London Borough of Lewisham Air Quality Annual Status Report for 2024

Date of publication: May 2025

This report provides a detailed overview of air quality in the London Borough of Lewisham during 2024. It has been produced to meet the requirements of the London Local Air Quality Management (LLAQM) statutory process[1].

Contact details:

The London Borough of Lewisham

Environmental Protection Team

9 Holbeach Road

Catford

SE6 4TW

environmentalprotection@lewisham.gov.uk

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

Contents

Tables

Figures

Abbreviations

Abbreviation	Description
AQAP	Air Quality Action Plan
AQG	Air Quality Guidelines
AQMA	Air Quality Management Area
AQN	Air Quality Neutral
AQO	Air Quality Objective
AQP	Air Quality Positive
CCG	Clinical Commissioning Group
DPH	Director of Public Health
DPLN	Deptford Parks Liveable Neighbourhood
EPC	Energy Performance Certificate
ERG	Environmental Research Group
EVCP	Electric Vehicle Charging Points
HMO	Housing in Multiple Occupancy
HSL	Health and Safety Laboratory
JSNA	Joint Strategic Needs Assessment
KPI	Key Performance Indicator
LAEI	London Atmospheric Emissions Inventory
LAQM	Local Air Quality Management
LBL	London Borough of Lewisham
LIP	Local Implementation Plan
LLAQM	London Local Air Quality Management
NRMM	Non-Road Mobile Machinery
PM10	Particulate matter less than 10 micron in diameter
PM2.5	Particulate matter less than 2.5 micron in diameter
STARS	Sustainable Travel: Active, Responsible, Safe
TEA	Triethanolamine
TfL	Transport for London
ULEZ	Ultra Low Emission Zone

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 ($PM_{2.5}$)	10 µg m^{-3}[3]	Annual mean	2040
Particles ($PM_{2.5}$)	London Mayoral Objective[4]: 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) Environmental Target Regulations under the Environment Act 2021

(4) London Mayoral Objective

1. Air Quality Monitoring

1.1 Locations

Table B. Details of Automatic Monitoring Sites for 2024

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)
LW6	Lewisham 6 (Laurence House, Catford)	Roadside	537588	173606	NO_2	Y	Lewisham AQMA	Chemiluminescence	n/a	3.6	1.5
LW2	Lewisham 2 (New Cross)	Roadside	536241	176932	NO_2, PM_{10}, $PM_{2.5}$	Y	Lewisham AQMA	Chemiluminescence, TEOM-FDMS	0	6.0	2.5
LW4	Lewisham 4 (Loampit Vale)	Roadside	537912	175838	NO_2, PM_{10}	Y	Lewisham AQMA	Chemiluminescence, BAM	0	7.0	2.5
LW5	Lewisham Deptford	Urban Background	537228	177471	NO_2, $PM_{2.5}$	Y	Lewisham AQMA	Chemiluminescence, TEOM-FDMS	24	2.0	2.5
HP1	Honor Oak Park	Urban Background	536473	174128	NO_2, PM_{10}, $PM_{2.5}$	Y	Crofton Park and Honor Oak Park AQMA	Chemiluminescence, TEOM-FDMS	n/a	n/a	5.0

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

There were five continuous monitoring stations in operation within the London Borough of Lewisham (LBL) during 2024. The previous LW1 Catford site (now LW6) measuring nitrogen dioxide (NO_2), was relocated in November 2021 to Laurence House, 1 Catford Road.

The council currently undertake non-automatic (diffusion tube) monitoring of NO_2 at 148 locations. The diffusion tube network was expanded in 2024 to support the Lewisham High Street/Market regeneration project and one additional tube was also installed in Deptford near the automatic monitoring station LW5 (Lewisham Deptford). In total, 4 new tubes (L97-L100) were installed in 2024 at various points during the year.

Table C. Details of Non-Automatic Monitoring Sites for 2024

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)
L1	Chubworthy Street	Roadside	536109	177580	NO2	Y- Lewisham AQMA	5.0	2.0	N	2.5
L2	Bronze Street	Urban Background	537540	177439	NO2	Y- Lewisham AQMA	0.0	6.0	N	2.5
L3	Grove Street (lamppost on roundabout)	Urban Background	536561	178471	NO2	Y- Lewisham AQMA	N/A	2.0	N	2.5
L4	Plough Way (junction with Grove Street)	Urban Background	536534	178926	NO2	Y- Lewisham AQMA	N/A	2.0	N	2.5
L5	Lee High Road	Roadside	539678	175050	NO2	Y- Lewisham AQMA	0.0	5.0	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)
L6	Le May Avenue	Urban Background	540615	172337	NO2	N	0.0	5.0	N	2.5
L7	Bell Green (Dr No8 65, Bell pub downpipe)	Roadside	536556	171810	NO2	Y-Lewisham AQMA	0.0	3.0	N	2.5
L8	Stondon Park	Roadside	536229	174032	NO2	Y-Crofton Park and Honor Oak Park AQMA	0.0	5.0	N	2.5
L9	Ladywell Rd (corner of building)	Roadside	537500	174925	NO2	Y-Lewisham AQMA	0.0	3.0	N	2.5
L10	Whitburn Road (Bentley Court lamppost)	Roadside	538062	175085	NO2	Y-Lewisham AQMA	1.0	1.0	N	2.5
L11	Sparta Street	Roadside	538007	176517	NO2	Y-Lewisham AQMA	3.0	3.0	N	2.5
L12	Montague Avenue, Hilly Fields	Urban Background	537132	175353	NO2	Y-Lewisham AQMA	N/A	60.0	N	2.5
L13	Mayow Rd (Dr No* 50)	Urban Background	535804	171567	NO2	N	0.0	5.0	N	2.5
L14	Boyne Road	Urban Background	538482	175792	NO2	Y-Lewisham AQMA	3.0	1.0	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)
L15	Lewisham Road	Roadside	538237	176101	NO2	Y-Lewisham AQMA	0.0	10.0	N	2.5
L16	Loampit Vale	Roadside	537740	175930	NO2	Y-Lewisham AQMA	0.0	1.5	N	2.5
L17, L18, L19	New Cross Monitoring Station	Roadside	536246	176934	NO2	Y-Lewisham AQMA	0.0	6.0	Y	2.5
L20	Hatcham Park Road	Roadside	535746	176969	NO2	Y-Lewisham AQMA	1.0	4.0	N	2.5
L21	Brockley Rise	Roadside	536133	173341	NO2	Y-Crofton Park and Honor Oak Park AQMA	0.0	3.0	N	2.5
L22	Ringstead Road	Urban Background	538060	173816	NO2	Y-Lewisham AQMA	3.0	0.5	N	2.5
L23	Catford Hill (Dr No* 33)	Roadside	537178	173365	NO2	N	6.0	0.5	N	2.5
L24	Hazelbank Road	Urban Background	538930	172713	NO2	N	4.0	2.0	N	2.5
L26	Shardloes Road	Roadside	536527	175935	NO2	Y-Lewisham AQMA	3.0	0.5	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)
L27	Montpelier Vale	Roadside	539604	176090	NO2	Y-Lewisham AQMA	2.0	0.5	N	2.5
L28	Baring Road	Roadside	540051	173769	NO2	N	5.0	0.5	N	2.5
L29	Holy Cross, Sangley Road	Roadside	538165	173406	NO2	Y-Lewisham AQMA	0.0	5.0	Y	2.5
L30	Christchurch, Perry Vale	Roadside	535535	172679	NO2	N	1.0	5.0	Y	2.5
L31	St Mary Magdalen's RC, Howson Road	Urban Background	536399	175150	NO2	Y-Crofton Park and Honor Oak Park AQMA	2.0	2.0	Y	2.5
L32	Grinling Gibbons, Clyde Street	Urban Background	536944	177665	NO2	Y-Lewisham AQMA	0.0	2.0	N	2.5
L33	St Mary's CE, Lewisham High Street	Roadside	537979	174792	NO2	Y-Lewisham AQMA	0.0	2.0	N	2.5
L34	Sydenham School, Dartmouth Rd	Urban Background	535071	172346	NO2	N	0.0	5.0	N	2.5
L35	Kender Primary School	Roadside	535447	176897	NO2	Y-Lewisham AQMA	N/A	2.0	N	2.5
L36	Deptford Park School	Roadside	536275	178405	NO2	Y-Lewisham AQMA	N/A	2.0	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)
L37	St James Hatcham School	Urban Background	536317	176883	NO2	Y-Lewisham AQMA	N/A	N/A	N	2.5
L38	Beecroft Primary School	Roadside	536564	174937	NO2	Y-Crofton Park and Honor Oak Park AQMA	6.0	2.0	N	2.6
L39	John Stainer Primary School	Roadside	536308	175721	NO2	Y-Lewisham AQMA	8.0	1.7	N	2.6
L40	Myatt Garden Primary School	Urban Background	536792	176432	NO2	Y-Lewisham AQMA	4.0	1.4	N	2.6
L41	Ashmead Primary School	Urban Background	537256	176353	NO2	Y-Lewisham AQMA	8.0	0.7	N	2.3
L42	Lucas Vale Primary School	Urban Background	537032	176534	NO2	Y-Lewisham AQMA	0.0	2.2	N	2.7
L43	Childeric Primary School	Urban Background	536389	177144	NO2	Y-Lewisham AQMA	6.0	2.9	N	2.7
L44	Sir Francis Drake Primary School	Roadside	536028	178107	NO2	Y-Lewisham AQMA	1.0	2.0	N	2.5
L45	Tidemill Academy	Roadside	537228	177284	NO2	Y-Lewisham AQMA	1.0	2.9	N	2.7

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)
L46	St Margaret Lee Primary School	Urban Background	539416	175315	NO2	Y- Lewisham AQMA	1.0	2.3	N	2.6
L47	Rathfern Primary School	Roadside	536839	173211	NO2	N	2.0	2.1	N	2.5
L48	Holbeach Primary School	Urban Background	537433	173965	NO2	Y- Lewisham AQMA	25.0	0.9	N	2.6
L49	St Saviours RC Primary School	Urban Background	538358	175324	NO2	Y- Lewisham AQMA	3.0	2.1	N	2.4
L50	Rushey Green Primary School	Urban Background	537836	173400	NO2	N	0.0	4.5	N	2.5
L51	290 Brownhill Rd South Circular	Roadside	538803	173683	NO2	Y- Lewisham AQMA	10.0	2.2	N	2.6
L52	St John CofE School	Roadside	538285	171877	NO2	N	3.0	3.9	N	2.4
L53	Greenvale School	Urban Background	539319	172362	NO2	N	1.0	2.9	N	2.5
L54	Baring Road Medical Centre - Healthwatch Lewisham	Roadside	540479	172647	NO2	N	10.0	0.5	N	2.5
L55	Addey and Stanhope School	Roadside	537075	176972	NO2	Y- Lewisham AQMA	1.8	4.5	N	2.9

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)
L56	Marathon Science School	Roadside	536024	178611	NO2	Y-Lewisham AQMA	1.4	0.8	N	2.2
L57	Heath House Preparatory School	Urban Background	539671	176141	NO2	Y-Lewisham AQMA	3.5	0.1	N	2.5
L58	THE BLACKHEATH HOSPITAL OUTPATIENT CENTRE	Roadside	539442	175762	NO2	Y-Lewisham AQMA	18.0	1.5	N	2.5
L59	TLG Lewisham	Urban Background	537989	175781	NO2	Y-Lewisham AQMA	4.0	0.5	N	2.5
L60	Flemming House (Jordane Street)	Urban Background	536660	178717	NO2	Y-Lewisham AQMA	1.8	1.5	N	2.5
L61	University Hospital Lewisham (lamppost by entrance)	Roadside	537907	174533	NO2	Y-Lewisham AQMA	35.0	0.3	N	2.5
L62	Haberdashers' Aske's Hatcham Temple Grove	Roadside	536144	176854	NO2	Y-Lewisham AQMA	3.8	0.7	N	2.3
L63	St Dunstan's College	Roadside	537092	173415	NO2	Y-Crofton Park and Honor Oak	20.0	4.8	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)
						Park AQMA				
L64	Kings Kids Christian School	Urban Background	536352	177541	NO2	Y-Lewisham AQMA	4.0	1.4	N	2.5
L65	St Stephen's CofE Primary School	Urban Background	537319	176485	NO2	Y-Lewisham AQMA	10.0	1.3	N	2.0
L66	Dalmain Primary School	Roadside	536106	173458	NO2	Y-Crofton Park and Honor Oak Park AQMA	12.0	1.3	N	2.5
L67	Edmund Waller Primary School	Urban Background	535644	176484	NO2	Y-Lewisham AQMA	5.8	0.5	N	2.4
L68	Deptford Green School	Roadside	536455	177350	NO2	Y-Lewisham AQMA	15.0	0.2	N	2.5
L69	Chelwood Nursery School	Urban Background	536072	175087	NO2	Y-Lewisham AQMA	0.4	50.0	N	2.5
L70	Prendergast Ladywell School	Urban Background	537029	174246	NO2	Y-Crofton Park and Honor Oak Park AQMA	4.7	2.4	N	2.9

