7

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
GW103	540935	176575	Roadside	91.67	87.4	<b>41.2</b>	35.9	35.1	29.0	28.0	21.0	24.1
GW104	540743	177072	Roadside	75	69.6	<b>49.8</b>	<b>43.7</b>	<b>44.9</b>	<b>40.0</b>	31.0	28.0	28.2
GW105	541143	174294	Roadside	91.67	87.4	<b>52.4</b>	<b>46.5</b>	<b>46.0</b>	36.0	36.0	29.0	31.0
GW30	541372	177070	Roadside	91.67	87.4	35.9	33.6	32.7	27.0	26.0	23.0	23.4
GW28	542656	176207	Roadside	91.67	87.4	32.6	31.3	29.8	22.0	23.0	19.0	19.4

Annualization has been conducted where data capture is <75% and >25% in line with LLAQM.TG (19).

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  $\mu\text{g}/\text{m}^3$ .

Exceedances of the NO<sub>2</sub> annual mean objective of 40 $\mu\text{g}/\text{m}^3$  are shown in **bold**.

NO<sub>2</sub> annual means exceeding 60 $\mu\text{g}/\text{m}^3$ , indicating a potential exceedance of the NO<sub>2</sub> 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%).



**Table F. NO<sub>2</sub> Automatic Monitoring Results: Comparison with 1-hour Mean Objective, Number of 1-Hour Means > 200 µg m<sup>-3</sup>**

Site ID	Valid data capture for monitoring period % <sup>(a)</sup>	Valid data capture 2023 % <sup>(b)</sup>	2017	2018	2019	2020	2021	2022	2023
GR4 Eltham			0	0	0	0	0	0 (49)	Temporary closed
GN5 Hoskins Street (operational Oct 2017)	62	62	N/A	1	0	0	0	0	0(70)
GN6 John Harrison Way (operational July 2018)		100	N/A	0	0	0	0	0	0
GB6 Falconwood	70	70	1	0	0	0	0	0	0(51)
GR7 Blackheath		97	0	0	0	0	0	0	0
GR8 Woolwich Flyover	55	55	7	0	0	0	0	0	0(95)
GR9 Westhorne Av		100	2	0	0	0	0	0 (91)	0

Site ID	Valid data capture for monitoring period % <sup>(a)</sup>	Valid data capture 2023 % <sup>(b)</sup>	2017	2018	2019	2020	2021	2022	2023
GN0 Burrage Grove		97	0	0	0	0	0	0	0
GN3 Plumstead High St		100	0	0	0	0	0	0	0
GN4 Fiveways		91	0	0	0	1	0	0	0

### Notes

Results are presented as the number of 1-hour periods where concentrations greater than 200 µg m<sup>-3</sup> have been recorded.

Exceedance of the NO<sub>2</sub> short term AQO of 200 µg m<sup>-3</sup> 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 G. Annual Mean PM<sub>10</sub> Automatic Monitoring Results (µg m<sup>-3</sup>)**

Site ID	Valid data capture for monitoring period % <sup>(a)</sup>	Valid data capture 2023 % <sup>(b)</sup>	2017	2018	2019	2020	2021	2022	2023
GR4 Eltham			19	17	14	14	12	N/A	Temporarily closed
GN5 Hoskins Street (operational Oct2017)		100	N/A	22	22	19	19	18.8	16
GN6 John Harrison Way (operational July 2018)		89	N/A	15	14	19	20	19	16
GB6 Falconwood	66	66	18	21	19	18	19	17.7	15.8
GR7 Blackheath		97	23	22	20	19	19	17	14
GR8 Woolwich Flyover	74	74	25	25	23	21	20	18	16.4
GR9 Westhorne Av		100	21	18	15	19	17	19	15
GN0 Burrage Grove		98	18	18	17	15	13	14.3	13

Site ID	Valid data capture for monitoring period % <sup>(a)</sup>	Valid data capture 2023 % <sup>(b)</sup>	2017	2018	2019	2020	2021	2022	2023
GN3 Plumstead High Street		100	20	18	16	15	13	13.9	12
GN4 Fiveways		97	21	25	25	23	21	15	14

### Notes

The annual mean concentrations are presented as  $\mu\text{g m}^{-3}$ .

Exceedances of the PM<sub>10</sub> annual mean AQO of  $40 \mu\text{g m}^{-3}$  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%).

**Table H. PM<sub>10</sub> Automatic Monitoring Results: Comparison with 24-Hour Mean Objective, Number of PM<sub>10</sub> 24-Hour Means > 50 µg m<sup>-3</sup>**

Site ID	Valid data capture for monitoring period % <sup>(a)</sup>	Valid data capture 2023 % <sup>(b)</sup>	2017	2018	2019	2020	2021	2022	2023
GR4 Eltham			4	1	2	1	0	N/A	Temporarily closed
GN5 Hoskins Street (operational Oct 2017)		100	N/A	4	12	6	2	4(30.8)	1
GN6 John Harrison Way (operational July 2018)		89	N/A	0	6	3	3	3	3
GB6 Falconwood	66	66	2	2	8	6	4	4(27.8)	0(26.5)
GR7 Blackheath		97	15	5	7	5	2	3	0
GR8 Woolwich Flyover	74	74	9	6	10	5	5	5	2(26.4)
GR9 Westhorne Av		100	16	4	2	5	1	5	0
GN0 Burrage Grove		98	8	3	7	0	0	3(24.9)	0
GN3 Plumstead High Street		100	2	1	5	4	0	0(22.1)	0

Site ID	Valid data capture for monitoring period % <sup>(a)</sup>	Valid data capture 2023 % <sup>(b)</sup>	2017	2018	2019	2020	2021	2022	2023
GN4 Fiveways		92	1	10	17	8	3	3	0

### Notes

Exceedances of the PM<sub>10</sub> 24-hour mean objective (50 µg m<sup>-3</sup> 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%).

**Table I. Annual Mean PM<sub>2.5</sub> Automatic Monitoring Results (µg m<sup>-3</sup>)**

Site ID	Valid data capture for monitoring period % <sup>(a)</sup>	Valid data capture 2023 % <sup>(b)</sup>	2017	2018	2019	2020	2021	2022	2023
GR4 Eltham			12	10	11	10	8	7.6	Temporarily closed
GN5 Hoskins Street (operational Oct2017)		98	N/A	9	9	8	7.7	8	6.5
GN6 John Harrison Way (operational July 2018)	64	64	N/A	10	11	9	11	10	8.2
GB6 Falconwood	62	62	13	13	12	10	13	9.5	8.7
GR8 Woolwich Flyover	15	15	13.1	12	11	10	11.5	12	-
GR9 Westhorne Av		98	11	11	10	8	7	8.7	10
GN0 Burrage Grove	20	20	12	13	11	12	11	12	-
GN3 Plumstead High St		75	12	13	13	9	9.4	8.2	7

**Notes**

The annual mean concentrations are presented as µg m<sup>-3</sup>.

Exceedances of the PM<sub>2.5</sub> annual mean AQO of 20 µg m<sup>-3</sup> 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%).

**Table J. Other Pollutants**

<b>Site ID</b>	<b>Valid data capture for monitoring period %<sup>(a)</sup></b>	<b>Valid data capture 2023 %<sup>(b)</sup></b>	<b>2023</b>
GN3 Plumstead High Street		100	2



## 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 Royal Greenwich can be found in

Table K. The table presents a description of the one AQMA that is currently designated within Royal Greenwich. Appendix C provides maps of AQMA(s) and also the air quality monitoring locations in relation to the AQMA(s). The air quality objectives pertinent to the current AQMA designation(s) are as follows:

- NO<sub>2</sub> annual mean
- PM<sub>10</sub> 24-hour mean

**Table K. 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
Greenwich AQMA	01/07/2001	Nitrogen dioxide NO <sub>2</sub> Particulate matter PM <sub>10</sub>	The entire Borough	YES	NO <sub>2</sub> - 49 µg m <sup>-3</sup> PM10. 27 µg m <sup>-3</sup>	NO <sub>2</sub> - 40.9 µg m <sup>-3</sup> PM10. 16.4 µg m <sup>-3</sup>	Unknown	Royal Borough of Greenwich AQAP 2023-2028	Not published yet.