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)
L71	St Margaret's Lee CofE Primary School	Urban Background	539355	175293	NO2	Y-Lewisham AQMA	1.0	1.0	N	2.5
L72	SOUTH LONDON AND MAUDSLEY	Urban Background	538738	174030	NO2	Y-Lewisham AQMA	8.5	1.3	N	2.0
L73	LeSoCo	Roadside	537258	176212	NO2	Y-Lewisham AQMA	18.0	0.3	N	2.4
L74	Arngask Road	Urban Background	538503	173580	NO2	N	6.5	1.2	N	2.5
L75	Eddystone Road	Urban Background	536392	174592	NO2	Y-Crofton Park and Honor Oak Park AQMA	0.1	1.1	N	2.7
L76	Verdant Lane	Roadside	539519	172846	NO2	N	9.0	0.2	N	2.5
L77	Glenfarg Road	Urban Background	538470	173427	NO2	N	4.0	2.0	N	2.5
L78	Torridon Road	Urban Background	538958	173479	NO2	N	7.5	0.2	N	2.5
L79	Horncastle Road	Urban Background	540204	173780	NO2	N	5.0	4.0	N	2.9
L80	Gellatly Road	Roadside	535505	176274	NO2	Y-Lewisham AQMA	3.0	0.0	N	2.4
L81	129 Lee Road	Roadside	539815	175122	NO2	Y-Lewisham AQMA	6.5	0.2	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)
L82	Perry Hill Bus Stop X (35 Perry Hill)	Roadside	536791	172863	NO2	N	14.0	0.2	N	2.3
L83	Bellingham Road	Roadside	537967	172366	NO2	N	6.0	2.4	N	2.4
L84	Perry Rise (Dr No* 240)	Roadside	536500	172023	NO2	Y-Lewisham AQMA	1.0	2.0	N	2.0
L85	Health Centre Bus Stop	Roadside	536528	171882	NO2	Y-Lewisham AQMA	6.0	0.3	N	2.0
L86	Southend Lane Bridge	Roadside	536551	171878	NO2	Y-Lewisham AQMA	41.0	0.2	N	2.0
L87	Kirkdale/Wells Park Road	Roadside	534983	171996	NO2	N	13.0	0.2	N	2.2
L88	Sydenham Library (opp 287 Sydenham Rd)	Roadside	536309	171594	NO2	Y-Lewisham AQMA	5.5	0.1	N	2.4
L89	Nursery entrance OLSPN	Roadside	536208	171508	NO2	Y-Lewisham AQMA	4.7	2.3	N	2.3
L90	Devonshire Rd, Flat 1-9 Lynfield Court	Roadside	535538	173700	NO2	Y-Crofton Park and Honor Oak Park AQMA	8.0	0.8	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)
L91	Hare and Billet Road/Lewisham Hill	Roadside	538924	176411	NO2	Y-Lewisham AQMA	37.0	0.5	N	2.0
L92	Camplin St at Brocklehurst St junc	Roadside	535775	177400	NO2	Y-Lewisham AQMA	1.4	0.4	N	2.5
L93	Landmann Way (Reuse & Recycling Centre)	Roadside	535756	177986	NO2	Y-Lewisham AQMA	0.8	1.9	N	2.5
L94	Three Store	Roadside	538318	175116	NO2	Y-Lewisham AQMA	0.5	2.8	N	2.5
L95	9A Lewis Grove	Roadside	538371	175562	NO2	Y-Lewisham AQMA	0.8	1.8	N	2.5
L96	191 Lewisham High Street	Roadside	538233	175283	NO2	Y-Lewisham AQMA	6.0	1.1	N	2.8
L97	Molesworth Street South	Roadside	538144	175411	NO2	Y-Lewisham AQMA	42.9	1.3	N	2.4
L98	Molesworth Street North	Roadside	538129	175627	NO2	Y-Lewisham AQMA	31.7	0.9	N	2.4
L99	22 Albion Way	Urban Background	538464	175395	NO2	Y-Lewisham AQMA	19.3	3.6	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)
L100	Deptford Church opposite St Joseph's Catholic Primary School	Urban Background	537144	177442	NO2	Y- Lewisham AQMA	N/A	1.8	N	2.5
SSDT_1	46 Grinstead Road	Roadside	536263	178099	NO2	Y- Lewisham AQMA	12.0	1.4	N	2.4
SSDT_2	58 Friendly Street	Roadside	537250	176593	NO2	Y- Lewisham AQMA	7.0	1.8	N	2.2
SSDT_3	1 Lind Street	Roadside	537534	176469	NO2	Y- Lewisham AQMA	23.0	0.8	N	2.5
SSDT_4	Goffers Road	Roadside	538982	176645	NO2	Y- Lewisham AQMA	N/A	2.0	N	2.1
SSDT_5	121 Pepys Road	Roadside	535947	176287	NO2	Y- Lewisham AQMA	8.0	0.7	N	2.5
SSDT_6	101 Jerningham Road	Roadside	536197	176514	NO2	Y- Lewisham AQMA	9.5	0.6	N	2.4
SSDT_7	41 South Row	Roadside	539761	176431	NO2	Y- Lewisham AQMA	14.0	0.9	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)
SSDT_8	1 Belmont Park	Roadside	538795	175291	NO2	Y-Lewisham AQMA	6.0	0.5	N	2.4
SSDT_9	19 Manor Road	Roadside	538926	175030	NO2	Y-Lewisham AQMA	14.0	0.5	N	2.7
SSDT_10	94 Hither Green Lane	Roadside	538367	174857	NO2	Y-Lewisham AQMA	11.0	1.4	N	2.4
SSDT_11	1 Woodville Close	Roadside	540200	174781	NO2	Y-Lewisham AQMA	14.0	0.5	N	2.5
SSDT_12	4 Burnt Ash Road	Roadside	539871	174720	NO2	Y-Lewisham AQMA	20.0	0.5	N	2.3
SSDT_13	101 Manor Lane	Roadside	539418	174543	NO2	Y-Lewisham AQMA	9.0	0.9	N	1.8
SSDT_14	160 Leahurst Road	Roadside	539063	174543	NO2	Y-Lewisham AQMA	5.0	1.7	N	2.5
SSDT_15	185 Hither Green Lane	Roadside	538562	174494	NO2	Y-Lewisham AQMA	5.0	1.4	N	2.7
SSDT_16	140 Chudleigh Road	Roadside	536975	174537	NO2	Y-Crofton Park and Honor Oak Park AQMA	14.0	2.3	N	2.2

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)
SSDT_17	112 Crofton Park Road	Roadside	536666	174206	NO2	Y-Crofton Park and Honor Oak Park AQMA	2.0	1.9	N	2.4
SSDT_18	George Lane, Holy Trinity Church	Roadside	538313	174269	NO2	Y-Lewisham AQMA	6.0	2.2	N	2.5
SSDT_19	193 George Lane (moved to LC21)	Roadside	538589	174189	NO2	Y-Lewisham AQMA	12.0	1.9	N	2.2
SSDT_20	208 Verdant Lane	Roadside	539498	172969	NO2	N	15.0	0.5	N	2.5
SSDT_21	Holme Lacey Rd (outside Travis P)	Roadside	539892	174174	NO2	Y-Lewisham AQMA	8.0	2.5	N	2.4
SSDT_22	40B Burnt Ash Road	Roadside	540014	173979	NO2	Y-Lewisham AQMA	25.0	0.4	N	2.3
SSDT_23	75 Leyland Road	Roadside	540119	174329	NO2	Y-Lewisham AQMA	7.0	0.8	N	2.5
SSDT_24	131 Woodyates Road	Roadside	540504	173977	NO2	N	8.0	2.6	N	2.6
SSDT_25	268 Manor Lane	Roadside	539559	173929	NO2	Y-Lewisham AQMA	15.0	0.7	N	2.6

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)
SSDT_26	389 Hither Green Lane	Roadside	539352	173783	NO2	Y-Lewisham AQMA	12.0	2.7	N	2.6
SSDT_27	51 Polstead Road	Roadside	536753	173603	NO2	Y-Crofton Park and Honor Oak Park AQMA	5.0	3.0	N	2.3
SSDT_28	119 Sandhurst Road	Roadside	538723	173345	NO2	N	8.0	1.5	N	2.4
SSDT_29	18 Jevington Way	Roadside	541019	173231	NO2	N	13.0	0.8	N	2.6
SSDT_30	7 Fordmill Road	Roadside	537530	173095	NO2	N	8.0	0.9	N	2.5
SSDT_31	38 Thorpewood Avenue	Roadside	534939	172586	NO2	N	10.0	0.6	N	2.4
SSDT_32	155 Woolstone Road	Roadside	536217	172563	NO2	N	8.0	2.2	N	2.2
SSDT_33	3 Brookehowse Road	Roadside	537436	172596	NO2	N	17.0	3.3	N	2.7
SSDT_34	136 Thornsbeach Road	Roadside	538471	172660	NO2	N	14.0	2.6	N	2.5
SSDT_35	49 Castillion Road	Roadside	539254	172658	NO2	N	9.0	2.5	N	2.4
SSDT_36	12 Pragnell Road	Roadside	540601	172744	NO2	N	23.0	2.7	N	2.6
SSDT_37	147 Perry Hill	Roadside	536618	172405	NO2	N	11.0	1.0	N	2.6
SSDT_38	Dacres Rd (Dr No* 49A)	Roadside	535533	172340	NO2	N	3.0	2.5	N	2.4

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)
SSDT_39	Wells Park Road	Roadside	534309	172044	NO2	N	15.0	2.8	N	2.3
SSDT_40	22 Mayow Rd (near April Glen)	Roadside	535924	172207	NO2	N	14.0	0.6	N	2.2
SSDT_41	5 Stanton Way	Roadside	536598	171766	NO2	Y- Lewisham AQMA	16.0	0.7	N	2.8
SSDT_42	Oakridge Road	Roadside	538788	171517	NO2	Y- Lewisham AQMA	14.0	0.5	N	2.2
SSDT_43	198 Glenbow Road	Roadside	539170	170869	NO2	N	13.0	3.4	N	2.4
SSDT_44	Glenbow Road, Playing Fields	Roadside	539374	171246	NO2	N	39.0	3.3	N	2.3
SSDT_45	165 Downham Way	Roadside	539492	171567	NO2	N	9.0	2.7	N	2.6
SSDT_46	Daneswood Avenue, 90 Passfields	Roadside	539732	172202	NO2	N	13.0	0.7	N	2.5
SSDT_47	398 Downham Way	Roadside	540249	171633	NO2	N	6.0	3.2	N	2.4

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)
SSDT_48	549 Downham Way	Roadside	540331	172103	NO2	N	12.0	0.7	N	0.2
SSDT_49	72 Tyrwhitt Road	Roadside	537320	175801	NO2	Y- Lewisham AQMA	11.0	0.6	N	2.5
SSDT_50	53 Tressillian Road	Roadside	537156	175867	NO2	Y- Lewisham AQMA	9.0	0.7	N	2.4
SSDT_51	110 Drakefell Road	Roadside	535908	175946	NO2	Y- Lewisham AQMA	2.0	1.4	N	2.4

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.

The 2024 annual mean NO_2 concentrations at automatic monitoring sites overall exhibited a continuation of the decreasing trend observed over the seven-year period between 2018 to 2024. For the sites LW2 and LW4, the average decreases were 40% and 1% respectively for the seven-year period. In 2024, there was one monitoring site (LW4) which measured an annual mean concentration above the AQO with a measured NO_2 concentration of 46.1 µg m^{-3}. LW4 is the only monitoring site where NO_2 concentrations have increased in 2024 compared to the previous monitoring year; monitoring sites LW2, LW5, LW6 and HP1 all recorded lower annual mean NO_2 concentrations in 2024, in comparison to 2023.

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period %[(a)]	Valid data capture 2024 %[(b)]	2018	2019	2020	2021	2022	2023	2024
LW6	537588	173606	Roadside	93.8	93.2	-	-	-	-	25.5	23.6	17.6
LW2	536241	176932	Roadside	88.7	88.7	**42.1**	37.9	29.1	32.4	29.6	26.3	25.1
LW4	537912	175838	Roadside	98.1	98.1	**46.4**	**42.8**	35.6	35.4	38.4	**42.6**	**46.1**
LW5	537228	177471	Urban Background	90.6	90.6	-	-	18.7	19.7	19.1	16.5	14.9
HP1	536473	174128	Urban Background	99.8	99.8	-	24.1	16.1	17.2	16.0	14.9	13.5

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%).

There was one exceedance of the annual mean NO_2 AQO of 40 µg m^{-3} during 2024. L95 (Lewis Grove) measured the highest annual mean concentration at 51.9 µg m^{-3}, although when distance corrected for relevant exposure, the concentration slightly decreased to 49.2 µg m^{-3}. This site was added as part of the three new diffusion tubes in 2023 along Lewisham High Street and Lewis Grove. It is situated near a busy junction and is also in a street canyon due to the road layout, which are believed to be the main contributing factors to this high annual mean NO_2 concentration. During 2024 a temporary diversion of bus routes was implemented as part of the Lewisham High Street renovation project, this has led to a noticeable reduction in NO_2 concentrations within the area as shown by monitoring locations L94 and L95. 10 sites had a data capture between 75% and 25% for 2024 and therefore required annualisation as shown in Appendix A Details of Monitoring Site Quality QA/QC, 2 sites recorded data captures below 25% for 2024 due to being installed late in the year, site L98 and L99, as such they have not undergone annualisation. 97% of the pre-existing diffusion tube locations recorded lower annual mean NO_2 concentrations in 2024 than 2023. All monitoring locations measured an overall decreasing trend in annual mean NO_2 concentrations since 2018. On average, the decrease between 2018 and 2024 at diffusion tube sites was 42% for the seven-year period. Over the last seven years, annual mean NO_2 concentrations at all diffusion tube urban background sites have remained below the annual mean NO_2 AQO of 40 µg m^{-3}. Furthermore, there have only been two exceedances at roadside locations since 2019- at the new location L95 in 2023 and 2024.

Table E. Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring (µg 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 2024 (%)(2)	2018	2019	2020	2021	2022	2023	2024
L1	536109	177580	Roadside	91.8	91.8	29.2	28.2	21.9	21.9	20.7	19.0	17.9
L2	537540	177439	Urban Background	100.0	100.0	25.2	25.7	20.1	19.0	18.3	16.9	16.2
L3	536561	178471	Urban Background	68.2	68.2	30.6	27.4	20.6	20.8	20.0	19.4	18.3
L4	536534	178926	Urban Background	100.0	100.0	28.8	27.7	21.1	20.8	19.4	22.1	17.5
L5	539678	175050	Roadside	100.0	100.0	29.9	27.7	21.8	22.7	20.7	18.7	17.7
L6	540615	172337	Urban Background	100.0	100.0	30.5	27.2	22.1	22.2	16.4	17.7	17.6
L7	536556	171810	Roadside	92.9	92.9	38.2	39.6	32.5	31.1	29.7	27.4	24.2
L8	536229	174032	Roadside	100.0	100.0	33.5	31.5	24.5	24.8	22.4	21.1	18.7
L9	537500	174925	Roadside	100.0	100.0	36.2	31.9	25.7	25.0	22.2	21.2	18.6
L10	538062	175085	Roadside	100.0	100.0	38.0	31.4	24.7	25.2	22.6	21.4	19.4
L11	538007	176517	Roadside	100.0	100.0	33.6	31.2	23.6	26.0	25.8	24.7	26.2
L12	537132	175353	Urban Background	92.9	92.9	25.3	23.7	19.4	18.6	16.6	16.3	13.5
L13	535804	171567	Urban Background	75.0	75.0	23.8	24.4	19.5	17.8	19.2	17.0	16.6
L14	538482	175792	Urban Background	100.0	100.0	26.3	25.8	21.4	20.0	18.3	18.1	17.2
L15	538237	176101	Roadside	100.0	100.0	33.9	34.0	26.9	24.1	26.2	27.2	24.6
L16	537740	175930	Roadside	92.1	92.1	**40.4**	37.0	29.5	31.6	28.0	26.2	26.0
L17, L18, L19	536246	176934	Roadside	100.0	100.0	**43.0**	38.1	28.1	29.1	28.4	27.1	26.0
L20	535746	176969	Roadside	83.2	83.2	37.7	34.3	25.6	24.3	22.1	21.6	20.4

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 2024 (%)([2])	2018	2019	2020	2021	2022	2023	2024
L21	536133	173341	Roadside	100.0	100.0	**41.2**	39.8	30.1	28.0	25.5	24.8	23.1
L22	538060	173816	Urban Background	90.8	90.8	28.1	25.5	22.0	19.8	18.0	17.5	15.2
L23	537178	173365	Roadside	100.0	100.0	**43.1**	38.7	29.9	28.4	26.5	24.5	22.7
L24	538930	172713	Urban Background	91.8	91.8	32.8	29.9	24.1	23.0	22.8	21.1	17.0
L26	536527	175935	Roadside	100.0	100.0	39.0	36.0	29.8	28.6	24.4	22.9	21.8
L27	539604	176090	Roadside	89.9	89.9	**43.5**	39.5	31.2	30.5	28.8	28.4	25.2
L28	540051	173769	Roadside	100.0	100.0	**46.3**	**41.0**	33.4	31.0	26.7	25.4	26.3
L29	538165	173406	Roadside	84.0	84.0	28.1	24.4	20.4	19.6	18.1	16.7	17.2
L30	535535	172679	Roadside	100.0	100.0	28.7	26.3	19.7	18.7	18.2	15.9	14.7
L31	536399	175150	Urban Background	100.0	100.0	25.9	21.2	17.8	17.4	15.9	14.7	12.6
L32	536944	177665	Urban Background	92.9	92.9	27.4	25.6	20.7	19.7	19.3	18.0	16.2
L33	537979	174792	Roadside	92.9	92.9	38.2	33.2	28.2	26.9	24.1	23.4	20.8
L34	535071	172346	Urban Background	100.0	100.0	23.8	24.2	18.3	17.2	15.2	14.4	12.7
L35	535447	176897	Roadside	92.7	92.7	27.1	25.9	19.9	19.7	17.3	16.2	14.8
L36	536275	178405	Roadside	100.0	100.0	39.2	37.0	26.3	25.4	22.6	20.6	18.1
L37	536317	176883	Urban Background	100.0	100.0	27.4	25.3	19.6	19.7	17.9	17.0	15.7
L38	536564	174937	Roadside	100.0	100.0	29.7	30.6	22.5	21.7	21.5	17.7	16.5
L39	536308	175721	Roadside	82.9	82.9	30.0	29.0	22.8	21.2	19.8	17.6	17.7
L40	536792	176432	Urban Background	100.0	100.0	23.7	22.7	17.7	17.7	15.5	15.0	13.2
L41	537256	176353	Urban Background	91.8	91.8	24.0	23.2	17.6	17.2	16.3	14.9	13.0
L42	537032	176534	Urban Background	82.6	82.6	26.8	26.7	20.6	20.1	18.4	16.5	15.3