Royal Borough of Greenwich confirm the information on UK-Air regarding their AQMA(s) is up to date.

Royal Borough of Greenwich confirm that all current AQAPs have been submitted to GLA.

## 2.2 Air Quality Action Plan Progress

Royal Borough of Greenwich adopted a new AQAP for 2023-2027.

Table L provides a brief summary of Royal Borough of Greenwich’s progress against the Air Quality Action Plan, showing progress made this year. New projects which commenced in 2023 are shown at the bottom of the table.

**Table L. Delivery of Air Quality Action Plan Measures**

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;"><b>Progress</b></p> <ul style="list-style-type: none"> <li>• Emissions/Concentration data               <ul style="list-style-type: none"> <li>• Benefits</li> </ul> </li> <li>• Negative impacts / Complaints</li> </ul>
1	Monitoring and other core statutory duties	<p><b>Action 1.1:</b> Complete a review of our existing automatic and diffusion tube monitoring within the borough, to ensure sites remain relevant and to achieve a high standard of data capture.</p>	<p>The Royal Borough has one of the largest real-time monitoring network in London with ten automatic monitoring station sites. A map showing the locations of the monitoring stations, and the sets of our monitoring data can be accessed <a href="#">here</a>. We have 42 diffusion tube sites, with a total of 56 diffusion tubes. Full location and monitoring details can be accessed in our Annual Status Reports, which can be downloaded from our <a href="#">website</a>.</p> <p>Further to this, in May 2019 the Port of London Authority (PLA) installed several continuous air pollution monitors near Greenwich Ship Tier to assess the impact of short-term, local river activity on air quality in the area, including cruise visits. This project is in partnership with Breathe London and LB Tower Hamlets.</p>

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;"><b>Progress</b></p> <ul style="list-style-type: none"> <li>• Emissions/Concentration data               <ul style="list-style-type: none"> <li>• Benefits</li> </ul> </li> <li>• Negative impacts / Complaints</li> </ul>
			<p>The Royal Borough is participating in a trial air quality sensor network funded by the Mayor of London for London's communities, making air quality data easily accessible. <a href="https://www.breathelondon.org/">https://www.breathelondon.org/</a></p> <p>We have begun departmental discussions to review of our monitoring sites with an aim to understand if our current sites are still relevant or if there are other areas that would benefit from monitoring. This project is ongoing.</p>
		<p><b>Action 1.2:</b> We will explore opportunities to engage and work with schools and community groups to undertake their own air quality monitoring.</p>	<p>We currently have 6 solar powered trial air quality sensors, including ones located at the following schools: St. Mary Magdalene CE School, Peninsula; Royal Hill, adjacent to James Wolfe Primary School; and Bannockburn Road - Bannockburn Primary School, Greenwich University. Some have also been co-located with our continuous monitors so that their accuracy can be assessed over several years. (Example. John Harrison Way).</p> <p>We continue to work closely with our partners in public health to identify any schools that</p>

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;"><b>Progress</b></p> <ul style="list-style-type: none"> <li>• Emissions/Concentration data               <ul style="list-style-type: none"> <li>• Benefits</li> </ul> </li> <li>• Negative impacts / Complaints</li> </ul>
			could benefit from undertaking their own monitoring.
		<b>Action 1.3:</b> We will prepare Annual Status Reports (ASRs) detailing progress against each of the AQAP measures and ensure the Royal Borough of Greenwich's AQAP is formally reviewed and updated, as a minimum, every five years.	Our new Air Quality Action Plan for 2023-2028 has gone through consultation, we have issued a report to the GLA on the consultation and is in the final stages for approval.
		<b>Action 1.4:</b> To ensure that the measures contained within this action plan are integrated across council policies and projects, this and future AQAPs will be signed-off, and future Annual Status Reports reviewed at Director level.	Air quality is considered and integrated across council policies and projects. All relevant departments were consulted with prior to writing of the AQAP for 2023-2027 and all actions were signed off by the relevant departments.
		<b>Action 1.5:</b> We will work collaboratively across all relevant departments including Environmental Health, Public Health, Regeneration, Planning & Building Control, Transport, Procurement, Sustainability, Fleet and Waste Services, and Communications to improve air quality in the borough and reduce exposure to air pollution.	We collaborated with all relevant departments when writing our AQAP for 2023-2028. Officers from all departments continue to consult and collaborate to address any matter that could impact air quality.
		<b>Action 1.6:</b> We will explore opportunities to work more collaboratively with our Air Quality Partners: The Mayor of London, the	This is an ongoing commitment, and RBG regularly meet with and collaborate with our external partners including the East London Air

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;"><b>Progress</b></p> <ul style="list-style-type: none"> <li>• Emissions/Concentration data <ul style="list-style-type: none"> <li>• Benefits</li> </ul> </li> <li>• Negative impacts / Complaints</li> </ul>
		<p>Environment Agency, the Port of London Authority and our neighbouring boroughs: Lewisham, Bromley, Bexley, Barking and Dagenham, Newham and Tower Hamlets.</p>	<p>Quality Cluster Group, GLA, and neighbouring councils. We will be working with several Local Authorities this year to deliver an anti-idling project. This project is being led by LB Camden and LB Hounslow and partially funded by the Mayor of London.</p>
2.1	Emissions from developments and buildings	<p><b>Action 2.1:</b> We will publish and enforce a Code of Construction Practice (CoCP) stipulating air quality minimum standards (&amp; other requirements e.g., noise) expected of construction activities carried out within Royal Greenwich to ensure compliance with industry good practice.</p>	<p>The Council's website <a href="#">contains information for developers on controlling dust emissions</a> during demolition and construction. Planning officers either receive comments on applications requiring, through condition, the submission of a Construction Management Plan or will direct developers to the information on the webpage. Planners have also been made aware of the Low Emission Zone for Non-Road Mobile Machinery (NRMM) and a condition has been created and been used by Planning throughout 2021 requiring compliance of NRMM with LEZ standard.</p> <p>19 major planning applications submitted between Jan 2023 and Jan 2024, all of which would be expected to comply with CoCP requirements (not all applications have been approved yet).</p>

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;"><b>Progress</b></p> <ul style="list-style-type: none"> <li>• Emissions/Concentration data               <ul style="list-style-type: none"> <li>• Benefits</li> </ul> </li> <li>• Negative impacts / Complaints</li> </ul>
		<p><b>Action 2.2:</b> We will review, revise, and implement our air quality related standard planning conditions to ensure construction sites within the borough are suitably assessed, monitored and managed in line with good industry practice, including the GLA NRMM LEZ scheme requirements.</p>	<p>8 sites have submitted details of the registration of NRMM.</p>
		<p><b>Action 2.3:</b> We will work with utility companies and statutory undertakers working on the borough's road network to ensure compliance with good industry practice and the NRMM LEZ requirements.</p>	<p>Number of compliance visits: 22 audits have been carried out between April 2023-March 2024. 1 site was found not compliant and was not compliant because it could not evidence complaints, emissions standards were not met or there was a registration problem.</p>
		<p><b>Action 2.4:</b> We will work with the relevant parties to ensure compliance with the air quality provisions of the Silvertown Tunnel CoCP including the NRMM LEZ requirements.</p>	<p>Silvertown funded 'local enhancement area'</p> <p>Delivery of a package of smaller healthy streets measures, with funding from Local Legal Agreement with TfL.</p> <p>Attendance at Silvertown Implementation Group Meetings.</p>
		<p><b>Action 2.5:</b> We will continue to require Air Quality Assessments for all major developments in the borough.</p>	<p>In 2023 we received 9 applications for major developments in the borough that were required to submit air quality assessments.</p>

Measure	LLAQM Action Matrix Theme	Action	<b>Progress</b> <ul style="list-style-type: none"> <li>• Emissions/Concentration data</li> <li>• Benefits</li> <li>• Negative impacts / Complaints</li> </ul>
		<b>Action 2.6:</b> We will require all building developments within the borough to comply with the Mayor of London's Air Quality Neutral Standard.	9 applications (100% of full major planning applications approved between Jan 2023 and Jan 2024) were AQN.
		<b>Action 2.7:</b> We will require all development proposals within the borough's defined Air Quality Focus Areas demonstrate that design measures have been proposed and implemented to minimise exposure to poor air quality.	3 sites, through their air quality assessment identified that additional design measures were required to minimise exposure to poor air quality.
		<b>Action 2.8:</b> We will publish Air Quality Planning Guidance to support developers to understand our air quality and planning requirements within the Royal Borough.	We are developing additional guidance within our Climate Resilience SPD which we will be consulting on in Summer 2024.
		<b>Action 2.9:</b> We will ensure an Air Quality Positive approach is applied to future masterplans prepared in the Royal Borough and large-scale developments requiring an EIA.	We are in the process of developing a new Local Plan and this will have an air quality positive approach. We are aiming to consult on our first draft of a new local plan at the end of 2024.
		<b>Action 2.10:</b> We will require all relevant commercial kitchen planning applications to identify the most appropriate odour control measures and filtration systems to be employed.	All applications where a commercial kitchen is proposed includes conditions in respect of odour control.

Measure	LLAQM Action Matrix Theme	Action	<b>Progress</b> <ul style="list-style-type: none"> <li>• Emissions/Concentration data <ul style="list-style-type: none"> <li>• Benefits</li> </ul> </li> <li>• Negative impacts / Complaints</li> </ul>
		<b>Action 2.11:</b> We will continue to raise awareness about the Royal Borough's Smoke Control Area requirements on the council's website and enforce the provisions of the Clean Air Act.	Our website is updated with the latest information regarding the borough smoke control area and the Clean Air Act.
		<b>Action 2.12:</b> Through promotion on the Council's website and active engagement at the point of sale with local suppliers of fuels and appliances, we will raise awareness of the 'Ready to Burn' scheme and 'Eco Design' stoves regulations.	Website has up to date information in relation to Clean Air Act requirements.  Officers have liaised with local shops and suppliers of fuel to provide information on fuels and appliances.
		<b>Action 2.13:</b> We will continue to seek improvements in our existing building stock within the borough through energy efficiency and retrofit projects and explore future funding opportunities where available.	Ongoing.
		<b>Action 2.14:</b> We will use and promote the 'Retrofit Accelerator – Homes' and 'Retrofit Accelerator – Workplace' programmes to encourage the uptake of energy efficiency retrofitting projects in the borough's workplaces and houses.	Ongoing.
3.1	Public health and awareness raising	<b>Action 3.1:</b> We will continue to raise awareness about the detrimental health effects of air pollution and ensure information	Public Health have recently updated their Livewell website to better reflect the current air quality information and will continue to update as and when required.



Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;"><b>Progress</b></p> <ul style="list-style-type: none"> <li>• Emissions/Concentration data <ul style="list-style-type: none"> <li>• Benefits</li> </ul> </li> <li>• Negative impacts / Complaints</li> </ul>
		regarding local air quality is kept under review and readily available to the local community.	Public health engages with local community groups including Charlton Athletic Community Trust delivering a presentation to young people on air quality.
		<b>Action 3.2:</b> We will continue to support the airTEXT pollution alert service and promote the service more widely to local GPs and pharmacies along with promotion through the Councils website.	2024-2025 we will be looking on how we can promote airTEXT service.
		<b>Action 3.3:</b> We will continue to promote and encourage more walking and cycling in the Borough.	<p>In June 2023 RBG worked with Primary Schools to deliver a Junior Travel Ambassador Event. This included a presentation on air quality and encouraging young people to walk and cycle.</p> <p>Our recently adopted Transport Strategy is supported by an Active Travel Action Plan which sets out our approach to this issue.</p> <p>It includes specific 'Priority Actions' delivered by this scheme:</p> <ul style="list-style-type: none"> <li>- "30: Deliver events aimed at promoting walking and cycling, including continuing 'Dr Bike' initiatives for residents and businesses, and school events such as Walk to School Week and Big Bike Days."</li> </ul>

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;"><b>Progress</b></p> <ul style="list-style-type: none"> <li>• Emissions/Concentration data               <ul style="list-style-type: none"> <li>• Benefits</li> </ul> </li> <li>• Negative impacts / Complaints</li> </ul>
			<p>- "31: Continuing our travel awareness and behaviour change campaigns to encourage people to try walking, cycling and public transport. "</p> <p>- "32: Developing a programme to address low cycle ownership levels by helping establish a community cycle maintenance and recycling initiative and expanding our "Try Before You Bike" scheme to cover electric and cargo cycles."</p>
		<p><b>Action 3.4:</b> We will continue to promote and encourage the borough's schools to engage with the TfL STARS scheme and gain accreditation.</p>	<p>Currently we have 24 Gold and 6 Bronze schools, there are 28 additional schools that has engaged in 2023/24. However, we engage with all primary schools through engagement in transition resources (76 primary schools in total).</p>
		<p><b>Action 3.5:</b> We will promote and encourage the use of innovative and emerging technologies by local businesses</p>	<p>The Council funded/supported the Greener Greenwich Summit in March building on the first summit, held in 2022. This year we ran it in partnership with the Southeast London Chamber of Commerce.</p> <p>This was an event for businesses, providing a series of presentations, case studies, workshops, and networking. Together we identified 5 projects which support the achievement of the borough's net zero and</p>

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;"><b>Progress</b></p> <ul style="list-style-type: none"> <li>• Emissions/Concentration data               <ul style="list-style-type: none"> <li>• Benefits</li> </ul> </li> <li>• Negative impacts / Complaints</li> </ul>
			inclusion ambitions, to be worked on over the coming years as part of an ongoing programme of activities and events led by the Southeast London Chamber of Commerce.
4.1	Delivery servicing and freight	<b>Action 4.1:</b> In collaboration with Royal Greenwich's business community, we will explore opportunities to implement sustainable freight initiatives within the borough exploring solutions such as last mile delivery, consolidation centres, river freight and delivery retiming	This is ongoing with our Fleet Team.
		<b>Action 4.1:</b> A Traffic Management Plan will be a requirement for all relevant developments.	This is in progress.
		<b>Action 4.2:</b> We will introduce the following minimum emission standards in contracts for the use of Heavy Goods Vehicles (HGVs) and Light Duty Vehicles (LDVs) and Cars: • HGVs (>3.5T) - Euro VI • LDVs (≤3.5T) - Zero emission, or where not reasonably feasible, Euro 6 (Diesel) or Euro 4 (Petrol) • Cars – Zero or Ultra Low Emission Vehicle (ULEV), or where not reasonably feasible, Euro 6 (Diesel) or Euro 4 (Petrol).	During procurement process for any new vehicles, we ask for contracts to detail the added social value which includes detail on economic and environmental factors. We ask for all new fleet contracts or new vehicles introduced into our service to at least meet minimum emission standards, if not better.
		<b>Action 4.3:</b> We will introduce minimum emission standards in construction and works	During procurement process for any new work contracts, we ask for detail the added social