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 2024 (%)([2])	2018	2019	2020	2021	2022	2023	2024
L43	536389	177144	Urban Background	92.9	92.9	26.6	27.5	20.2	20.2	18.9	17.5	16.2
L44	536028	178107	Roadside	91.0	91.0	35.2	32.8	26.1	26.3	26.2	24.3	22.2
L45	537228	177284	Roadside	100.0	100.0	33.4	28.5	20.4	19.8	18.1	17.8	16.5
L46	539416	175315	Urban Background	90.8	90.8	24.9	24.7	18.8	17.9	16.5	15.2	13.8
L47	536839	173211	Roadside	90.5	90.5	27.5	24.8	20.4	17.7	17.4	15.6	14.7
L48	537433	173965	Urban Background	75.0	75.0	27.3	25.8	20.4	20.3	19.6	17.9	15.2
L49	538358	175324	Urban Background	91.8	91.8	27.4	24.0	20.3	20.6	17.5	17.6	16.3
L50	537836	173400	Urban Background	75.0	75.0	24.3	21.8	17.8	16.6	14.7	14.0	12.9
L51	538803	173683	Roadside	100.0	100.0	**53.5**	**44.9**	34.0	33.3	30.4	29.0	23.5
L52	538285	171877	Roadside	100.0	100.0	33.2	33.3	27.3	24.2	21.8	20.6	19.1
L53	539319	172362	Urban Background	100.0	100.0	22.7	20.9	15.9	16.8	15.3	15.0	14.5
L54	540479	172647	Roadside	66.3	66.3	-	-	-	-	22.4	21.9	20.8
L55	537075	176972	Roadside	66.6	66.6	-	-	-	-	33.9	20.4	22.7
L56	536024	178611	Roadside	100.0	100.0	-	-	-	-	22.3	22.1	20.3
L57	539671	176141	Urban Background	100.0	100.0	-	-	-	-	19.1	19.1	17.8
L58	539442	175762	Roadside	85.3	85.3	-	-	-	-	26.4	26.8	24.0
L59	537989	175781	Urban Background	92.9	92.9	-	-	-	-	23.3	22.2	22.3
L60	536660	178717	Urban Background	90.5	90.5	-	-	-	-	19.3	18.5	16.0
L61	537907	174533	Roadside	100.0	100.0	-	-	-	-	25.7	24.3	21.3
L62	536144	176854	Roadside	100.0	100.0	-	-	-	-	24.4	23.3	21.1
L63	537092	173415	Roadside	100.0	100.0	-	-	-	-	29.7	28.0	25.2

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 2024 (%)([2])	2018	2019	2020	2021	2022	2023	2024
L64	536352	177541	Urban Background	100.0	100.0	-	-	-	-	18.5	17.2	15.7
L65	537319	176485	Urban Background	100.0	100.0	-	-	-	-	17.5	16.3	15.2
L66	536106	173458	Roadside	67.9	67.9	-	-	-	-	16.8	14.3	14.1
L67	535644	176484	Urban Background	90.8	90.8	-	-	-	-	17.6	15.4	14.8
L68	536455	177350	Roadside	100.0	100.0	-	-	-	-	28.7	28.2	24.8
L69	536072	175087	Urban Background	84.8	84.8	-	-	-	-	16.5	15.6	13.2
L70	537029	174246	Urban Background	100.0	100.0	-	-	-	-	16.4	13.6	14.2
L71	539355	175293	Urban Background	100.0	100.0	-	-	-	-	16.5	15.2	14.4
L72	538738	174030	Urban Background	100.0	100.0	-	-	-	-	14.5	14.4	14.4
L73	537258	176212	Roadside	100.0	100.0	-	-	-	-	30.3	29.4	28.0
L74	538503	173580	Urban Background	100.0	100.0	-	-	-	-	18.3	16.4	13.8
L75	536392	174592	Urban Background	100.0	100.0	-	-	-	-	19.3	16.7	15.8
L76	539519	172846	Roadside	100.0	100.0	-	-	-	-	26.4	22.0	21.1
L77	538470	173427	Urban Background	90.8	90.8	-	-	-	-	17.3	16.1	14.3
L78	538958	173479	Urban Background	100.0	100.0	-	-	-	-	20.2	18.8	16.1
L79	540204	173780	Urban Background	92.9	92.9	-	-	-	-	20.5	18.3	17.1
L80	535505	176274	Roadside	84.5	84.5	-	-	-	-	24.3	22.3	20.0
L81	539815	175122	Roadside	91.8	91.8	-	-	-	-	23.1	19.3	17.6

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 2024 (%)([2])	2018	2019	2020	2021	2022	2023	2024
L82	536791	172863	Roadside	66.8	66.8	-	-	-	-	-	20.1	18.2
L83	537967	172366	Roadside	100.0	100.0	-	-	-	-	21.3	18.8	17.6
L84	536500	172023	Roadside	100.0	100.0	-	-	-	-	30.8	24.9	25.3
L85	536528	171882	Roadside	75.0	75.0	-	-	-	-	35.3	37.3	33.8
L86	536551	171878	Roadside	92.4	92.4	-	-	-	-	39.4	31.3	29.4
L87	534983	171996	Roadside	100.0	100.0	-	-	-	-	26.0	23.3	19.3
L88	536309	171594	Roadside	100.0	100.0	-	-	-	-	35.3	30.8	26.7
L89	536208	171508	Roadside	92.7	92.7	-	-	-	-	21.2	17.5	16.4
L90	535538	173700	Roadside	100.0	100.0	-	-	-	-	19.4	16.6	15.0
L91	538924	176411	Roadside	89.9	89.9	-	-	-	-	21.2	19.4	17.5
L92	535775	177400	Roadside	100.0	100.0	-	-	-	-	21.8	18.5	17.9
L93	535756	177986	Roadside	89.9	89.9	-	-	-	-	27.0	23.8	21.4
L94	538318	175116	Roadside	82.9	82.9	-	-	-	-	-	32.1	28.2
L95	538371	175562	Roadside	89.9	89.9	-	-	-	-	-	**78.8**	**51.9**
L96	538233	175283	Roadside	81.0	81.0	-	-	-	-	-	39.0	30.9
L97	538144	175411	Roadside	100.0	25.0	-	-	-	-	-	-	28.8
L100	537144	177442	Urban Background	86.0	50.3	-	-	-	-	-	-	15.7
SSDT_1	536263	178099	Roadside	100.0	100.0	-	-	22.5	23.3	25.2	22.6	19.8
SSDT_2	537250	176593	Roadside	66.6	66.6	-	-	_	20.0	18.9	18.6	16.6
SSDT_3	537534	176469	Roadside	100.0	100.0	-	-	21.5	22.6	20.8	19.7	19.6
SSDT_4	538982	176645	Roadside	91.0	91.0	-	-	24.4	25.5	23.8	23.6	22.1
SSDT_5	535947	176287	Roadside	100.0	100.0	-	-	19.6	21.1	18.1	17.9	15.8
SSDT_6	536197	176514	Roadside	90.8	90.8	-	-	22.6	21.3	19.5	18.5	16.5
SSDT_7	539761	176431	Roadside	100.0	100.0	-	-	24.6	24.5	23.9	23.7	20.9
SSDT_8	538795	175291	Roadside	92.1	92.1	-	-	25.5	24.5	23.6	20.6	20.9
SSDT_9	538926	175030	Roadside	84.8	84.8	-	-	19.2	18.8	17.6	16.5	15.0
SSDT_10	538367	174857	Roadside	100.0	100.0	-	-	27.5	27.3	24.5	22.6	21.2
SSDT_11	540200	174781	Roadside	92.9	92.9	-	-	17.7	17.4	15.7	14.9	13.8
SSDT_12	539871	174720	Roadside	91.8	91.8	-	-	26.4	25.3	23.9	21.8	19.7

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 2024 (%)([2])	2018	2019	2020	2021	2022	2023	2024
SSDT_13	539418	174543	Roadside	100.0	100.0	-	-	20.9	19.7	18.8	16.6	15.0
SSDT_14	539063	174543	Roadside	100.0	100.0	-	-	17.6	20.7	19.3	17.3	15.4
SSDT_15	538562	174494	Roadside	92.9	92.9	-	-	22.2	22.7	20.0	18.8	18.0
SSDT_16	536975	174537	Roadside	80.4	80.4	-	-	21.9	20.7	18.8	17.9	15.3
SSDT_17	536666	174206	Roadside	100.0	100.0	-	-	18.5	18.1	17.1	16.4	14.8
SSDT_18	538313	174269	Roadside	100.0	100.0	-	-	20.3	20.0	18.8	17.9	15.1
SSDT_19	538589	174189	Roadside	92.1	92.1	-	-	16.7	18.5	17.3	16.1	15.8
SSDT_20	539498	172969	Roadside	100.0	100.0	-	-	23.4	22.5	20.6	19.3	18.5
SSDT_21	539892	174174	Roadside	100.0	100.0	-	-	20.9	18.6	17.3	16.9	15.5
SSDT_22	540014	173979	Roadside	100.0	100.0	-	-	24.9	25.6	23.0	21.6	20.0
SSDT_23	540119	174329	Roadside	100.0	100.0	-	-	19.3	18.5	17.0	16.1	15.1
SSDT_24	540504	173977	Roadside	92.1	92.1	-	-	22.1	23.0	20.0	19.3	16.5
SSDT_25	539559	173929	Roadside	100.0	100.0	-	-	21.3	22.8	20.7	19.5	18.4
SSDT_26	539352	173783	Roadside	91.8	91.8	-	-	26.3	24.3	22.6	20.5	18.8
SSDT_27	536753	173603	Roadside	91.8	91.8	-	-	19.1	18.5	17.6	15.6	13.6
SSDT_28	538723	173345	Roadside	100.0	100.0	-	-	25.5	25.3	22.5	21.6	19.4
SSDT_29	541019	173231	Roadside	100.0	100.0	-	-	17.8	18.2	16.6	15.8	14.6
SSDT_30	537530	173095	Roadside	100.0	100.0	-	-	20.9	20.2	18.8	17.6	16.5
SSDT_31	534939	172586	Roadside	100.0	100.0	-	-	17.6	17.0	15.3	13.8	13.3
SSDT_32	536217	172563	Roadside	100.0	100.0	-	-	20.5	18.2	17.7	17.0	16.5
SSDT_33	537436	172596	Roadside	100.0	100.0	-	-	19.8	19.8	17.0	16.5	14.0
SSDT_34	538471	172660	Roadside	91.0	91.0	-	-	19.1	18.2	16.6	15.6	14.5
SSDT_35	539254	172658	Roadside	100.0	100.0	-	-	17.8	18.1	16.7	17.0	15.0
SSDT_36	540601	172744	Roadside	91.8	91.8	-	-	17.4	15.3	13.5	12.8	12.8
SSDT_37	536618	172405	Roadside	92.7	92.7	-	-	29.5	28.7	26.6	23.4	24.0
SSDT_38	535533	172340	Roadside	90.5	90.5	-	-	17.4	15.8	14.9	13.0	12.1
SSDT_39	534309	172044	Roadside	82.9	82.9	-	-	19.3	18.3	17.9	16.5	14.1
SSDT_40	535924	172207	Roadside	68.8	68.8	-	-	25.1	22.5	19.6	18.3	17.3
SSDT_41	536598	171766	Roadside	100.0	100.0	-	-	29.9	30.9	28.4	25.8	26.0
SSDT_42	538788	171517	Roadside	83.7	83.7	-	-	25.3	24.3	23.0	23.4	20.3

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 2024 (%)(2)	2018	2019	2020	2021	2022	2023	2024
SSDT_43	539170	170869	Roadside	100.0	100.0	-	-	17.8	16.9	16.3	14.8	14.3
SSDT_44	539374	171246	Roadside	75.0	75.0	-	-	16.6	14.5	15.0	13.6	11.8
SSDT_45	539492	171567	Roadside	100.0	100.0	-	-	17.6	17.5	15.6	14.4	13.1
SSDT_46	539732	172202	Roadside	100.0	100.0	-	-	21.4	20.5	18.9	17.9	16.3
SSDT_47	540249	171633	Roadside	92.9	92.9	-	-	25.2	24.4	21.1	18.9	16.0
SSDT_48	540331	172103	Roadside	100.0	100.0	-	-	20.1	20.7	18.9	17.3	15.4
SSDT_49	537320	175801	Roadside	92.9	92.9	-	-	19.0	17.4	16.5	15.5	14.0
SSDT_50	537156	175867	Roadside	59.5	59.5	-	-	-	17.9	16.0	15.6	14.2
SSDT_51	535908	175946	Roadside	100.0	100.0	-	-	28.0	28.2	24.8	23.8	21.8

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

☒ **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 µg m^{-3}.

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%).

In 2024, there were no exceedances of the hourly mean NO_2 AQO of 200 µg m^3 at any of the five automatic monitoring locations. There were three occasions when the recorded hourly mean NO_2 was above 200 µg m^{-3} at LW4 (Loampit Vale) and seven occasions at HP1 (Honor Oak Park). However, these are both within the permitted 18 hours per year limit as outlined in the hourly NO_2 AQO. In recent monitoring years, there appears to have been a slight increase at LW4 and HP1 in the number of hours per year that have recorded concentrations higher than 200 µg m^{-3}.

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period %([a])	Valid data capture 2024 %([b])	2018	2019	2020	2021	2022	2023	2024
LW6	537588	173606	Roadside	93.8	93.2	-	-	-	-	0	0	0
LW2	536241	176932	Roadside	88.7	88.7	0	0	0	0 (82)	0 (90)	0	0
LW4	537912	175838	Roadside	98.1	98.1	0	0	0	0	0	1	3
LW5	537228	177471	Urban Background	90.6	90.6	-	-	0	0	0	0	0
HP1	536473	174128	Urban Background	99.8	99.8	-	0	0	0	0	0	7

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%)

In 2024, all three monitoring sites measured annual mean PM_{10} concentrations well below the AQO of 40 µg m^{-3}. However, LW4 is in exceedance of the WHO AQG for annual mean PM_{10} (15 µg m^{-3}). In 2024, the highest annual mean concentration was measured at LW4, with a concentration of 15.4 µg m^{-3}. Annualisation was not required at any location during 2024. For the entire seven-year period between 2018 and 2024, all three monitoring stations measured an overall downward trend with some fluctuations around this trendline. These variations around the trend are more notable at LW4.

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period %(a)	Valid data capture 2024 %(b)	2018	2019	2020	2021	2022	2023	2024
LW2	536241	176932	Roadside	92.4	92.4	21.2	19.8	19.0	21.2	24.1	22.2	14.8
LW4	537912	175838	Roadside	92.2	92.2	18.6	20.3	18.5	19.0	19.7	17.6	15.4
HP1	536473	174128	Urban Background	99.6	99.6	-	14.7	13.8	13.6	13.1	11.7	10.7

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%).

In 2024, there were no instances where the 24-hour mean was greater than the AQO value of 50 µg m^{-3} at any automatic monitoring site. All monitoring stations achieved compliance with the 24-hour mean AQO. In the past seven years, the highest recorded number of days where the monitored concentration was greater than the AQO objective value was 9 days at LW2 in 2019 and 2023, as well as at LW4 in 2019.

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	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period %[(a)]	Valid data capture 2024 %[(b)]	2018	2019	2020	2021	2022	2023	2024
LW2	536241	176932	Roadside	92.4	92.4	4	9	5 (30)	2 (71)	1 (33)	9 (35.6)	0
LW4	537912	175838	Roadside	92.2	92.2	1	9	8	3	3	3	0
HP1	536473	174128	Urban Background	99.6	99.6	-	7	4	0	3	0	0

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%).