Measure	LLAQM Action Matrix Theme	Action	<b>Progress</b> <ul style="list-style-type: none"> <li>• Emissions/Concentration data</li> <li>• Benefits</li> <li>• Negative impacts / Complaints</li> </ul>
		contracts for construction machinery (Non-Road Mobile Machinery – NRMM) aligned with the Mayor of London’s NRMM Low Emission Zone Central Activities Zone (CAZ) and Opportunity Areas standard but be applicable to all contracts across the whole borough.	value which includes detail on economic and environmental factors. We ask for all new works contracts for NRMM to meet at least the minimum standards, if not better.
5.1	Reducing emissions from council fleets	<b>Action 5.1:</b> Our vehicle fleet will meet the following minimum emission standards • HGVs (>3.5T) - Euro VI • LDVs (≤3.5T) - Euro 6 (Diesel) or Euro 4 (Petrol)	We are on track to deliver this target. In relation to HGVs, only 5 vehicles in the Council’s gritting fleet are below Euro VI and are on track to be disposed of before Summer ’25. In relation to vehicles up to 3.5 tonnes, only 5 diesel vehicles are below Euro 6 due to manufacturing delays delaying their replacement.
		<b>Action 5.2:</b> We will continue to replace and upgrade our vehicle fleet with zero emission vehicles when reasonably feasible to achieve our goal of 100% zero emissions vehicles by 2030	Any remaining Euro 5 vehicles will be replaced by the due date as part of the vehicle replacement plan. The current number of owned EV’s is 30 which represents 7.3% of the RBG fleet.
		<b>Action 5.3:</b> We will maintain a minimum Bronze level as a FORS Accredited Operator.	Our Fleet client team are in the process for preparing the FORS Audits to ensure continuation of the Bronze standard of Accredited Operator status.
6.1	Localised solutions	<b>Action 6.1:</b> We will use the new Green Infrastructure Framework to inform our revised	We are currently focused on developing a new Climate Resilience SPD and Local Plan. Any new Green Infrastructure Framework will be

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;"><b>Progress</b></p> <ul style="list-style-type: none"> <li>• Emissions/Concentration data               <ul style="list-style-type: none"> <li>• Benefits</li> </ul> </li> <li>• Negative impacts / Complaints</li> </ul>
		Local Plan and our future Green Infrastructure Strategy.	considered jointly in future with all relevant departments.
		<b>Action 6.2:</b> We will commission a baseline tree canopy survey to better inform the value and benefits of the Royal Borough's trees and aid the development of our future Green Infrastructure Strategy	We have now completed tree canopy baseline assessment in association with ITree/Treeconomics which we will be using to assess periodic canopy cover / ecosystem benefits changes (when reassessed) and to inform some of our tree planting.
		<b>Action 6.3:</b> We will plant 5000 trees by the end of 2026 as part of the strategy to increase tree canopy within the Royal Borough.	We are on track to deliver the 5000 new trees by 2026 (combination of small whip and larger standard tree planting).
		<b>Action 6.4:</b> We will prepare a Green Infrastructure Strategy and ensure GI supports both Air Quality Neutral and Air Quality Positive policy approaches to development in the borough and reduced exposure to air pollution.	We are currently focused on developing a new Climate Resilience SPD and Local Plan. Any new Green Infrastructure Framework will be considered jointly in future with all relevant departments. Our new local plan and Climate resilience SPD will consider Air Quality in their policies.
		<b>Action 6.5:</b> We will combine 'Green Infrastructure' and the 'Healthy Streets' Approach in public high street design to create greener walking and cycling routes to encourage active travel options away from the borough's most polluted streets.	The Council's Transport Strategy was adopted in 2022 and contains several objectives relating to this – on healthier, greener, and cleaner Greenwich. In planning we have adopted our Urban Design Guide SPD in 2023, which deals with all elements of street and open space

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;"><b>Progress</b></p> <ul style="list-style-type: none"> <li>• Emissions/Concentration data <ul style="list-style-type: none"> <li>• Benefits</li> </ul> </li> <li>• Negative impacts / Complaints</li> </ul>
			<p>design. We will address this further in the new Local Plan.</p> <p>Implementation of localised healthy walking routes:</p> <p>Our recently adopted Transport Strategy's supporting Active Travel Policy Framework Action Plan sets Priority Action 7: "Improving the walking network around our town centres in line with the recommendations in the walking analysis..." In Eltham Town Centre and Priority Action 8: "Improving the walking network to and from public transport hubs, making it easier for people to connect between modes"</p>
7.1	Cleaner transport	<p><b>Action 7.1:</b> We will invest and work with TfL to implement the expansion and improvement of cycling infrastructure focussing particularly on the south and east of the borough and designated Opportunity Areas.</p>	<p>Work underway with TfL to develop the following cycle routes: Greenwich Town Centre interim connection. Eltham to Greenwich; and Shooters Hill to Greenwich Plumstead to Abbey Wood</p>
		<p><b>Action 7.2:</b> We will deliver the Active Travel Policy Framework Action Plan to support our local community in the transition to reduced reliance on cars and encourage walking or cycling.</p>	<p>Active travel plan published, and programmes being developed to support what was published within the Framework.</p>

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;"><b>Progress</b></p> <ul style="list-style-type: none"> <li>• Emissions/Concentration data               <ul style="list-style-type: none"> <li>• Benefits</li> </ul> </li> <li>• Negative impacts / Complaints</li> </ul>
		<p><b>Action 7.3:</b> We will work with Transport for London to support and lobby for public transport improvements across the borough that foster connectivity, particularly north-south connections, and links to Thamesmead and Abbey Wood.</p>	<p>Business case submitted to Central Government on behalf of the Partnership co-chaired by the Council. Secured £300m for Bus Rapid Transit and continue to work on building the case for funding the DLR. Gove speech referenced the area as part of 'Docklands 2.0, which is a positive sign of the Government's attitude to the submission.</p>
		<p><b>Action 7.4:</b> We will continue to promote and support car club providers to encourage membership in the Royal Borough and the increased use of electric vehicles.</p>	<p>Promotion of car clubs ongoing, with desire to increase provision across the borough. Development of EV charging points infrastructure across the borough with business case being developed and LEVI application being put together.</p>
		<p><b>Action 7.5:</b> We will deliver the Electric Vehicle Policy Framework Action Plan to implement a comprehensive charging infrastructure network across the borough.</p>	<p>Proposals for a licencing /concessions approach to create a step-change in EV charging provision considered in a decision earlier this year, currently business case is under review by internal Greenwich legal &amp; finance teams.</p>
		<p><b>Action 7.6:</b> We will continue to use and promote the Workplace Charging Scheme in the borough to encourage and expand the workplace EV Infrastructure.</p>	<p>Ongoing and Conversations to be held with Employment &amp; Skills team to promote this further.</p>
		<p><b>Action 7.7:</b> We will engage with local communities and using an evidence-based</p>	<p>We are currently working on a project to prioritise areas for consideration for traffic</p>