$PM_{2.5}$ concentrations are monitored at LW2, HP1 & LW5 within LBL. In 2024, all sites measured annual mean concentrations below the annual mean $PM_{2.5}$ AQO value of 10 µg m^{-3}. However, all monitoring locations exceeded the annual mean WHO AQG for $PM_{2.5}$ of 5 µg m^{-3}. Due to low data capture at LW2, annualisation has been carried out. LW2 and LW5 both measured the highest annual mean concentration of 8.6 µg m^{-3} in 2024.

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period %[a]	Valid data capture 2024 %[b]	2018	2019	2020	2021	2022	2023	2024
LW2	536241	176932	Roadside	71.0	59.5	**15.0**	**15.0**	**12.6**	**13.9**	**12.6**	9.9	8.6
LW5	537228	177471	Urban Background	97.9	97.9	-	-	8.8	**10.1**	**10.4**	9.9	8.6
HP1	536473	174128	Urban Background	99.6	99.6	-	9.9	8.7	8.8	8.1	7.3	6.7

Notes

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

Exceedances of the $PM_{2.5}$ annual mean concentration target of 10 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%).

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 Lewisham can be found in Table J. The table presents a description of the 2 AQMAs that are currently designated within the London Borough of Lewisham. Appendix C provides maps of AQMAs and also the air quality monitoring locations in relation to the AQMAs. The air quality objectives pertinent to the current AQMA designations are as follows:

- NO_2 annual mean
- 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
Lewisham AQMA	Declared 01/07/2001	NO_2 Annual Mean PM_{10} 24-hour mean	The Air Quality Management Areas for the Borough of Lewisham consist of four large AQMAs and a series of ribbon roads.	Yes	52	**49.2**	Not compliant	Air Quality Action Plan 2022-2027	London Borough of Lewisham Air Quality Action Plan 2022-2027
Crofton Park and Honor Oak Park AQMA	Declared 30/08/2013	NO_2 Annual Mean	This AQMA consists of the area North of A205 Road and was declared on the basis of anticipated exceedances of the NO_2 annual mean.	Yes	52	N/A	5 years	Air Quality Action Plan 2022-2027	London Borough of Lewisham Air Quality Action Plan 2022-2027

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

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

2.2 Air Quality Action Plan Progress

Table K provides a brief summary of London Borough of Lewisham progress against the Air Quality Action Plan, showing progress made this year. New projects which commenced in 2024 are shown at the bottom of the table.

Table K. Delivery of Air Quality Action Plan Measures

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
1.A.3	AQ Monitoring	Installation of small automatic air quality sensors across the borough.	2027	Local Authority Environmental Protection	The Council will continue to monitor air quality via 4 automatic monitoring stations and assist with the supersite located at Honor Oak Park. In 2024, 13 Breathe London nodes were operational in the borough. These sensors provide live data for NO2 and PM2.5. The council has started a project to increase the air quality monitoring network across the borough by deploying 100 small automatic air quality sensors which will measure, nitrogen dioxide, carbon dioxide, ozone, particulate matter (10 and 2.5), temperature and humidity all in real time. The date will be available through a public platform. At the end of 2024, 25 sensors had been installed across the borough. The council received funding from the DEFRA Air Quality Grant Programme in 2023, part of the project is a 4-year air quality measurement campaign, using air quality sensors, to feed into and provide evidence to evaluate the success of improving public awareness, improving knowledge, and reducing exposure to air pollution in relation to NO2 and particulate matter. Six air quality sensors will be installed in 2024 as part of the project, in areas with woodburning issues and areas where school streets are planning to be installed.
7	Emissions from developments and buildings	Ensuring that Smoke Control Areas are appropriately identified and	2030	Local Authority Environmental Protection, Local Authority Safer	Promotion and publicity of woodburning and its impact was undertaken during the Autumn/Winter months as part of the DEFRA funded London Woodburning Project. Including the impact of woodburning and open fire regulations, have been shared across our digital channels and featured in the resident newsletter. We've also distributed postcards in libraries and leisure centres across the borough, and

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		fully promoted and enforced.		Communities Service	highlighted woodburning impacts as part of 'Clean Air Night' in January. The London Woodburning Group have also received funding from the MAQF to support the enforcement of the Clean Air Act. The project has involved training for officers and all the necessary information to undertake enforcement action including information letters, warning letters and the necessary notices. To be able to undertake enforcement the council needs to have a procedure/policy in place which sets out how fines will be set, this will be produced in 2025 in conjunction with the London Woodburning Group. The whole borough is designated a Smoke Control Area and any complaints regarding wood burning are investigated, this includes providing advice and taking enforcement action if required. This work will be further supported by the Air Quality Burdens Grant. The council received funding from the DEFRA Air Quality Grant Programme in 2023, part of the project is a 4-year air quality measurement campaign, using air quality sensors, to feed into and provide evidence to evaluate the success of improving public awareness, improving knowledge, and reducing exposure to air pollution in relation to NO2 and particulate matter. Specifically, around solid fuel burning and schools to include Borough wide messaging and communications. The project will include the launch of new air quality webpages in 2024 which will provide a focal point and easy access to the monitoring results, associated analysis, messaging, to raise public awareness, and encourage behavioural change.
22.1	Cleaner Transport: Infrastructure	Installation of an innovative pollution mitigation measure to capture and filter emissions from road-based vehicles	2027	Local Authority Environmental Protection, Local Authority Strategic Transport and Highways	Lewisham were awarded a grant from the Mayors Air Quality Fund in 2024 (£132,532) to implement an innovative pollution mitigation measure (Roadvent) at a location near a school or nursery in an AQMA and AQFA and to measure the impact that the measure has on air pollution and exposure. The project will provide an opportunity to raise awareness and to promote the uptake of active travel considering the vast reduction in personal air pollution exposure during the school commute and allow the community to participate in a citizen science project. The Roadvent product is an infrastructure extraction system which is installed into roads in order to capture and filter emissions from road-based vehicles, including NO2, PM2.5 and PM10. Independent testing has shown 'Roadvent' to reduce human exposure to emissions at the roadside by up to 91%. Work commenced on the project in 2024 and a site has been selected which is currently being taken forward to the feasibility stage.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
1.A	Air Quality (AQ) Monitoring	Maintaining and where possible expanding monitoring networks. Combined with other LA statutory duties, maintaining monitoring networks is critical for understanding where pollution is most acute, and what measures are effective to reduce pollution.	On Going	Local Authority Environmental Protection	Please see updates provided below.
1.A.1	AQ Monitoring	NO_2 diffusion tubes	On Going	Local Authority Environmental Protection	In 2018, the diffusion tube network was expanded to include 50 additional sites. In September 2020, a further 51 diffusion tubes were installed across Lewisham as part of the Low Traffic Neighbourhood project. In 2022, 40 additional diffusion tubes were deployed around schools, care homes and in areas of significant traffic in the borough. In 2023, 3 additional tubes were deployed to support the regeneration project in Lewisham High Street/Market. In 2024, 3 additional tubes were deployed to support the regeneration project in Lewisham High Street/Market and 1 additional tube was installed in Deptford near the Air Quality Monitoring Station (AQMS). There are a total of 148 diffusion tubes located (excluding the 2 duplicates) across the borough. The continuity of the later monitoring regime will depend on funding.
1.A.2	AQ Monitoring	Borough's automatic monitors	On Going	Local Authority Environmental Protection	The Council will continue to monitor air quality via 4 automatic monitoring stations and assist with the supersite located at Honor Oak Park. Discussions are ongoing regarding the decommissioning of the Deptford AQMS. The decommissioning of the site is being considered due to major works in the area, which have rendered the

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
					location no longer viable. The addition of further PM2.5 automatic monitors will depend on available funding. New Maintenance and Service contracts have been awarded to WeCare4Air and Ricardo AEA. The Data Management contract has been renewed with Imperial College, London.
1.A.3	AQ Monitoring	Real time trialling monitoring using Sensors	2027	Local Authority Environmental Protection	The Council will continue to monitor air quality via 4 automatic monitoring stations and assist with the supersite located at Honor Oak Park. In 2024, 13 Breathe London nodes were operational in the borough. These sensors provide live data for NO2 and PM2.5. The council has started a project to increase the air quality monitoring network across the borough by deploying 100 small automatic air quality sensors which will measure, nitrogen dioxide, carbon dioxide, ozone, particulate matter (10 and 2.5), temperature and humidity all in real time. The date will be available through a public platform. At the end of 2024, 25 sensors had been installed across the borough. The council received funding from the DEFRA Air Quality Grant Programme in 2023, part of the project is a 4-year air quality measurement campaign, using air quality sensors, to feed into and provide evidence to evaluate the success of improving public awareness, improving knowledge, and reducing exposure to air pollution in relation to NO2 and particulate matter. Six air quality sensors will be installed in 2024 as part of the project, in areas with woodburning issues and areas where school streets are planning to be installed.
1.A.4	AQ Monitoring	At a minimum, working towards meeting interim WHO targets for $PM_{2.5}$ by 2030	2030	Local Authority Environmental Protection, Local Authority Public Health	Lewisham have designed an air quality interactive map which has the DEFRA Air Quality Objectives and WHO objectives as comparisons. All air quality reporting compares data to the DEFRA Air Quality Objectives and WHO objectives. This action is ongoing.
1.B.1	Core statutory duties	Annual Status Report (ASR)	2025	Local Authority Environmental Protection and all Local Authority departments with	The 2024 ASR report was compiled and submitted as planned to DEFRA and the GLA.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
				actions within AQAP	
1.B.2	Core statutory duties	Update AQAP every five years at a minimum and follow LLAQM guidance	2027	Local Authority Environmental Protection and all Local Authority departments with actions within AQAP	The Air Quality Action Plan (AQAP) was audited in 2023 by an external auditor and the outcomes from the audit have been implemented. The 5 year review of the AQAP will follow the prescribed GLA/DEFRA guidance available at the time.
2	Emissions from developments and buildings	Ensuring emissions from construction are minimised	On Going	Local Authority Environmental Protection' Local Authority Planning Department	Lewisham Council will adopt air quality mitigation measures for all developments across the borough. The Local Plan will address all the issues relevant to sustainable development. The new Lewisham Local Plan continues to progress through its public examination. As of April 2025, the process is at an advanced stage - having passed through the examination hearing sessions and consultation on the Inspectors' proposed main modifications. It is anticipated that the examination will conclude during the Spring/ Summer 2025 and that the Council may be in a position to formally adopt the Plan during Summer/ Autumn 2025, at which point its spatial strategy, planning policies and site allocations will have full weight. In the interim, it remains a material consideration for the Council's decision-taking. During the interregnum, Officers will provide decision-takers with advice on the weight that can be applied to the different components of the Plan when determining development proposals. The Council will monitor the performance of the new Local Plan's spatial strategy, planning policies and site allocations through the annual Authority Monitoring Report. The new Local Plan's monitoring regime is set out under its Policy DM7 Monitoring and Review. The Council will publish the Authority Monitoring Report on its website. Register of NRMM are secured in planning conditions with Construction Environmental Management Plans. An overall reduction of the current LAEI construction related PM10 & PM 2.5 emissions is anticipated.
3	Emissions from developments and buildings	Ensuring enforcement of non-road mobile machinery	On Going	Local Authority Environmental Protection, Local Authority	NRMM conditions are being used by the Planning department and were updated in February 2025, the current recording system does not allow the number of conditions

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		(NRMM) air quality policies		Planning department	applied to be retrieved. The Planning department are exploring how this data can be provided.
4	Emissions from developments and buildings	Reducing emissions from CHP and enforcing CHP air quality policy. Ensure smaller developments use ultra-low NOx Boilers or other zero carbon low emission options.	On Going	Local Authority Environmental Protection, Local Authority Planning department	All planning policy requirements are considered as part of the development management process. As of April 2025, the process is at an advanced stage - having passed through the examination hearing sessions and consultation on the Inspectors' proposed main modifications. It is anticipated that the examination will conclude during the Spring/ Summer 2025 and that the Council may be in a position to formally adopt the Plan during Summer/ Autumn 2025, at which point its spatial strategy, planning policies and site allocations will have full weight. In the interim, it remains a material consideration for the Council's decision-taking. During the interregnum, Officers will provide decision-takers with advice on the weight that can be applied to the different components of the Plan when determining development proposals.
5	Emissions from developments and buildings	Enforce Air Quality Neutral policy	On Going	Local Authority Environmental Protection, Local Authority Planning department	100% of relevant applications have been confirmed as Air Quality Neutral in compliance with planning policy.
6	Emissions from developments and buildings	Ensuring adequate, appropriate, and well-located green space and infrastructure is included in new and existing developments	On Going	Local Authority Environmental Protection, Local Authority Planning department	Green space mapping has been reviewed through the Local Plan. All Major applications are being assessed through the Development Management process to ensure they achieve an Urban Greening Factor (UGF) of 0.4 for residential developments and UGF of 0.3 for commercial developments. There are some very urban examples that might not be able to meet the required factor. In these cases, conditions are used to explore how future urban greening can be improved as detailed design work takes place. Improvements to existing open spaces through developer contributions are monitored within the Infrastructure Funding Statement. Biodiversity Net Gain has now become a statutory matter for planning and applies to small and major sites - where 10% improvement must be delivered, the council's planning pages have been updated to reflect this.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
					The new Lewisham Local Plan's spatial strategy and planning policies seek to retain and enhance open space provision across the Borough. The new Local Plan's site allocations, where it is possible and viable, seek to increase provision - by delivering new open space on site, as part of comprehensive redevelopment.
7	Emissions from developments and buildings	Ensuring that Smoke Control Zones are appropriately identified and fully promoted and enforced.	On Going	Local Authority Environmental Protection, Local Authority Safer Communities Service	Promotion and publicity of woodburning and its impact was undertaken during the Autumn/Winter months as part of the DEFRA funded London Woodburning Project. Including the impact of woodburning and open fire regulations, have been shared across our digital channels and featured in the resident newsletter. We've also distributed postcards in libraries and leisure centres across the borough, and highlighted woodburning impacts as part of 'Clean Air Night' in January. The London Woodburning Group have also received funding from the MAQF to support the enforcement of the Clean Air Act. The project has involved training for officers and all the necessary information to undertake enforcement action including information letters, warning letters and the necessary notices. To be able to undertake enforcement the council needs to have a procedure/policy in place which sets out how fines will be set, this will be produced in 2025 in conjunction with the London Woodburning Group. The whole borough is designated a Smoke Control Area and any complaints regarding wood burning are investigated, this includes providing advice and taking enforcement action if required. This work will be further supported by the Air Quality Burdens Grant. The council received funding from the DEFRA Air Quality Grant Programme in 2023, part of the project is a 4-year air quality measurement campaign, using air quality sensors, to feed into and provide evidence to evaluate the success of improving public awareness, improving knowledge, and reducing exposure to air pollution in relation to NO2 and particulate matter. Specifically, around solid fuel burning and schools to include Borough wide messaging and communications. The project will include the launch of new air quality webpages in 2024 which will provide a focal point and easy access to the monitoring results, associated analysis, messaging, to raise public awareness, and encourage behavioural change.
8	Emissions from developments and buildings	Promoting and delivering energy efficiency and	On Going	Local Authority Communications Team, Local	The Council's Housing Retrofit Strategy was approved by Mayor and Cabinet in March 2025. By September 2025 the Council is expected to have retrofitted 250 properties from its own stock using £2.5m funding under the Social Housing Decarbonisation Fund. In March 2025 Lewisham was awarded an additional £7.2m