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;"><b>Progress</b></p> <ul style="list-style-type: none"> <li>• Emissions/Concentration data <ul style="list-style-type: none"> <li>• Benefits</li> </ul> </li> <li>• Negative impacts / Complaints</li> </ul>
		<p>approach, we will identify areas in the Royal Borough that would most benefit from the implementation of through-traffic reduction schemes.</p>	<p>management schemes like this. We have commissioned consultants to help us collect and evaluate the evidence to support this work, such as traffic flow and collision data.</p> <p>A scrutiny meeting to consider the neighbourhood management project for west and east Greenwich has been postponed until after the upcoming Mottingham, Coldharbour and New Eltham by-election.</p>
		<p><b>Action 7.8:</b> We will support any through-traffic reduction scheme identified for potential implementation with real-time air quality monitoring.</p>	<p>As above.</p>
		<p><b>Action 7.9:</b> We will review the lessons learnt from the permanent and temporary School Streets and explore their continuation and expansion to other schools in the borough.</p>	<p>Working to make the 11 trial school streets permanent and deliver 20 new school streets over the next 24 months.</p>
		<p><b>Action 7.10:</b> We will support School Streets identified for potential implementation with real-time air quality monitoring</p>	<p>As above.</p>
		<p><b>Action 7.11:</b> We will expand the coverage of Controlled Parking Zones (CPZ's) to the whole borough.</p>	<p>Delivery of 5 CPZ's completed and commitment of developing 6 more over the next 24 months.</p>
		<p><b>Action 7.12:</b> We will progress an emission-based charging structure to help drive the</p>	<p>We introduced changes to parking charges as well as resident and business permits, as part</p>



Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;"><b>Progress</b></p> <ul style="list-style-type: none"> <li>• Emissions/Concentration data               <ul style="list-style-type: none"> <li>• Benefits</li> </ul> </li> <li>• Negative impacts / Complaints</li> </ul>
		purchase of low emission vehicles in Royal Greenwich	of our commitment to achieving net zero carbon emissions by 2030. Since 24th July 2023, charges have been based on vehicles' carbon dioxide (CO <sub>2</sub> ) emissions. This means that vehicles with low emissions will be charged less than those with higher emissions.
		<b>Action 7.13:</b> We will investigate the benefits of introducing road user charging measures such as a workplace parking levy.	Identified as priority in the Transport Strategy and being explored.

### 3. Planning Update and Other New Sources of Emissions

**Table M. Planning requirements met by planning applications in Royal Borough of Greenwich in 2023**

Condition	Number
Number of planning applications where an air quality impact assessment was reviewed for air quality impacts	9
Number of planning applications required to monitor for construction dust	9
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 <sub>x</sub> boilers	Unsure/unable to extract data
Number of developments where an AQ Neutral building and/or transport assessments undertaken	9
Number of developments where the AQ Neutral building and/or transport assessments not meeting the benchmark and so required to include additional mitigation	3
Number of planning applications with S106 agreements including other requirements to improve air quality	0
Number of planning applications with CIL payments that include a contribution to improve air quality	CIL is not apportioned to individual issues and is collected based on amount of floorspace created. It all goes into a pot to be divided up later.
<p><b>NRMM: Central Activity Zone, Canary Wharf and Opportunity Areas</b></p> <p>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 <a href="#">NRMM website</a> and that all NRMM used on-site is compliant with Stage IV of the Directive and/or exemptions to the policy.</p>	N/A
<p><b>NRMM: Greater London (excluding Central Activity Zone, Canary Wharf and Opportunity Areas)</b></p> <p>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 <a href="http://www.nrmm.london">www.nrmm.london</a> and that all NRMM used on-site is compliant with Stage IIIB of the Directive and/or exemptions to the policy.</p>	8

### **3.1 New or significantly changed industrial or other sources**

No new point of source identified. However, the Silvertown Tunnel Infrastructure project continues to require ongoing engagement with the council.

## **4. Additional Activities to Improve Air Quality**

### **4.1 London Borough of Greenwich Fleet**

The Borough fleet has 30 electric vehicles which represents 7.3% of the RBG fleet.

### **4.2 NRMM Enforcement Project**

The Borough is continuing to support the NRMM Enforcement project in 2024-2025.

The standard wording used for NRMM conditions forms part of our construction management plan and is follows:

*Prior to the commencement of the development, a Demolition/Construction Management Plan (D/CMP) shall be submitted to, and approved in writing by, the Local Planning Authority to minimise impacts to the local highway network and to control noise, vibration and air pollutants generated as a result of the construction process.*

*These documents shall be prepared in accordance with the London Freight Plan, 'The control of dust and emissions from construction and demolition' Supplementary Planning Guidance, the Council's Construction Site Noise Code of Practice, BRE Pollution Control Guides 'Controlling particles and noise pollution from construction sites' and 'Controlling particles, vapour and noise pollution from construction sites'. The D/CMP shall include details of (but shall not be limited to):*

- *loading and unloading of plant and materials;*
- *storage of plant and materials;*
- *programme of works;*
- *measures for traffic management and encouragement of sustainable modes of transport for workers;*
- *details of a vehicle booking system*
- *provision of boundary hoarding and visibility zones of construction traffic routing;*
- *hours of construction;*
- *means to prevent deposition of mud on the highway;*
- *likely noise levels to be generated from plant and construction works;*
- *a dust risk assessment using an objective method of measurement for each working site;*
- *means to monitor and control dust, noise and vibrations;*
- *haulage routes;*
- *a site plan identifying location of site entrance, exit, wheel washing, hard standing hoarding (distinguishing between solid hoarding and other barriers such as heras and monarflex sheeting), stock piles, dust suppression, location of water supplies and location of nearest neighbouring receptors;*
- *bonfire policy;*
- *confirmation that a mobile crusher will/won't be used on site and if so, a copy of the permit and intended dates of operation;*

- *details of an air quality impact assessment for the construction phase, including details of monitoring (with particular reference to particulates);*
- *confirmation of all Non-Road Mobile Machinery (NRMM) to be used, or a statement confirming that NRMM will not be used. All Non-Road Mobile Machinery (NRMM) and plant to be used on site of net power between 37kW and 560 kW must be registered at <http://nrmm.london/>. An inventory of all Non-Road Mobile Machinery (NRMM) shall be kept on site during the course of 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;*

*The development shall be carried out in accordance with the approved details.*

**Reason 9:**

*To ensure that the proposed development does not interfere with the free flow of traffic and conditions of safety on the public highway, and to ensure the development process does not have a significant adverse impact on the amenities of nearby residential properties in accordance with Policies E(a) and IM5 of the Royal Greenwich Local Plan: Core Strategy with Detailed Policies (2014).*

**4.2 Air Quality Alerts**

The borough support airTEXT (<https://www.airtext.info/>) and information provided on the website as below:

[https://www.royalgreenwich.gov.uk/info/200205/pollution\\_and\\_noise/885/air\\_pollution\\_warnings\\_by\\_text](https://www.royalgreenwich.gov.uk/info/200205/pollution_and_noise/885/air_pollution_warnings_by_text)

The website also provides advice for people susceptible to air pollution.

**Appendix A Details of Monitoring Site Quality QA/QC**

**A.1 Automatic Monitoring Sites**

A Local Site Operator (LSO) visits the monitoring sites every two weeks to visually inspect and check the site operation and to carry out zero/span calibration of the gas analysers. Six monthly UKAS accredited independent equipment audits are carried out by the National Physical Laboratory (NPL) which also carry out on-site certification of gas cylinders. Additionally, six monthly equipment service visits are carried out by Enviro Technology Services Plc.

## PM<sub>10</sub> Monitoring Adjustment

PM<sub>10</sub> measurements are automatically recalculated as EU reference equivalent using the Volatile Correction Model (VCM) – Correction applied to TEOM measurements.

### **A.2 Diffusion Tubes**

- Diffusion Tubes are prepared and analysed by UKAS accredited Gradko International Ltd.
- Diffusion Tubes are prepared using 50% triethanolamine with acetone method and analysed using UV spectrometry.
- The lab follows the procedures set out in the Defra Technical Guidance for LAQM TG (19).
- Laboratory Precision Results:  
Gradko participates in the AIR-PT scheme. This is a performance testing programme that has combined two long running PT (proficiency testing) schemes – LCC Standards STAKCS PT scheme and HSL Workplace Analysis Scheme for Proficiency (WASP). The latest results available for Gradko for the latest two periods show that 100% of results have a deviation of less than two, meaning all results were satisfactory.