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		zero carbon retrofitting projects in workplaces and homes, including through using the GLA RE:NEW and RE:FIT programmes, where appropriate, to replace old boilers /top-up loft insulation in combination with other energy conservation measures.		Authority Climate Resilience	funding under the Social Housing Fund Wave 3 supporting a 3-year programme of retrofit works across Lewisham's housing stock that will improve a minimum of 700 homes. The Council's website includes information for residents on how to improve energy efficiency in their homes and the Council has promoted new initiatives such as 'Love Lofts' and 'Future Fit Homes' in partnership with South East London Community Energy.
8.1	Emissions from developments and buildings	Develop and implement strategies for decentralised energy that convert gas heating to low and zero carbon alternatives including heat networks, and upgrade existing large combined heat and power	On Going	Local Authority Planning department, Local Authority Climate Resilience	The Council has continued to develop the energy master planning work completed in 2020 with detailed techno economic assessments of heat network viability in Catford, Lewisham Town Centre and North Lewisham. The Council has worked closely with Veolia in relation to the potential for built connections from the South East London Combined Heat and Power facility. Further work is in progress at Lewisham Town Centre with local stakeholders to determine the commercial basis for a heat network serving the planned development of the shopping centre.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		communal heating to cleaner technology alternatives.			
8.2	Emissions from developments and buildings	Introduce a requirement for a minimum EPC rating for privately rented sector HMOs covered by both the mandatory and additional licensing schemes. Introduce a requirement for any works covered by the Disabled Facilities Grant or discretionary housing improvement grants to meet level D EPC rating in privately owned accommodation.	On Going	Local Authority Housing Services	The Council requires landlords to submit an Energy Performance Certificate (EPC) as part of their Selective or House in Multiple Occupation (HMO) license application. This requirement helps us ensure that properties meet energy efficiency standards. The Council's private sector housing team continues to enforce under the Housing Health and Safety Rating System (HHSRS) for hazards, including hygrothermal conditions such as damp and mould growth, and excess heat and cold and is reviewing the potential to augment work under HHSRS with the Minimum Energy Efficiency Standard legislation. The Council's Housing Retrofit Strategy is due to go to Mayor and Cabinet in March 2025 for approval. The Council provides financial assistance in the form of grants and loans to landlords and owners of vacant properties through our Housing Assistance Policy. This includes support to remedy Category 1 and Category 2 hazards, such as damp and mould, excessive heat and cold, and other health and safety concerns. The policy also covers the provision of 270mm loft and cavity wall insulation, as well as other improvements that enhance the energy efficiency of properties, ensuring they meet a minimum EPC rating of C

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
9	Emissions from developments and buildings	Master planning and redevelopment areas aligned with Air Quality Positive and Healthy Streets approaches.	On Going	Local Authority Planning department, Local Authority Climate Resilience, Local Authority Strategic Transport and Highways	The Council is currently seeking feedback on Lewisham's Healthy Neighbourhoods programme, designed to make neighbourhoods more walking and cycling-friendly, improve accessibility for disabled and wheelchair users, make local roads greener, improve air quality and reduce danger and congestion through residential roads. The new Local Plan's planning policies seek to secure high quality design for new developments this includes consideration of air quality issues - with building design seeking to minimise, mitigate and manage possible air quality impacts - such as those that could arise through the "canyon effect". In addition, all projects that are funded by TfL and delivered by the Council are required to adopt the Healthy Streets approach.
9.1	Emissions from developments and buildings	Installation of residential electric charge points on new developments	On Going	Local Authority Planning department, Local Authority Strategic Transport and Highways	The Planning department secures electric vehicle charging points by using planning conditions in accordance with the London Plan standards.
10	Public health and awareness raising	Public Health department taking shared responsibility for borough air quality issues and implementation of Air Quality Action Plans/ we will ensure that Directors of Public Health (DsPHs) have been fully briefed on the scale of	On Going	Local Authority Environmental Protection, Local Authority Public Health	The Health Protection Forum (renamed from Committee) signs off the Annual Status Report (ASR) which is chaired by the Director of Public Health or her deputy. The Director of Public Health also chairs the Air Quality Strategy and Air Quality Working Group which led the preparation and signing off the 2022-2027 Air Quality Action Plan which was later signed off by the GLA and the Mayoral cabinet.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		the problem in our local authority area; what is being done, and what is needed.			
10.1	Public health and awareness raising	The Council's political leadership will champion the issue of air quality inside and outside of the borough. Our previous Air Quality Champion, Cllr Louise Krupski was appointed in May 2018, and has actively been engaging with the community, schools, and construction companies to promote actions to help reduce air pollution across the borough. Our new Air Quality Champion Cllr Yemesi	On Going	Local Authority members of the Council, as designated	Cllr Louise Krupski (portfolio holder) has six weekly meetings with the Head of Environmental Health and the Director of Public Realm to receive regular updates on progress and actions being taken in respect to air quality. Cllr Krupski also attends the quarterly Air Quality Working Group meetings which is chaired by the Director of Public Health.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		Anifowose will continue this work.			
11	Public health and awareness raising	Engagement with businesses/Public Health Teams will be supporting engagement with local stakeholders (businesses, schools, community groups and healthcare providers). The support will be via the DsPHs when projects are being developed.	On Going	Local Authority Environmental Protection, Local Authority Public Health	This piece of work is ongoing. The Environmental Protection and Public Health Teams are working with schools to raise awareness about the health impacts of air quality not only through the school Superzone work, school air quality audits but also a set of communication materials have been developed to use with all schools in the borough and monitor these health impacts more closely. Lesson plans and lessons were developed as part of the school Superzone round 1 project, these have been further developed and will be available for all schools to access via the council's new air quality webpages which will go live in early 2024.
11.1	Public health and awareness raising	Director of Public Health to have responsibility for ensuring their Joint Strategic Needs Assessment (JSNA) has up to date information on air quality impacts on the population Strengthening	On Going	Local Authority Environmental Protection, Local Authority Public Health	The Director of Public Health (DPH) signs off the statutory ASRs and the Air Quality Action Plan (2022-27) through the Air Quality Strategy and Working Groups as both the groups are chaired by the DPH. The ASRs are signed off formally by the Heath Protection Forum (Committee) which is also chaired by the DPH. The Air Quality Joint Strategic Needs Assessment has been updated with up-to-date information on air quality impacts on the population.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		coordination with Public Health by ensuring that at least one Consultant grade public health specialist within the borough has air quality responsibilities outlined in their job profile. Director of Public Health to sign off Statutory Annual Status Reports and all new Air Quality Action Plans			
11.2	Public health and awareness raising	Engagement with businesses – Delivery and Servicing Plans (DSP) delivered through Planning process	On Going	Local Authority Environmental Protection, Local Authority Public Health' Local Authority Planning department, Local Authority Strategic Transport and Highways	The Director of Public Health and her team supports projects implemented on improving the air quality in the borough. The installation of parcel lockers at Lewisham town centre is currently being planned as part of the improvement programme funded by the Levelling Up Fund.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
11.3	Public health and awareness raising	Raise awareness on the impact of indoor air quality on human health	On Going	Local Authority Environmental Protection, Local Authority Public Health	The review of the 'Air Quality in Context' leaflet has been put on hold to ensure that the messaging aligns with the new air quality webpages which are due to go live in 2025. Promotion and publicity of woodburning and its impact was undertaken during the Autumn/Winter months as part of the DEFRA funded London Woodburning Project. The impact of woodburning, has been shared across the Council's digital channels and featured in the resident newsletter. Postcards have also been distributed in libraries and leisure centres across the borough and highlighted the impacts of woodburning as part of 'Clean Air Night' in January.
12	Public health and awareness raising	Supporting a direct alerts service such as Lewisham App or AirText, and promotion and dissemination of high pollution alert services	On Going	Local Authority Environmental Protection, Local Authority Public Health, Local Authority Communications	Promotion of the Lewisham Air App was paused from Jan - June 2024 due to technical download issues. Now resolved, the app is available on both Android and Apple platforms, and promotion has resumed across social and digital channels (i.e. resident newsletter). Alerts will be aligned with relevant awareness days through a collaborative comms calendar which is being developed.
12.1	Public health and awareness raising	Engaging with communities through the work of the Borough of Culture 2022 (BoC) and monitoring number of bids for: a call to action on climate change/working together to deliver change.	2023 - Completed	Local Authority Environmental Protection, Local Authority Public Health, Local Authority Communications	Lewisham was the London Borough of Culture in 2022. Part of the programme of events and engagement was 'Breathe:2022'. 'Breathe:2022' was a new artwork by Dryden Goodwin, produced by Invisible Dust, which saw over 1,300 drawings appear on bridges and buildings across the borough, culminating in a projection on the side of Lewisham Old Town Hall. Six local clean air activists sat for portraits of them 'fighting for breath' to highlight the impact of air pollution at heavily polluted sites such as the South Circular Road. Alongside 'Breathe:2022', an engagement programme 'Drawing Breath' saw over 100 local school children create their own animation. Meanwhile, residents got involved in a 'Community Day of Action' at the Horniman Museum and Gardens in July. Part of its power was the way 'Breathe:2022' interlinked with political discourse, including the expansion of London's Ultra Low Emission Zone and the proposal of Ella's Law, which fights to establish clean air as a human right into UK law.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
					'Breathe:2022' became a national project, viewed an estimated 13 million times. Together with the surrounding media, it raised awareness of air pollution as one of the biggest dangers we face today, encouraging action on both an individual and political level.
13	Public health and awareness raising (School)	Encourage schools to join the TfL STARS accredited travel planning programme by providing information on the benefits to schools and supporting the implementation of such a programme	On Going	Local Authority Environmental Protection, Local Authority Strategic Transport and Highways	The Council has continued to work closely with Schools and support them in their travel plans and TfL Travel for Life (previously STARS) accreditation. However, the staffing constraints faced by schools have significantly impacted their engagement with the programme. In addition, reduced funding for borough school travel officers has reduced the ability of the Council to support active and sustainable travel. Currently, 8% of schools are Silver Accredited and 6% are Gold Accredited across the Borough. The Director of Public Health (DPH) and her team will provide further support towards the TfL Travel for Life accreditation of the schools. The Council has also continued to expand school streets in the Borough. Currently Lewisham has the highest proportion of schools with a traffic-free School Streets scheme out of all the London boroughs. Lewisham's proportion is 54%, a figure significantly higher than the London average of 23% (source: London Boroughs Healthy Streets Scorecard). Three new School Streets have been implemented in 2024/25, with another two planned for delivery in 2025/26. These School Streets introduce traffic restrictions at school drop off and pick up times to support those wanting to walk, cycle or scoot to school, and to help to create a calmer, safer and cleaner environment near to the school gates.
14	Public health and awareness raising (schools)	Complete and adopt the draft LBL Air Quality School Action Plan School-specific actions are included in	On Going	Local Authority Environmental Protection, Local Authority Public Health, Local Authority Strategic Transport and	The LBL Air Quality School Action Plan (AQAP) has been completed and adopted together with the AQAP. The Council continues to support and encourage schools to compile their own AQAPs using the School Superzone. Lewisham received funding (30k) from the GLA for the 4th round of School Superzone work in 2023, for a superzone to be implemented around Kender Primary School and Edmund Waller Primary School. This is the first time a superzone has encompassed two schools. The round 4 School Superzone was launched in 2024 with celebrations

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		the draft LBL action plan.		Highways, Local Authority Climate Resilience, Local Authority Fleet	of Clean Air Day in both schools, with MP Smarter Travel leading the project. Clean Air Day was celebrated by hosting air quality awareness workshops at both schools, educating students, staff, and parents on the importance of improving air quality alongside an anti-idling event hosted by the students. Three air quality workshops were undertaken at each school with pupils from Year 4, 5 and 6. Each workshop began with an interactive educational air quality presentation (covering air pollution causes, impacts, and solutions, as well as key engine idling information). This was followed by a creative session in which students made posters to raise awareness about the dangers of air pollution/engine idling and promote solutions to these problems. These workshops were followed by anti-idling events in both the schools led by pupils. A school travel plan delivery was also developed to help manage and support school travel plans, working with schools to encourage their involvement with school champions along with promotion for lift share scheme within the schools for staff who do have to drive and seeing if any can carshare. Individual portable air quality monitors were used to increase the pupil and staff engagement and awareness of air quality, the project supported the schools with air quality monitors and the data collected by students were analysed alongside existing to identify lower pollution walking routes to school. Walking maps were created by auditing each road in the Superzone area for road safety and air pollution elements. These maps were presented to the schools, and they are now displayed to help pupils and parents to take less polluted routes to school. Reviews of the school streets were undertaken at both schools by looking at idling and possible displacement due to the school street. This helped to strengthen enforcement of anti-idling around both Schools and restrictions on car use around schools at times. This also helped in encouraging schools to achieve and maintain the bronze, silver or gold status for Travel for Life (Formerly TFL STARS programme). Additional funds were provided to each school to help improve the school superzone in and around the school. Edmund Waller Primary School is using the School Superzone Funds for a Cooking Space and Kitchen / Wellbeing Garden at the School premises to promote healthy eating, educate children on food origin and sustainability. The space will allow children to plant, grow and cook with their own produce. Kender Primary School is utilising the fund to improve and update their main entrance to the school to ensure that their children have access to a safe route out of our school away from local traffic that is accessible for all as part of

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
					their active travel plan. They plan to build a new double gate, improving the access for all families including pupils with installation of a ramp to level out the playground with that of Faulkner Street. The gates will also have mosaics designed by a local artist in collaboration with all stakeholders (using an inclusive approach to incorporate suggestions from ex Kender students, our children and their families with a unifying theme). This project has been completed and the final report has been submitted to the GLA. Anti-idling signage has been installed in locations across the borough near schools and the Council has the power to fine drivers who keep running an engine while stationery without reason. In practice enforcement action is hard to execute as drivers will usually either comply with a request to cut their engine or drive away. Officers continue to work with head teachers and parents to reduce air pollution around schools with workshops on air quality and idling. In 2024 the Council delivered works to decarbonise two schools Dalmain and Downderry. At Dalmain School the final gas boiler at the school was replaced with an Air Source Heat Pump with wider works including insulation, works to the kitchen block and upgrades to hot water. These works are forecast to save 30.5 tonnes of CO2 annually and mean that the school has now removed itself from any reliance on gas supply for heating, hot water and in the kitchens. At Downderry the gas boiler was replaced with an Air Source Heat Pump, and LED lighting and solar photovoltaic panels were installed, saving a forecast 53.5 tonnes of CO2 annually. The Council has been awarded £226k under the Mayor of London's Greener Schools Fund to install solar panels and other works at three Lewisham Schools, Baring, Stillness Infants and Stillness Juniors. Lewisham Council continues to convene a Schools Climate Network meeting each term. Officers are also working closely with the Young Mayor Advisors group to support the development of climate action led by young people. In January 2024 the Council, in partnership with the Horniman Museum, ran a Big Schools Climate Conference for 10 primary schools with workshops including one on air quality which was run by MP Smarter Travel, a Dragon's Den where pupils could pitch for funding for their school to undertake a climate change project and an art

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
					competition. The air quality workshop gave the children the opportunity to showcase and improve their air quality knowledge with clear take home messages. Rain gardens and sustainable drainage have been delivered in Dalmain, Athelney, and Elfrida Primary Schools. These projects have added over 200m² of planting in playgrounds that previously lacked green space. The Public Health and Environmental Protection teams have worked together to carry out air quality audits at 10 schools in Lewisham which were completed in 2023. These air quality audits were undertaken by WSP, all schools received copies of the finial audit reports. During 2024 all of the schools accepted the £5000 Air Quality Starter pack to help them start implementing the measures identified within the air quality audits. Evidence is now being received of the impact the funding has had. Once all of the schools have provided evidence, a case study will be produced to show what the project has achieved. The schools which were audited were: Adamsrill Primary School, Ashmead Primary School, Baring Primary School, Edmund Waller Primary School, Fairlawn Primary School, Good Shepherd Primary School, Kender Primary School, Our Lady & St Philip Neri, Stillness Junior School, & Torridon Primary School. Measures were identified at nine of the schools which included greening schemes (green screening). The Council commissioned MP Smarter Travels to design and deliver a clean air communications campaign to raise awareness of the harm caused by poor air quality and how individuals could take action to reduce their emissions. Lesson plans were developed as part of the project, these have been reviewed during 2024 and will be available to all schools via the new Council air quality pages which will be launched in 2025. This project was funded through the school Superzone project (Round 1). At the end of 2024/25 there are 55 School Streets in Lewisham, up from 48 school streets at the end of 2023/24. 6 further School Streets are proposed over the next 3 years subject to TfL funding, with a further 3 delivered as part of wider neighbourhood projects. Currently Lewisham has the highest proportion of schools with a traffic-free School Streets scheme out of all the London boroughs. Lewisham's proportion is 54%, a figure significantly higher than the London average of 23% (source: London Boroughs Healthy Streets Scorecard). Three new School Streets have been

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
					implemented in 2024/25, with another two planned for delivery in 2025/26. These School Streets introduce traffic restrictions at school drop off and pick up times to support those wanting to walk, cycle or scoot to school, and to help to create a calmer, safer and cleaner environment near to the school gates. All of the buses operated by Lewisham Passenger Services are only 5 years old and have Ultra Low Emission engines. Any buses we may hire in would be the same engine category.
15	Delivery servicing and freight	Update local authority procurement policies to include a requirement for suppliers with large fleets to have attained silver Fleet Operator Recognition Scheme (FORS) accreditation and incorporate the use of the Social Value tool kit for the delivery of additional economic, social and environmental benefits that can be created from the 4 objectives	2023 - Completed	Local Authority Procurement and Commercial Services	All bidders are obliged to follow the Sustainable Procurement Code of Practice for Contractors 2022. In addition, when Lewisham tenders there is a 10% allocation against social value (as appropriate) for projects above 50k. The most suitable KPIs are selected by the lead stakeholder and in addition this is then measured in the contract.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		and associated KPIs.			
16	Delivery servicing and freight	Reducing emissions from deliveries to local businesses and residents	On Going	Local Authority Procurement and Commercial Services	All bidders are obliged to follow the Sustainable Procurement Code of Practice for Contractors 2022. In addition, when Lewisham tenders there is a 10% allocation against social value (as appropriate) for projects above 50k. The most suitable KPIs are selected by the lead stakeholder and in addition this is then measured in the contract.
16.1	Delivery servicing and freight (Borough)	Feasibility study of borough-wide freight to support consolidation (or micro consolidation) of deliveries, by setting up or participating in new logistics facilities, and/ or encourage businesses to participate in these.	On Going	Local Authority Procurement and Commercial Services' Local Authority Strategic Transport and Highways	Lewisham is also in the process of investigating the feasibility of using the Holbeach multistorey car park as a micro-logistics hub and space for green tech uses (materials reuse/circular economy businesses). Lewisham have withdrawn from the Cross River Partnership, (CRP). Therefore, the parcel locker initiative through either of CRP's Clean Air Logistics for London (CALL) project and Smarter Greener Logistics (SGL) programme will not proceed.
17	Borough fleet actions	Increasing the number of hydrogen, electric, hybrid, biomethane and cleaner vehicles in the boroughs' fleet. Accelerate uptake of new	On Going	Local Authority Fleet	A fleet replacement programme is currently underway. As part of this initiative: • All newly procured vehicles are, where feasible, either electric or hybrid. • All refuse collection vehicles are fully compliant with Euro VI standards. The smaller fleet (including pool vehicles and light vans) is being progressively replaced with plug-in hybrid and petrol models in cases where electric alternatives are not yet viable. This approach significantly increases the proportion of ultra-low and zero-emission vehicles within the borough's fleet. The programme ensures full compliance with Euro VI standards across all vehicle categories.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		Euro VI vehicles in borough fleet.			These efforts support the borough's broader sustainability and air quality improvement objectives.
17.1	Borough fleet actions	Reducing emissions from Council fleets by Smarter Driver Training, or equivalent, for drivers of vehicles in borough fleet i.e. through training of fuel efficient driving and providing regular re-training of staff.	On Going	Local Authority Fleet	The refuse vehicles are equipped with telematics systems that provide real-time feedback on driver behaviour. This enables continuous monitoring of driving patterns and helps identify areas for improvement. Additionally, managers are trained to reassess drivers based on telematics data, ensuring that driving practices remain fuel-efficient and safe. An annual review of each driver's performance and driving characteristics is also conducted, reinforcing accountability and promoting continuous improvement in alignment with the Council's environmental goals.
18	Localised solutions	Expanding and improving green Infrastructure across the borough and in localised areas with high level of pollution (e.g. around the south circular for example)	On Going	Local Authority Parks, Sports and Leisure	Parks trees: In 2024, 3,703 whips were planted, including three tiny forests in Chinbrook Meadows, Forster Memorial Park, and Blythe Hill Fields, as well as 1,800 whips in Beckenham Place Park. Additionally, 22 standard trees were planted. Street Trees: In 2024, 675 standard street trees were planted in partnership with Street Trees for Living. Green Scene tree planting vs. tree loss: In 2024, 675 trees were planted versus 142 losses, achieving a ratio of greater than 4:1. Hedgerow: In 2024, over 300 linear meters of hedgerow were established at various locations including Durham Hill, Forster Memorial Park, Edith Nesbit Park, and Beckenham Place Park. A Tree Risk Management Policy has been consulted on and will be published in 2025. Lewisham's parks were rated no.1 in the Good Parks for London Report 2024 and won 3 Gold Awards for parks and conservation at the London in Bloom Awards 2024.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
					As part of the No Mow Zone project approximately an additional 2ha of grass verges and enclosures are cut less frequently which increases the total area of meadows (cut only once or twice/year) to c.44ha in Lewisham.
19	Localised solutions	Low Emission Neighbourhoods (LENs) or/and Business Low Emission Neighbourhood (BLEN)	On Going	Local Authority Strategic Transport and Highways	The Council is currently seeking feedback on a proposed Healthy Neighbourhood at St Johns and Tanner's Hill area as part of Lewisham's Healthy Neighbourhoods programme, designed to make neighbourhoods more walking and cycling-friendly, improve accessibility for disabled and wheelchair users, make local roads greener, improve air quality and reduce danger and congestion through residential roads. Another Healthy Neighbourhood project will be initiated in 2025/26, with a third Healthy Neighbourhood planned to commence in 2026/27 subject to funding.
19.1	Localised solutions	Work with all the relevant organisations to improve air quality on strategic roads such as the South Circular and other major roads around.	On Going	Local Authority Environmental Protection, Local Authority Strategic Transport and Highways, TfL, GLA	The ULEZ was expanded in August 2023. Lewisham continues to work with TfL on the rerouting of the A205 as part of the Catford regeneration project.
20	Cleaner transport: Policy	Ensuring that transport and Air Quality policies and projects are integrated. Ensure that the Head of Transport has been fully briefed on the Public Health duties and	On Going	Local Authority Environmental Protection, Local Authority Strategic Transport and Highways	The Transport, Fleet and Environmental Health teams all report to The Director of Public Realm which ensures that all related polices and projects are integrated and joined up. The Director of Place also signs off the AQAPs/ASRs.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		the fact that all directors (not just Director of Public Health) are responsible for delivering them, as well as on air quality opportunities and risks related to transport in the borough.			
20.1	Cleaner transport: Zoning	Lobbying/working with TfL on: Speed control measures on more Strategic roads, and Low Emission Zones. E.g. lowering the legal speed limit to 20mph in built up residential areas.	On Going	Local Authority Environmental Protection, Local Authority Strategic Transport and Highways	Anti-idling signage has been installed at locations across the borough near schools and the Council has the power to fine drivers who keep running an engine while stationery without reason. In practice enforcement action is hard to execute as drivers will usually either comply with a request to cut their engine or drive away. Officers continue to work with head teachers and parents to reduce air pollution around schools with workshops on air quality and idling. The Ultra Low Emission Zone (ULEZ) was expanded in August 2023 and now covers the entirety of Lewisham. The Council is continuing to work together with TfL to promote schemes that lower speed limits, including on the A205, A20, and A2 roads. TfL announced the relevant proposals in September 2023 along with implementation timescales: *https://tfl.gov.uk/info-for/media/press-releases/2023/september/tfl-to-launch-65km-of-new-lower-speed-limit-schemes-to-cut-road-danger-across-the-capital-and-save-lives#:~:text=A%2020mph%20limit%20will%20be,to%20go%20live%20in%20October*
21	Cleaner transport: Programme	Discouraging unnecessary idling by taxis and other vehicles	On Going	Local Authority Environmental Protection, Local Authority Parking	The Lewisham Schools Air Quality/Idling workshops started in November 2022 and the programme is ongoing.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		and carry out a Council wide anti-idling campaign discouraging unnecessary idling around all venerable receptors. Idling Action Events/workshops and enforcement around schools		Services, Local Authority Communications	Lewisham was part of a successful joint bid to the MAQF in 2024 for funding for a project focused on reducing commercial sector vehicle engine idling by engaging with fleet operators, driving instructors, and policymakers. Idling signage has been installed in key locations and banners have been produced for schools. This work has been incorporated into a wider Climate Emergency forward plan for 2024 (Greener Lewisham).
21.1	Cleaner transport: Programme	Increasing the proportion of electric, hydrogen and ultra-low emission vehicles in Car Clubs.	On Going	Local Authority Environmental Planning department, Local Authority Strategic Transport and Highways	Officers continue to work with car club operators across the borough to increase the number of residents using car clubs instead of private vehicles. As part of the Sustainable Streets programme, more car club bays will be delivered to support an uptake in car clubs. Car club requirements as part of active travel plans are being captured through the Development Management process for new developments.
21.2	Cleaner transport: Programme	Working with TFL to promote car scrappage schemes or other retrofit technologies and lobbying government to provide funding for car scrappage schemes.	2025 - Completed	Local Authority Environmental Protection, Local Authority Strategic Transport and Highways, TfL	Following more than 54,000 successful applications, the Mayor of London's scrappage scheme has closed for new applications. It provided financial assistance to help eligible London residents, businesses and charities, to scrap, donate or retrofit vehicles that do not meet the Ultra Low Emission Zone (ULEZ) emissions standards. The scheme was promoted by the Council to encourage applications.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
22	Cleaner transport: Programme	Pedestrianisation: Temporary car free days and pedestrian Days (e.g. no vehicles on certain roads on a Sunday) and similar initiatives.	On Going	Local Authority Environmental Protection, Local Authority Strategic Transport and Highways	The Council is currently consulting on the proposed pedestrianisation of part of Deptford High Street from New Cross Road to Hamilton Street every day during set hours. The Detailed Design stage is programmed to be completed in autumn 2025. Implementation is anticipated to be completed in winter 2025/26, subject to Mayor and Cabinet approval.
22.1	Cleaner Transport: Infrastructure	Pedestrianisation / Traffic calming measures/Road system redesign.	On Going	Local Authority Environmental Protection, Local Authority Strategic Transport and Highways, TfL	Examples of Council infrastructure initiatives, both recently delivered and in progress, which introduce pedestrianisation and traffic calming include: • Design development of road danger reduction measures at Baring Road. • Implementation of road danger reduction measures at: o Hither Green Lane and Courthill Road between Torridon Road and Lewisham High Street. o Lee Terrace and Belmont Hill between A20 Lee High Road and Lee Road. o The junction of Lee Terrace and Lee Road. • Design development of proposed public realm improvements and pedestrianisation at Deptford High Street. • Feasibility of walking and cycling interventions, traffic management measures, and public realm improvements at the Bell Green gyratory. • Implementation of three new School Streets at St Stephen's Church of England Primary School, St Matthew Academy, and Bonus Pastor School (2 sites), Downderry School, and New Woodlands School. • Programme of pedestrian crossings and other improvements to provide safer routes to school.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
					Lewisham were awarded a grant from the Mayors Air Quality Fund in 2024 (£132,532) to implement an innovative pollution mitigation measure (Roadvent) at a location near a school or nursery in an AQMA and AQFA and to measure the impact that the measure has on air pollution and exposure. The project will provide an opportunity to raise awareness and to promote the uptake of active travel considering the vast reduction in personal air pollution exposure during the school commute and allow the community to participate in a citizen science project. The Roadvent product is an infrastructure extraction system which is installed into roads in order to capture and filter emissions from road-based vehicles, including NO2, PM2.5 and PM10. Independent testing has shown 'Roadvent' to reduce human exposure to emissions at the roadside by up to 91%. Work commenced on the project in 2024 and a site has been selected which is currently being taken forward to the feasibility stage.
22.2	Cleaner transport: Infrastructure	Pedestrianisation/ Lee Green Low Traffic Neighbourhood (LTN)	2025	Local Authority Strategic Transport and Highways	The final monitoring of the Lewisham and Lee Green LTN was presented to Mayor and Cabinet in September 2024 which showed that overall: • With few exceptions, traffic levels on roads within and surrounding the LTN continue to decrease; • Vehicle speeds have reduced by an average of 2.0mph on roads within and surrounding the LTN, and are below the 20mph speed limit in the majority of cases; • Air quality has shown improvements on all roads monitored, with a 21.6% decrease in NO2 levels observed on the overall network since 2019. The majority of roads monitored show NO2 levels below the WHO guidelines of 25µg/m3 mean over a 24-hour period and all sites remain below the 40µg/m3 EU/UK legal limit across the area; • Bus journey times have continued to operate within a comparable time prior to the LTN being implemented; • Collisions (including slight and KSI) have seen a reduction by 19% since before the LTN was implemented.
23	Cleaner transport: Policy	Using parking policy to reduce pollution	On Going	Local Authority Parking	We continue to operate a system of emission-based parking charges, the amount paid for a parking permit or to park in a short-stay parking bay is calculated on the basis of the vehicle's emissions, with more polluting vehicles charged more.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		emissions and adoption of low charges at existing parking meters for zero emission cars. There will be emissions based parking for Short Stay Parking and for motorcycles.			
23.1	Cleaner transport: Traffic management	Emissions based parking for Short Stay Parking and for motorcycles.	On Going	Local Authority Parking	We continue to operate a system of emission-based parking charges, the amount paid for a parking permit or to park in a short-stay parking bay is calculated on the basis of the vehicle's emissions, with more polluting vehicles charged more.
23.2	Cleaner transport: Traffic management	Controlled Parking Zone Extension for Climate Change Emergency.	On Going	Local Authority Strategic Transport and Highways	The Sustainable Streets programme is progressing to extend the coverage of CPZs across the borough and introduce sustainable transport measures alongside parking controls to encourage a switch to walking, cycling, public transport and low emission vehicles. Since the programme was launched, new CPZs have been introduced to Deptford (May 2024), Evelyn (February 2024), and Honor Oak (Crofton Park) and Ravensbourne Park (Catford) (January 2024).
23.4	Cleaner transport: Traffic management	Enhanced parking enforcement for Safer Lewisham and to improve walking and cycling	On Going	Local Authority Parking, Local Authority Strategic Transport and Highways	The latest TfL data for collisions (fatal, serious, and slight) in Lewisham shows a reduction from 809 in the period between January and November 2023 to 783 in the latest reported period of January to November 2024. More information can be found at: https://tfl.gov.uk/corporate/publications-and-reports/road-safety
24	Cleaner transport: Infrastructure	Installation of Ultra-Low Emission Vehicle	On Going	Local Authority Strategic Transport and Highways, Local	The Planning department secures electric vehicle charging points by using planning conditions in accordance with the London Plan standards.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		(ULEV) infrastructure. The installation of rapid chargers to help enable the take up of electric taxis, cabs and commercial vehicles (in partnership with TfL and/or OLEV). This action is not related to new development		Authority Planning department	
24.1	Cleaner transport: Programme	Continue campaigns to promote the use of electric charge points within the borough.	On Going	Local Authority Communications, Local Authority Strategic Transport and Highways,	Lewisham Council is now part of a framework of electric vehicle charging point suppliers which will support delivery of a minimum of 50 additional charge points under the current Sustainable Streets programme. Lewisham is the lead bidder on a joint funding application with Greenwich for funding in the region of £3m. This funding will deliver the ambition of at least one electric vehicle charging point within a minimum of 500m. Continued work for electrical charging points has been included in Climate Emergency Forward Plan. Promotion has also been included in phase 2/3 consultations for Sustainable Streets Programme, where we are expected to introduce more charging points across 60% of the borough. Comms have been shared across resident news, social media and press release. We have also promoted through our Healthy Neighbourhoods consultation, we are currently analysing the data from our previous consultation and are expected to install EV charging points across the St Johns and Tanners Hill area. This will be promoted across social and digital channels and Out of Home Advertising which will include posters on bus stops.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
					Mayor and Cabinet approved the procurement of a contract for a supplier of electric vehicle charge point operation and maintenance on 23 October 2024. The tender process has closed and the contract which will have a 15-year duration is due to be awarded.
25	Cleaner transport: Infrastructure	Provision of infrastructure to support walking and cycling	On Going	Local Authority Strategic Transport and Highways,	The funding secured through the Cycleways Network Development (CND) stream for 2024/25, which was based on bids submitted by the Council, amounted to £1.883m. Examples of Council infrastructure initiatives, both recently delivered and in progress, which directly support walking and cycling, include: • A dockless bike programme and partnership with Lime, which is expanding and improving the operation of cycle hire across the Borough and is delivering marked designated parking bays for e-bikes. • A programme of installing secure cycle storage on residential streets to encourage more people to travel by bike. • Design development of pedestrian crossings and other crossing improvements to provide safer routes to schools. • Construction of a cycleway along Deptford Church Street between the A2 Deptford Broadway/Deptford Bridge and the A200 Creek Road. • Design development and construction for the replacement of the Waterlink Way timber footbridge in Catford. • Design development and construction of cycle contraflow lane at Amersham Vale and Cycleway wayfinding signs and markings from Amersham Vale to Deptford High Street via Douglas Way. • Construction of cycle contraflow lane at Kitto Road. • Design development and construction of cycle contraflow lanes at Leyland Road between the junctions of Dorville Road and Osberton Road and between the junctions of Dorville Road and Underwood Road. • Design development and construction of a cycle route through filtering Cold Blow Lane between Mercury Way and Sanford Walk. • Design development and construction of Cycleway wayfinding signs and markings along section of National Route 21 of the National Cycle Network (NCN) between Catford and Lower Sydenham.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
					• Design development of upgrades to the existing A205 South Circular Road underpass adjacent to Catford and Catford Bridge railway stations. • Construction of Cycleway wayfinding signs and markings along route connecting Brockley, Honor Oak, and Forest Hill railway stations. • Project initiation and feasibility, including stakeholder and public engagement, of a new Healthy Neighbourhood (HN) at St Johns and Tanner's Hill area. • Construction of three new School Streets at St Stephen's Church of England Primary School, St Matthew Academy, and Bonus Pastor School (2 sites), Downderry School, and New Woodlands School. • Design development of proposed public realm improvements and pedestrianisation at Deptford High Street. • Feasibility of walking and cycling interventions, traffic management measures, and public realm improvements at the Bell Green gyratory. Moreover, the Council delivered supporting behaviour change initiatives to address barriers to active travel and encourage uptake of sustainable modes of transport. Such initiatives include amongst others adult and children cycle training, cargo bike loan scheme, Dr Bike events, local community cycling events, school travel planning, and Vision Zero education.
25.1	Cleaner transport: Policy	Update of Cycling Strategy and policies for the borough.	On Going	Local Authority Strategic Transport and Highways	The Council is on track with its targets for the delivery of secure cycle storage facilities, with a total of 232 cycle hangars having been installed to date. The Council is in the process of developing an Active Travel Strategy that integrates existing policies within Strategic Transport and Highways, alongside other local, regional and national strategies, policies, and guidance into one overarching strategy with an associated delivery plan for active travel improvements over the next 7-10 years. The strategy will help support evidence-based long-term planning for project selection and delivery as well as bids for funding, including future submissions for TfL LIP funding, to improve the cycle network within the borough in line with our transport strategy.
25.2	Cleaner transport: Infrastructure	Increasing cycle parking on street and in new developments in	On Going	Local Authority Strategic Transport and Highways, Local Authority	Planning is securing cycle parking on street and in new developments as part of the development management process in accordance with planning policy requirements. The Council is on track with its targets for the delivery of secure cycle storage facilities, with a total of 232 cycle hangars having been installed to date. There is a long request list for cycle hangars and new locations are identified based on demand.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		line with London Plan Standards.		Planning department	The Council is on track with its targets for the delivery of secure cycle storage facilities, with a total of 232 cycle hangars having been installed to date. There is a long request list for cycle hangars and new locations are identified based on demand. • Conversion of existing zebra crossing to signal-controlled crossing at Brockley Road. • New parallel zebra crossing for people who walk and cycle at Perry Rise. • Design development of pedestrian crossings and other crossing improvements to provide safer routes to schools. • Design development of a signal-controlled crossing at Southend Lane, currently anticipated to be implemented in the first half of 2024/25. • Continued delivery of School Streets, such as at Torridon School. • Design development of a cycleway along Deptford Church Street between the A2 Deptford Broadway/Deptford Bridge and the A200 Creek Road, with construction currently anticipated to start between summer and autumn 2024. • Design development to replace the existing footbridge at Waterlink Way, which is part of the National Cycle Network and connects several parks and green spaces in Southeast London, and deliver safety and accessibility improvements. • Implementation of cycle contraflow facilities to 6 existing one-way roads and design development to deliver another 6 in 2024/25. • Cycle wayfinding installation at C10 Creekside to Elverson Road and C10 Folkestone Gardens to New Cross, currently anticipated to be delivered in early spring 2024. • A feasibility of the following new or improved cycle routes: - New Cross Gate rail station to Crofton Park rail station - Limes Grove to Lee rail station via Hither Green rail station - Elverson Road Docklands Light Railway (DLR) station to Catford rail station - Design development of proposed public realm improvements and pedestrianisation at Deptford High Street. Public realm, walking, and cycling improvements along the whole length of Creekside.