## Discussion of Choice of Factor to Use

A local bias adjustment factor calculated from Royal Borough of Greenwich co-location diffusion tubes was used. The local bias adjustment factor is 0.84. The impact of this will mean that our readings will be higher than if the National Bias Adjustment Factor (0.83, spreadsheet version 03/24) were used so that a more conservative approach is adopted. 4 co-location studies with a good overall precision and good data capture were used to calculate the local bias adjustment factor of 0.84. Despite there being 7 co-location studies within the Royal Borough of Greenwich, 3 were excluded from the analysis due to insufficient data capture (below 85%). These included Eltham, Woolwich Flyover, Crown Wood Way and John Harrison Way.

### Calculation of local bias adjustment factor using the 4 of good data capture

	STEP 3a Local Bias Adjustment Input 1	STEP 3b Local Bias Adjustment Input 2	STEP 3c Local Bias Adjustment Input 3	STEP 3d Local Bias Adjustment Input 4
Periods used to calculate bias	10	11	11	11
Bias Adjustment Factor A	0.87 (0.82 - 0.93)	0.81 (0.75 - 0.89)	0.95 (0.89 - 1.02)	0.76 (0.7 - 0.82)
Diffusion Tube Bias B	15% (8% - 22%)	23% (13% - 34%)	5% (-2% - 12%)	32% (22% - 43%)
Diffusion Tube Mean ( $\mu\text{g}/\text{m}^3$ )	30.4	26.1	24.1	29.4
Mean CV (Precision)	3.5%	3.5%	2.8%	5.1%
Automatic Mean ( $\mu\text{g}/\text{m}^3$ )	26.4	21.2	22.9	22.3
Data Capture	98%	100%	97%	100%
Adjusted Tube Mean ( $\mu\text{g}/\text{m}^3$ )	26 (25 - 28)	21 (20 - 23)	23 (21 - 25)	22 (21 - 24)

Overall Diffusion Tube Precision	Good Overall Precision	Good Overall Precision	Good Overall Precision	Good Overall Precision
Overall Continuous Monitor Data Capture	Good Overall Data Capture	Good Overall Data Capture	Good Overall Data Capture	Good Overall Data Capture

Combined Local Bias Adjustment Factor	0.84
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**Table N. Bias Adjustment Factor**

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2023	Local	-	0.84
2022	Local	-	0.82
2021	Local	Bureau Veritas in house calculation	0.83
2020	Local	Bureau Veritas in house calculation	0.82
2019	LWEP	-	0.90
2018	LWEP	-	0.85
2017	LWEP	-	0.93
2016	LWEP	-	0.97

**Table O. Short-Term to Long-Term Monitoring Data Adjustment**

Site ID	Annualisation Factor Site 1 Name	Annualisation Factor Site 2 Name	Annualisation Factor Site 3 Name	Annualisation Factor Site 4 Name	Average Annualisation Factor	Raw Data Annual Mean ( $\mu\text{g m}^{-3}$ )	Annualised Annual Mean ( $\mu\text{g m}^{-3}$ )	Comments
GW26	0.9330	0.9952	0.9606	0.9907	0.9699	19.1	-	
GW37	1.0960	1.0863	1.1254	1.0754	1.0958	17.1	-	
GW48	1.0529	1.1283	1.0361	1.1231	1.0851	31.7	34.4	
GW104	0.9337	1.0017	0.9581	1.0358	0.9823	33.4	-	

The data capture for all our monitoring sites is between 75-100%, with the exception.

- a. GB6: NO<sub>2</sub> (70%) PM10 (66%), PM2.5 (62%)
- b. GN5: NO<sub>2</sub> (62%)
- c. GN6: PM2.5 ( 64%)
- d. GR8: NO<sub>2</sub> (55%), PM10 (74%)

The low capture rate at GB6 and GR8 in both cases is due to technical issues with the power supply. The low capture rate for the PM2.5 at GN6, is due to a failure of the FDMS Unit. Due to ongoing manufacturing and supply issues, it took few months to source a new dryer. The NO<sub>x</sub> analyser at GN5 needed a new part (Ozone generator) and in this case it took few months to source a new part.

**Annualisation of NO<sub>2</sub> for GB6 Falconwood**

Original Annual Mean	Annualisation Factor	Annualised Mean
16	1.089	17.4

**Table P. NO<sub>2</sub> Fall off With Distance Calculations** Error! Bookmark not defined.

Site	Site Type	Annual Mean (ug/m3)	Period mean (ug/m3)	Ratio
Bexley- Belvedere	Background	15.4	13.8	1.116
Lewisham- Deptford	Background	16.4	15.6	1.063
Average				1.089

**Annualisation of PM<sub>2.5</sub> for GB6 Falconwood**

Original Annual Mean	Annualisation Factor	Annualised Mean
9	0.965	8.7



Site	Site Type	Annual Mean (ug/m3)	Period mean (ug/m3)	Ratio
Bexley Belvedere	Background	7.8	8.2	0.953
Lewisham- Deptford	Background	9.8	10	0.977
Average				0.965

#### Annualisation of PM10 for GB6 Falconwood

Original Annual Mean	Annualisation Factor	Annualised Mean
16	0.989	15.8

Site	Site Type	Annual Mean (ug/m3)	Period mean (ug/m3)	Ratio
Bexley Belvedere	Background	11.2	11.4	0.98

Tower Hamlets- Jubilee Park	Background	13.4	13.4	0.999
Average				0.989

#### Annualisation of NO<sub>2</sub> for GN5 Hoskins St

Original Annual Mean		Annualisation Factor		Annualised Mean
28		1.105		30.9
<b>Site</b>	<b>Site Type</b>	<b>Annual Mean (ug/m3)</b>	<b>Period mean (ug/m3)</b>	<b>Ratio</b>
Bexley Belvedere	Background	15.4	14.6	1.056
Lewisham Deptford	Background	16.5	14.3	1.153
Average				1.104

**Annualisation of PM2.5 for GN6 John Harrison Way**

Original Annual Mean		Annualisation Factor		Annualised Mean
9		0.909		8.2
Site	Site Type	Annual Mean (ug/m3)	Period mean (ug/m3)	Ratio
Bexley Belvedere	Background	7.8	8.7	0.896
Lewisham Deptford	Background	9.8	10.6	0.921
Average				0.908

**Annualisation of NO<sub>2</sub> for GR8 Woolwich Flyover**

Original Annual Mean		Annualisation Factor		Annualised Mean
33		1.004		33.1
Site	Site Type	Annual Mean (ug/m3)	Period mean (ug/m3)	Ratio

Bexley Belvedere	Background	15	15.1	1.02
Lewisham Deptford	Background	16.5	16.7	0.987
Average				1.003

#### Annualisation of PM10 for GR8 Woolwich Flyover

Original Annual Mean		Annualisation Factor		Annualised Mean
17		0.963		16.4
<b>Site</b>	<b>Site Type</b>	<b>Annual Mean (ug/m3)</b>	<b>Period mean (ug/m3)</b>	<b>Ratio</b>
Bexley Belvedere	Background	11.2	11.7	0.961
Tower Hamlets- Jubilee Park	Background	13.4	13.9	0.964

Average				0.962
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## Appendix B Full Monthly Diffusion Tube Results for 2023