3. Planning Update and Other New Sources of Emissions

Table L. Planning requirements met by planning applications in London Borough of Lewisham in 2024[2]

Condition	Number
Number of planning applications where an air quality impact assessment was reviewed for air quality impacts	16
Number of planning applications required to undertake construction dust monitoring and reporting (Please specify how you get access to dust monitoring data i.e. online tool or CSV file)	14
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 as detailed in Air Quality Neutral LPG (london.gov.uk) point 3.1.5.	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	6
Number of developments where the AQ Neutral building and/or transport assessments not meeting the benchmark and so required to include additional mitigation	4
Number of planning applications with S106 agreements including other requirements to improve air quality	4
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 planning applications with conditions related to NRMM included. Number of developments registered at www.nrmm.london. Number of audits (based on the pan-London project report and / or inhouse auditing programme) % of sites unregistered prior to audit % of sites 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 planning applications with conditions related to NRMM included. Number of developments registered at www.nrmm.london. Number of audits (based on the pan-London project report and / or inhouse auditing programme)% of sites unregistered prior to audit % of sites compliant with	8 Conditions 9 registered and compliant 3 unregistered/uncompliant and being chased.

Condition	Number
Stage IIIB of the Directive and/or exemptions to the policy.	

[2] The Information provided in Table L is for MAJOR planning applications received and/or determined in 2024. Due to the way in which the information is held by the Planning department it is not possible to provide the information for all planning applications.

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 Lewisham Fleet

LBL has 330 vehicles in their fleet.

a) Of these 330 vehicles, 2 vehicles are zero-emission vehicles representing 0.61% of the fleet.
b) Of these 330 vehicles, 2 vehicles are zero-emission capable vehicles representing 0.61% of the fleet.
c) The remaining 326 vehicles are not zero emission capable and represents 98.78%

4.2 Pan-London NRMM Auditing Project

London Borough of Lewisham will continue to support the Pan London NRMM project.

4.3 Air Quality Alerts

London Borough of Lewisham will continue to support airTEXT (https://www.airtext.info/) and similar resources. As before, Public Health is also promoting the Lewisham Air App through Lewisham Clinical Commissioning Group (CCG) to raise awareness, so that GPs can promote the app to Chronic obstructive pulmonary disease (COPD) and Asthma patients and their careers. The Lewisham App is also promoted to the respiratory nurses as well to raise awareness amongst COPD & Asthma patients.

This was launched in March 2018. There has been an update to the app to include information in relation to Tranquil Space. This is an exposure reduction initiative, as opposed to targeting emissions. Early warning via text message to vulnerable people, especially those who may be digitally excluded. This enables people to take steps to protect their health.

4.5 Air Quality Positive

London Borough of Lewisham currently do not have any examples of innovative mitigation measures as part of a submitted Air Quality Positive Matrix.

Appendix A Details of Monitoring Site Quality QA/QC

A.1 Automatic Monitoring Sites

Calibrations of continuous monitors are carried out with certified calibration gases for each analyser. Routine calibrations are undertaken manually every 2 weeks by the Local Site Operator (LSO) for LW2, LW4, LW5 and LW6. HP1 is calibrated every four weeks which is the recommended frequency for AURN sites in background locations. The calibration data was sent to ERG (part of Imperial College London), for data management, data validation and ratification up to July 2024, after this date Ricardo PLC have been responsible for LSO activities and data management for all automatic monitors within LBL. Site audits are carried out bi-annually and includes UKAS accredited on-site gas cylinder certification and on-site testing of sampling system efficiency.

A.2 Diffusion Tubes

Diffusion tubes for NO_2 in Lewisham are provided by Gradko International Ltd, using a preparation method of 50% Triethanolamine (TEA) in acetone.

Gradko participates in the AIR-PT scheme. AIR is an independent analytical proficiency-testing (PT) scheme, operated by LGC Standards and supported by the Health and Safety Laboratory (HSL). The Air-PT scheme started in April 2014, combining two long running PT schemes: LGC Standards STACKS PT scheme and HSL WASP PT scheme.

AIR NO_2 PT forms an integral part of the UK NO_2 Network's QA/QC and is a useful tool in assessing the analytical performance of those laboratories supplying diffusion tubes to Local Authorities for use in the context of Local Air Quality Management (LAQM). Defra and the Devolved Administrations advise that diffusion tubes used for LAQM should be obtained from laboratories that have demonstrated satisfactory performance in the AIR-PT scheme.

The results for Gradko International Ltd were overall satisfactory. The laboratory scored 100% satisfactory results between January 2023 and October 2024 (AR055 – AR066) and 50% satisfactory results between January 2025 and February 2025 (AR068).

National Bias Adjustment Factor

The national bias adjustment factor for 2024 is available from the Defra website[3]. The results of multiple co-location studies are collated, and the average bias adjustment factor is taken for studies using the 50% TEA/acetone preparation method, analysed by Gradko. The national bias adjustment factor for 2024 is 0.88, based on 12 studies using v04/25 of the calculator. Details are shown in Figure A.1 below.

Figure A. 1 National bias adjustment factor

National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 04/25

Follow the steps below **in the correct order** to show the results of **relevant** co-location studies
Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods
Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet
This spreadsheet will be updated every few months: the factors may therefore be subject to change. This should not discourage their immediate use.

This spreadsheet will be updated at the end of June 2025
LAQM Helpdesk Website

The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.

Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.

Step 1:	Step 2:	Step 3:	Step 4:
Select the Laboratory that Analyses Your Tubes from the Drop-Down List	Select a Preparation Method from the Drop-Down List	Select a Year from the Drop-Down List	Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor[3] shown in **blue** at the foot of the final column.
If a laboratory is not shown, we have no data for this laboratory.	The preparation method is not shown, we have no data for this method at this laboratory	If a year is not shown, we have no data[2]	If you have your own co-location study then see footnote[4]. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953

Analysed By[1]	ethod (To undo your selection, choose (All) from the pop-up list)	ar (To undo your selection, choose (All))	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m3)	Automatic Monitor Mean Conc. (Cm) (µg/m3)	Bias (B)	Tube Precision[5]	Bias Adjustment Factor (A) (Cm/Dm)
Gradko	50% TEA in Acetone	2024	UB	City Of London Corporation	10	26	21	26.8%	G	0.79
Gradko	50% TEA in Acetone	2024	R	City Of London Corporation	12	34	30	12.1%	G	0.89
Gradko	50% TEA in Acetone	2024	UB	Falkirk Council	11	13	13	-1.6%	G	1.02
Gradko	50% TEA in acetone	2024	SU	Redcar And Cleveland Borough Council	12	12	9	35.4%	G	0.74
Gradko	50% TEA in acetone	2024	KS	Marylebone Road Intercomparison	11	43	36	20.8%	G	0.83
Gradko	50% TEA in acetone	2024	R	Sandwell Mbc	12	30	25	24.2%	G	0.81
Gradko	50% TEA in acetone	2024	UB	Sandwell Mbc	12	19	17	8.0%	G	0.93
Gradko	50% TEA in acetone	2024	R	Sandwell Mbc	12	20	20	-2.6%	S	1.03
Gradko	50% TEA in Acetone	2024	R	London Borough Of Merton	12	27	22	25.7%	G	0.80
Gradko	50% TEA in acetone	2024	UB	London Borough Of Wandsworth	10	19	14	31.7%	G	0.76
Gradko	50% TEA in acetone	2024	R	London Borough Of Richmond Upon Thames	12	18	19	-9.1%	G	1.10
Gradko	50% TEA in acetone	2024	B	London Borough Of Richmond Upon Thames	12	13	13	5.0%	G	0.95
Gradko	50% TEA in acetone	2024		Overall Factor[3] (12 studies)				Use		0.88

Factor from Local Co-location Studies

Bias adjustment is a calculated factor, which shows whether diffusion tubes are over or under reading ambient concentrations and therefore allows for a correction to be made.

LBL has one co-location site at New Cross (LW2), where triplicate diffusion tubes are co-located adjacent to the inlet of the continuous monitor, so that diffusion tube concentrations can be adjusted for bias by comparing to the more accurate continuous monitoring dataset. A spreadsheet tool for calculating the locally derived bias adjustment factor for triplicate tubes co-located at a continuous monitor is available from the Defra website, and has been used to calculate the local factor in Figure A.2, which was calculated to be 0.85.

[3] Defra, Diffusion Tube Bias Adjustment Factors Spreadsheet (04/25), April 2025

Figure A.2 shows the details of the calculation of the local bias adjustment factors. The calculation of local bias adjustment factors takes into account both data capture from diffusion tubes and automatic monitors, and also the coefficient of variation (CV) of the triplicate diffusion tubes. If the CV is too high for a particular period, that period is not taken into account when calculating the local bias adjustment factor. Periods where automatic monitoring data capture rates are less than 90% are also excluded. As shown in Figure A.2 the local bias adjustment factor generated has good overall precision and data capture.

Figure A. 2 Local bias adjustment factor Calculation

	STEP 3a Local Bias Adjustment Input 1	STEP 3b Local Bias Adjustment Input 2
Periods used to calculate bias	12	
Bias Adjustment Factor A	0.85 (0.79 - 0.92)	
Diffusion Tube Bias B	18% (8% - 27%)	
Diffusion Tube Mean (µg/m^3)	29.5	
Mean CV (Precision)	4.4%	
Automatic Mean (µg/m^3) (for periods used to calculate bias)	25.1	
Data Capture (for periods used to calculate bias)	100%	
Overall Data Capture	100%	
Adjusted Tube Mean (µg/m^3)	25 (23 - 27)	
Overall Diffusion Tube Precision	Good Overall Precision	
Overall Continuous Monitor Data Capture	Good Overall Data Capture	
Local Bias Adjustment Factor	0.85	

Discussion of Choice of Factor to Use

A conservative approach was taken, with the national bias adjustment factor selected to be applied to the 2024 monitoring data as it is slightly higher than the local factor.