Table Q. NO<sub>2</sub> 2023 Diffusion Tube Results (µg/m<sup>3</sup>)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.84)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
GW23	540420	177706	36.3	<b>43.4</b>	28.9		37.2	23.8	15.5	24.1	28.8	27.4	29.5	19.1	28.6	24.0		
GW24	543806	177951	38.9	<b>46.1</b>	37.6		49.6	38.3	25.5	34.9	40.5	37.3	32.9	25.9	36.8	31.0		
GW25	540099	174881	30.6	<b>35.0</b>	22.9		23.8	26.1	16.5	23.5	28.5	28.5	28.8	17.2	25.6	21.6		
GW26	544015	173139	23.9	<b>25.6</b>	19.7		18.2	15.3	11.8	14.3		19.7	22.0		19.1	16.1		
GW27	541645	177874	38.3	<b>40.8</b>	28.3		29.4	28.7	21.1	28.4	31.9	33.0	33.0	23.8	30.7	25.8		
GW29	541167	178512	44.5	<b>46.4</b>	38.3		34.0	35.2	25.1	34.1	37.3	35.8	34.6	31.1	36.2	30.4		
GW32	540664	177235	37.5	<b>43.4</b>	29.7		19.2	26.3	18.9	27.7	29.7	31.8	33.4	26.3	29.8	25.1		
GW33	537971	176776		<b>47.6</b>	40.0		50.9	42.0	28.4	38.7	47.5	42.2	37.9	26.0	40.0	33.6		
GW34	545490	178543	38.3	<b>40.9</b>	27.8		22.6	27.7	20.7	25.8	32.4	33.8	31.8	23.0	29.6	24.9		
GW35	539527	178281	43.4	<b>50.0</b>	34.9		25.6	38.7	26.9	35.7	37.9	38.9	35.6	31.9	36.4	30.6		
GW36	539320	179234	37.5	<b>38.6</b>	28.3		19.1	28.1	14.9	26.9	32.7	28.6	28.8	26.6	28.4	23.9		
GW37	546630	179557			17.5		13.0	15.3	9.4	16.2	18.5	20.9	22.9	16.3	17.1	14.4		
GW38a	541885	175045	25.6	<b>29.6</b>	22.1		26.4	19.6	13.6	19.1	23.6	26.3	23.8	13.5	22.1	18.6		
GW39a	543986	174660	18.8	<b>21.0</b>	13.5		9.1	12.0	8.5	11.8	13.9	15.4	14.4	12.6	-	-		Triplicate Site with GW39a, GW39b and GW39c - Annual data provided for GW39c only
GW39b	543986	174660	18.7	<b>21.2</b>	13.4		9.1	11.9	7.9	10.8	14.4	14.5	17.6	11.3	-	-		Triplicate Site with GW39a, GW39b and GW39c - Annual data provided for GW39c only

GW39c	543986	174660	20.2	<b>22.3</b>	13.0		9.6	11.7		11.9	14.2	15.2	17.2	12.8	14.0	11.8		Triplicate Site with GW39a, GW39b and GW39c - Annual data provided for GW39c only
GW40	544065	176996		<b>19.9</b>	12.6		8.9	10.6	7.5	11.8	12.5	13.6	19.6	12.3	13.2	11.1		
GW41	543391	172765	39.3	<b>42.6</b>	28.7		24.5	32.9	22.2	28.7	29.1	27.7	32.3	22.1	30.0	25.3		
GW42	538317	177652	36.4	<b>42.4</b>	34.4		36.4	31.9		31.4	38.1	34.3	33.9	24.6	34.3	28.9		
GW43	537353	177632	34.3	<b>40.8</b>	29.6		26.9	29.4	18.5	27.5	34.5	35.3	32.5	26.2	30.6	25.8		
GW44	543096	174439	48.6	<b>50.2</b>			50.5	46.0	28.6	43.5	49.5	43.9	44.3	33.5	43.9	37.0		
GW106	543505	178576	33.7	<b>47.8</b>	30.3		29.1	26.1	19.2	27.3	30.9	28.8	33.8	23.9	30.3	25.5		
GW48	538044	176960	42.6		33.9			30.1	24.1	29.8			34.5	25.0	31.7	29.0		
GW49	543472	179217	41.2	<b>45.9</b>	29.9		23.1	36.3	25.8	33.3	35.9	31.6	35.4	25.4	33.2	27.9		
GW50a	540203	178367	53.4	<b>59.3</b>	46.6		20.6	53.5	42.4	49.6	56.4	53.1	42.1	43.1	-	-		Triplicate Site with GW50a, GW50b and GW50c - Annual data provided for GW50c only
GW50b	540203	178367	52.5	<b>59.8</b>	40.7		20.6	53.0	41.7	47.0	52.1	48.6	45.8	44.0	-	-		Triplicate Site with GW50a, GW50b and GW50c - Annual data provided for GW50c only
GW50c	540203	178367	49.5	<b>54.6</b>	44.6		19.4	53.2	40.7	45.0	47.4	44.5	46.6	40.9	46.0	38.7		Triplicate Site with GW50a, GW50b and GW50c - Annual data provided for GW50c only
GW51	539638	179024	41.2	<b>40.6</b>	29.7		19.8	32.1	21.0	33.3	34.0	37.0	32.7	29.3	32.1	27.0		
GW52	542842	179108	30.1	<b>34.9</b>	21.7		23.1	21.6	13.7	19.8	24.9	21.8	27.3	15.5	23.2	19.6		
GW53	542181	176878	32.8	<b>37.8</b>	24.6		16.7	22.6	16.4	25.4	27.4	26.5	28.8	19.0	25.6	21.5		
GW54	541915	175039	41.5	<b>46.5</b>	39.7		51.9	36.0	24.7	30.7	39.1	39.4	36.9	29.4	37.6	31.7		
GW55a	545005	175097	33.2	<b>36.5</b>	28.5		35.9	33.3	17.5	25.8	28.4	27.9	27.7	14.9	-	-		Triplicate Site with GW55a, GW55b and GW55c - Annual data provided for GW55c only

GW55b	545005	175097	29.3	<b>38.6</b>	27.5		35.1	27.6	17.9	25.1	29.0	28.9	28.3	16.8	-	-		Triplicate Site with GW55a, GW55b and GW55c - Annual data provided for GW55c only
GW55c	545005	175097	37.2	<b>37.4</b>	27.9		38.7	28.3	17.7	25.0	28.6	28.2	28.2	18.6	28.0	23.6		Triplicate Site with GW55a, GW55b and GW55c - Annual data provided for GW55c only
GW56	543679	172598	39.6	<b>42.9</b>	27.6		19.2	32.4	24.7	29.3	36.3	34.1	32.6	21.7	31.0	26.1		
GW57a	538968	177955	35.0	<b>34.1</b>	26.0		16.2	22.9	15.4	24.0	24.9	27.1	25.3	21.8	25.0	21.1		
GW58a	538143	176712	36.5	<b>39.0</b>	31.0		30.7	27.1	20.0	28.5	31.9	32.6	29.1	22.2	-	-		Triplicate Site with GW58a, GW58b and GW58c - Annual data provided for GW58c only
GW58b	538143	176712	37.6	<b>37.6</b>	31.5		35.6	27.4	19.9	29.3	31.7	32.6	28.5	21.9	-	-		Triplicate Site with GW58a, GW58b and GW58c - Annual data provided for GW58c only
GW58c	538143	176712	38.1	<b>35.1</b>	33.9		34.3	27.6	19.6	29.3	29.2	31.4	30.5	21.5	30.2	25.4		Triplicate Site with GW58a, GW58b and GW58c - Annual data provided for GW58c only
GW59a	541883	175016	29.2	<b>31.1</b>	25.3		35.9	24.2	15.0	23.1	30.6	27.0	24.8	16.5	-	-		Triplicate Site with GW59a, GW59b and GW59c - Annual data provided for GW59c only
GW59b	541883	175016	30.5	<b>31.6</b>	24.4		38.4	23.3	15.6	23.8	29.8	29.7	24.0	17.8	-	-		Triplicate Site with GW59a, GW59b and GW59c - Annual data provided for GW59c only
GW59c	541883	175016	31.5	<b>33.4</b>	23.8		37.1	24.6	15.7	23.8	28.4	29.7	25.7	16.5	26.0	21.9		Triplicate Site with GW59a, GW59b and GW59c - Annual data provided for GW59c only



GW60a	544086	178882	32.4	<b>35.3</b>	23.3		27.6	20.9	14.1	20.8	22.8	24.5	25.5	20.0	-	-		Triplicate Site with GW60a, GW60b and GW60c - Annual data provided for GW60c only
GW60b	544086	178882	31.0	<b>32.0</b>	22.8		26.8	21.2	13.9	21.9	22.0	23.5	26.9	17.8	-	-		Triplicate Site with GW60a, GW60b and GW60c - Annual data provided for GW60c only
GW60c	544086	178882	32.9	<b>32.9</b>	23.5		27.9	21.0	13.9	21.3	23.5	25.0	26.1	19.5	24.1	20.3		Triplicate Site with GW60a, GW60b and GW60c - Annual data provided for GW60c only
GW101	544727	178884	49.8	<b>60.4</b>	47.6		49.5	47.2	38.4	47.8	57.9		47.1	39.7	48.6	40.9		
GW102	544075	178898	47.7	<b>58.1</b>	42.9		51.1	46.4	27.3	42.3	49.3	42.5	37.1	34.7	43.4	36.5		
GW61a	539687	179123	42.6	<b>43.4</b>	26.5		16.5	25.7	20.9	27.8	29.1	33.1	33.0	26.6	-	-		Triplicate Site with GW61a, GW61b and GW61c - Annual data provided for GW61c only
GW61b	539687	179123	37.3	<b>43.9</b>	28.9		16.6	26.5	21.8	29.1	27.3	31.7	31.4	31.3	-	-		Triplicate Site with GW61a, GW61b and GW61c - Annual data provided for GW61c only
GW61c	539687	179123	34.7	<b>43.2</b>	28.0		17.2	29.3	18.6	28.3	30.0	30.9	32.5	28.1	29.7	25.0		Triplicate Site with GW61a, GW61b and GW61c - Annual data provided for GW61c only
GW31	543383	175664	34.8	<b>40.5</b>	26.3		23.1	26.7	18.0	25.5	27.8	28.6	32.2	23.7	28.1	23.7		
GW103	540935	176575	38.2	<b>38.4</b>	28.0		13.4	28.6	19.6	25.0	29.4	32.9	31.9	26.3	28.6	24.1		
GW104	540743	177072	43.5	<b>48.4</b>			17.1	35.1	24.3	31.4	37.2	30.1	31.9		33.4	28.2		
GW105	541143	174294	41.9	<b>48.9</b>	33.9		34.2	40.8	27.3	36.3	39.6	36.9	36.8	29.6	36.8	31.0		
GW30	541372	177070	33.4	<b>38.6</b>	26.6		21.5	25.6	17.2	25.9	29.8	30.9	30.7	23.6	27.8	23.4		
GW28	542656	176207	32.5	<b>33.8</b>	23.0		19.5	18.0	14.1	18.4	23.7	24.8	26.4	17.8	23.1	19.4		

- All erroneous data has been removed from the NO<sub>2</sub> diffusion tube dataset presented in Table .
- 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.
- Royal Greenwich confirm that all 2023 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.

**Notes:**

Exceedances of the NO<sub>2</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.

NO<sub>2</sub> annual means exceeding 60µg/m<sup>3</sup>, indicating a potential exceedance of the NO<sub>2</sub> 1-hour mean objective are shown in **bold and underlined**.

See Appendix C for details on bias adjustment and annualisation.

## Appendix C Map(s) of Monitoring Locations and AQMAs

### Figure A. Map of Non-Automatic Monitoring Site(s)

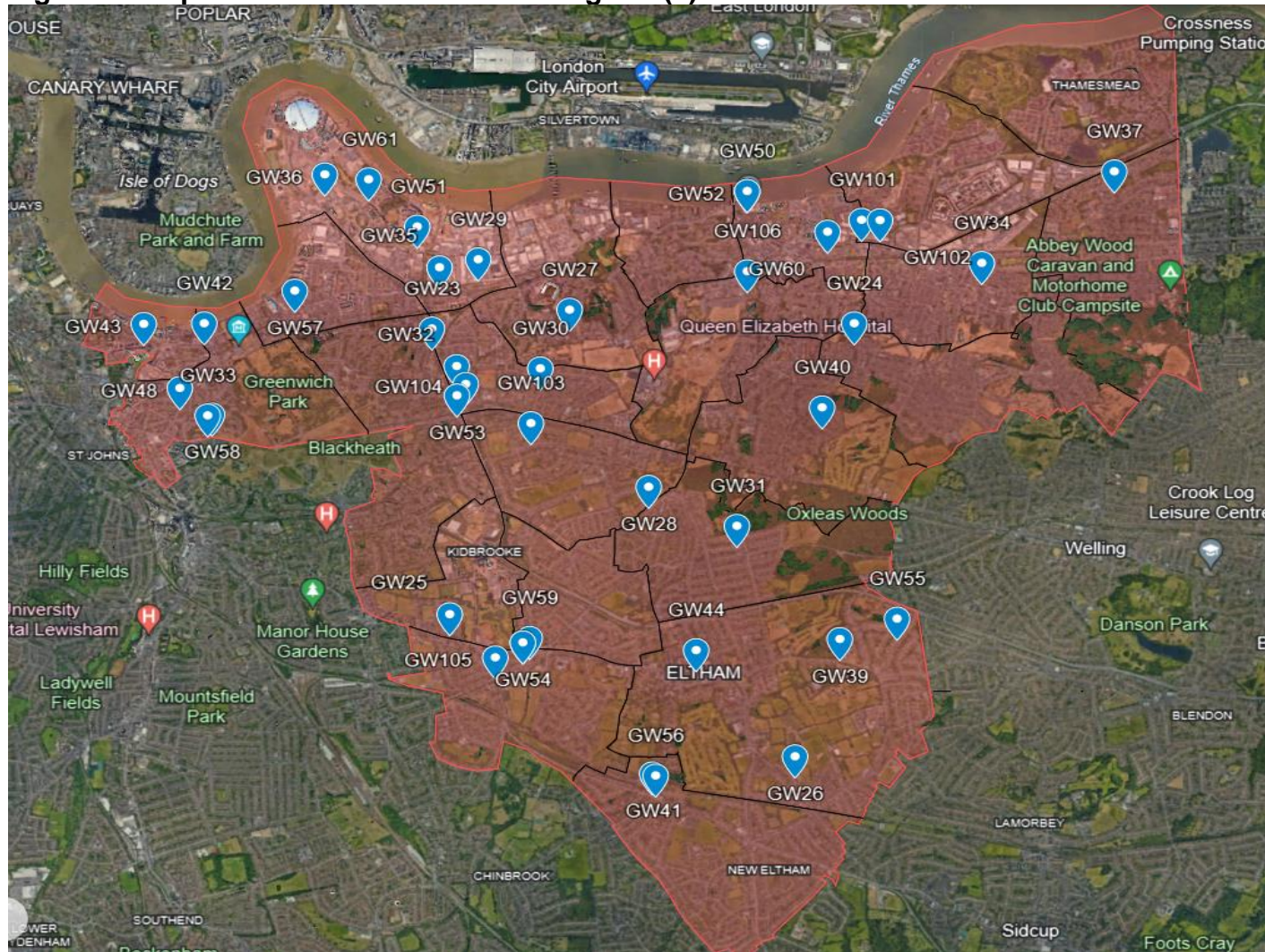


Figure B. Map of Automatic Monitoring Site(s)