In the past seven years, a mixture of the national bias and local bias adjustment factor have been used depending on the most appropriate for the year. Table M details both the local and national bias adjustment factors for this and previous years in LBL and includes the choice of factor used.

Table M. Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	National	04/25	0.88
2023	National	03/24	0.83
2022	National	03/23	0.82

2021	National	03/22	0.83
2020	National	03/21	0.82
2019	Local	-	0.91
2018	National	03/18	0.92
2017	Local	-	1.00

A.3 Adjustments to the Ratified Monitoring Data

Short-term to Long-term Data Adjustment

Where data capture is less than 75% and greater than 25% of a full calendar year (between 3 and 9 months), the mean should be “annualised” – i.e. adjusted using the methodology outlined in LLAQM.TG(19) before being compared to annual mean objectives.

There were 10 diffusion tube locations which required annualisation for 2024. Additionally, there was one automatic monitoring site (LW2 New Cross) where data capture was below <75% but >25% for $PM_{2.5}$ only and hence this site was also annualised.

Table N outlines the calculations for the annualisation factors applied to the NO_2 monitoring data whilst Table O outlines the calculations for the annualisation factors applied to the $PM_{2.5}$ monitoring data. London Westminster did not record any $PM_{2.5}$ data for 2024, as such it has not been included in Table O. Data at the reference sites has only been ratified up to the end of 2024, as such 2025 data used for annualisation is provisional and has not been fully calibrated.

Distance Adjustment

A small number of diffusion tubes are not located at relevant public exposure, such as on kerbside lampposts opposed to building facades. Distance correction should only be completed for monitoring sites where the concentration is greater than 36 µg m^{-3}. Distance correction was completed at only 1 site in 2024, L95. NO_2 Fall off With Distance Calculations are presented in Table P.

Table N. Non-Automatic Monitoring Data Adjustment

Site ID	Annualisation Factor London Westminster	Annualisation Factor London Bloomsbury	Annualisation Factor London Bexley		Average Annualisation Factor	Raw Data Annual Mean (µg m^{-3})	Annualised Annual Mean (µg m^{-3})	Comments
L3	1.0426	1.0628	1.0371		1.0475	19.8	20.8	
L54	1.0207	1.0268	1.0148		1.0208	23.1	23.6	
L55	0.9375	0.9587	0.8868		0.9277	27.8	25.8	
L66	0.9601	0.9574	0.9543		0.9573	16.7	16.0	
L82	0.9650	0.9832	0.9276		0.9586	21.6	20.7	
L97	0.8062	0.8445	0.7870		0.8126	40.3	32.8	
L100	1.1267	1.0946	1.1039		1.1084	16.1	17.9	
SSDT_2	0.9015	0.9149	0.9275		0.9146	20.7	18.9	
SSDT_40	1.0248	1.0533	1.0092		1.0291	19.1	19.6	
SSDT_50	0.9294	0.9443	0.9639		0.9458	17.0	16.1	

Table O. Automatic $PM_{2.5}$ Monitoring Data Adjustment

Background Site	Annual Data Capture (%)	Annual Mean (A_m)	LW2							
			Period Mean (P_m)	Ratio (A_m / P_m)	Period Mean (P_m)	Ratio (A_m / P_m)	Period Mean (P_m)	Ratio (A_m / P_m)	Period Mean (P_m)	Ratio (A_m / P_m)
London Honor Oak Park	99.6	6.7	7.2	0.937						
London Bloomsbury	94.0	7.3	7.9	0.926						
London Bexley	99.9	7.7	8.2	0.934						
Average (R_a)			0.933							
Raw Data Annual Mean (M)			9.3							
Annualised Annual Mean (M x R_a)			8.6							

Table P. 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
L95	1.8	2.6	51.9	19.1	**49.2**	

To better understand and visualise temporal trends, annual mean concentrations recorded at all NO_2 monitoring locations have been plotted over time and are displayed below in Figure A .3 – A .17, where AQO is the annual mean Air Quality Objective (40 µg/m^3) and AQO (ST) is the short-term Air Quality Objective (60 µg/m^3). Sites with 2 or less years of monitoring data have been omitted as they do not have enough data to show a trend.

Figure A. 3 Trend in NO_2 concentration at roadside diffusion tube locations (1)

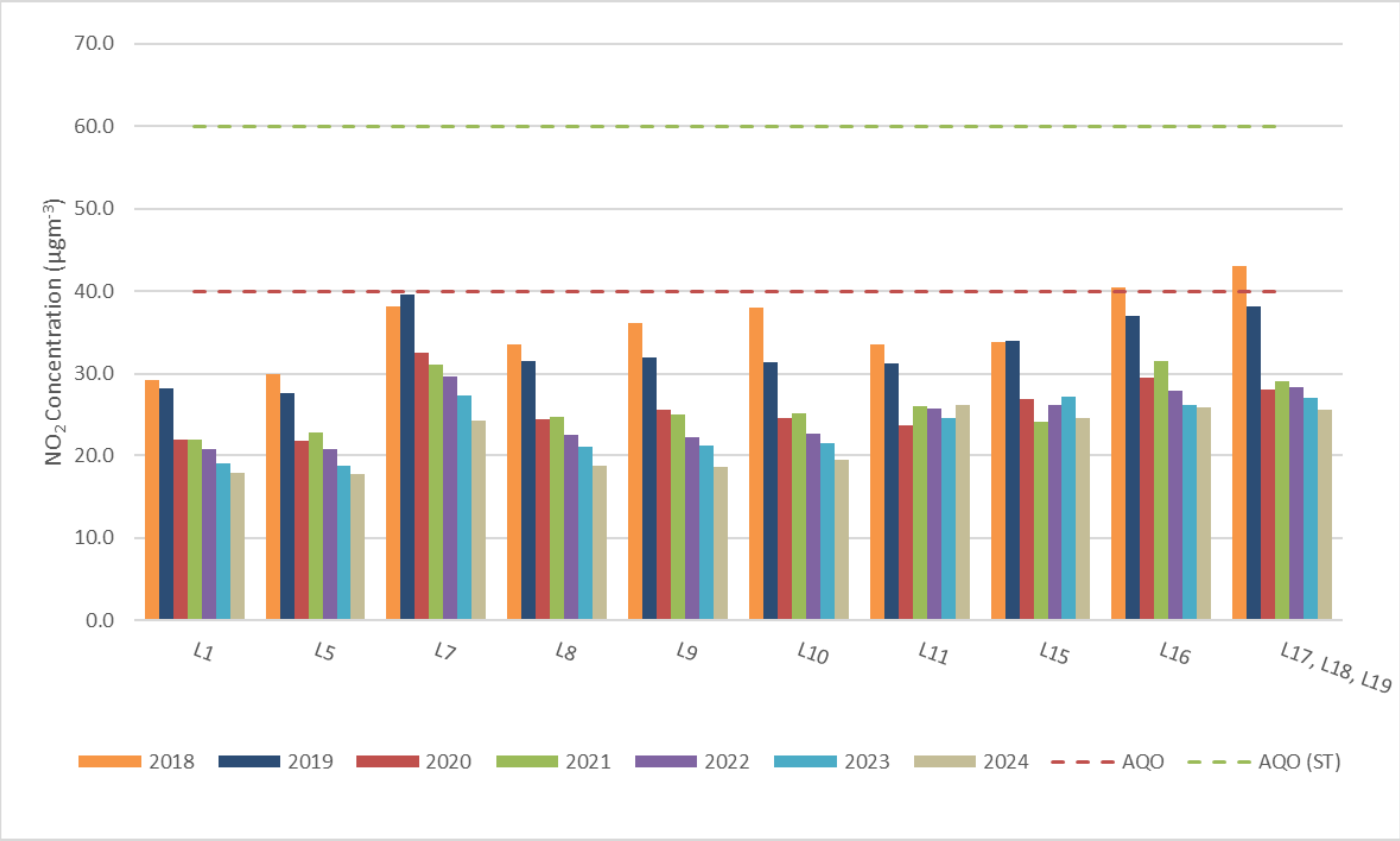


Figure A. 4 Trend in NO_2 concentration at roadside diffusion tube locations (2)

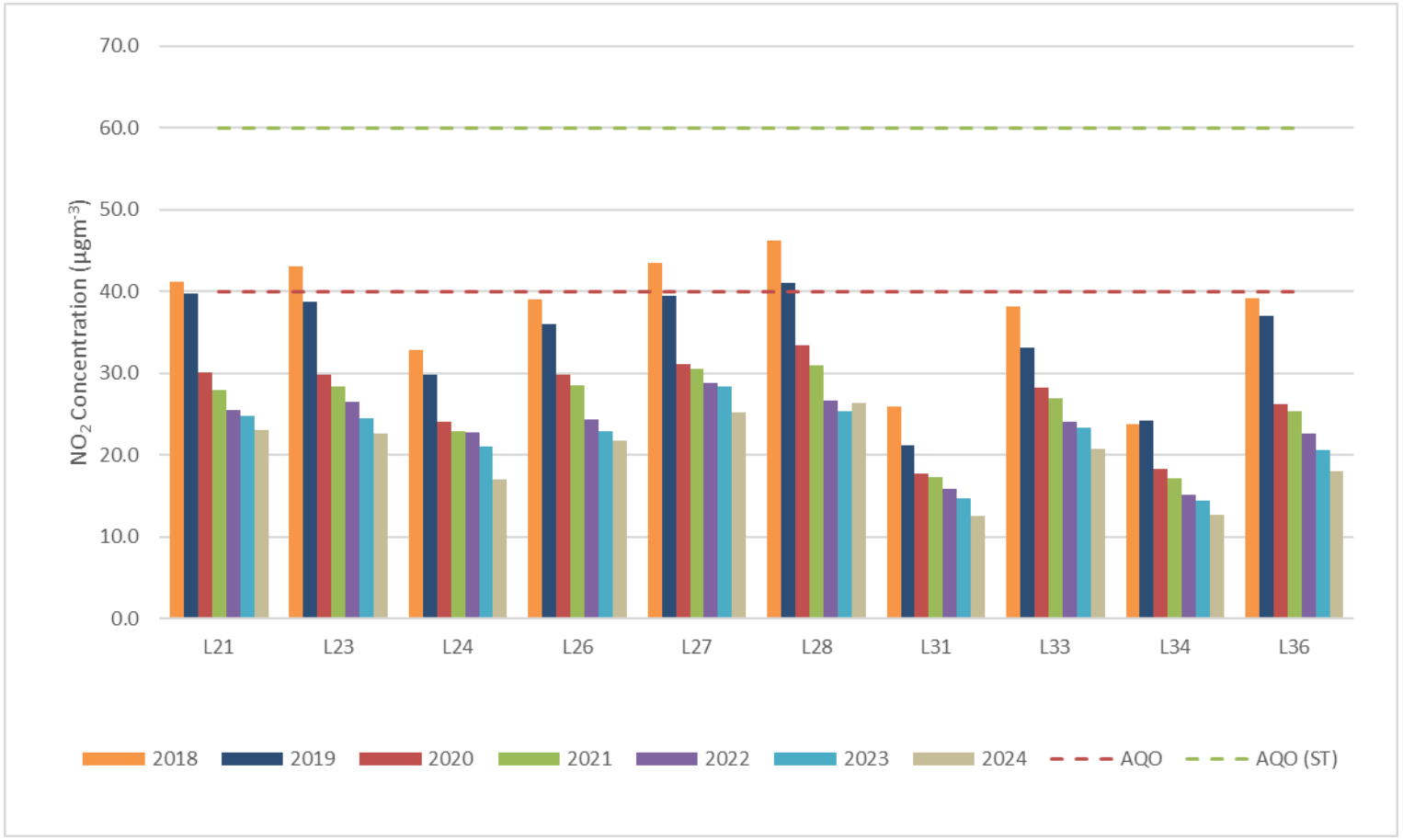


Figure A. 5 Trend in NO_2 concentration at roadside diffusion tube locations (3)

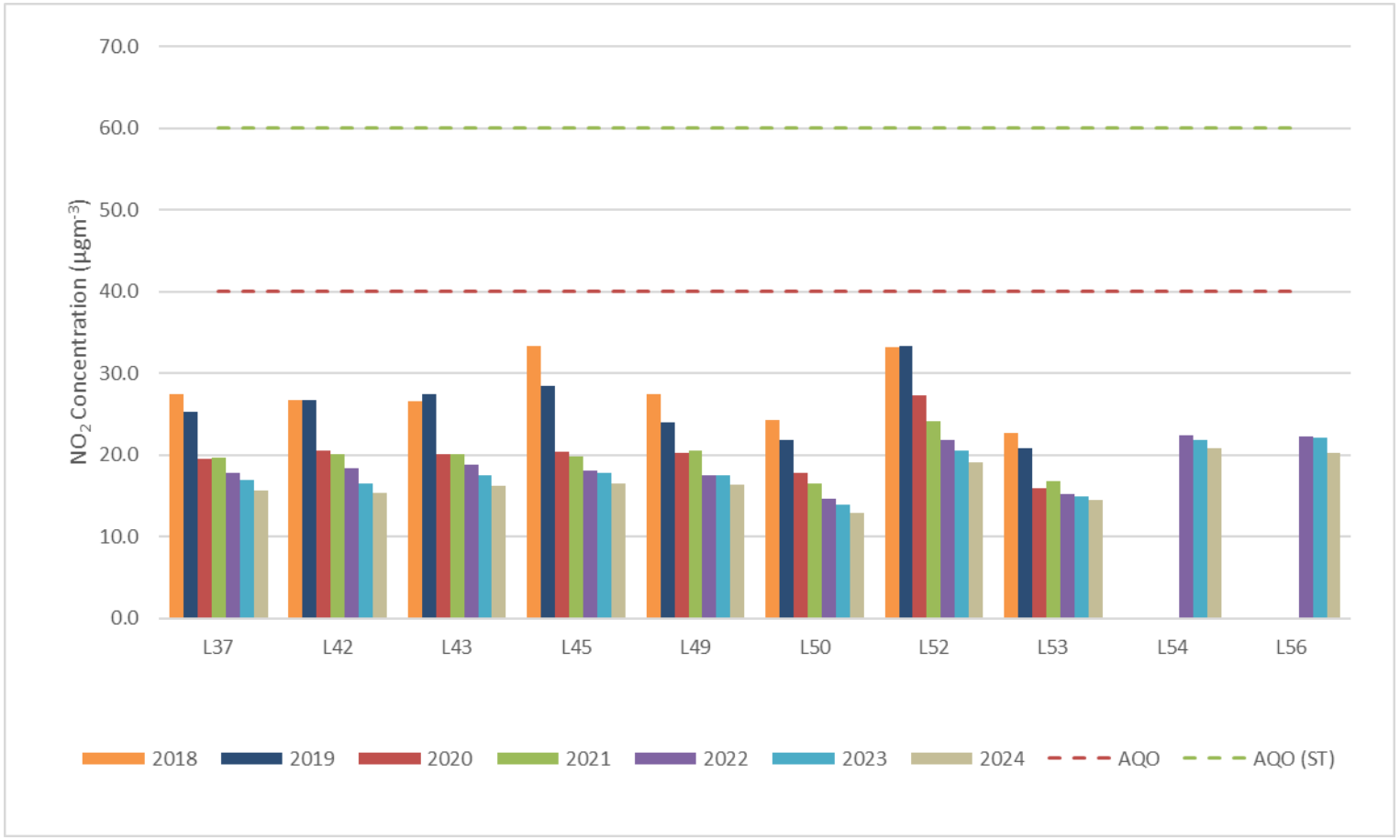


Figure A. 6 Trend in NO_2 concentration at roadside diffusion tube locations (4)

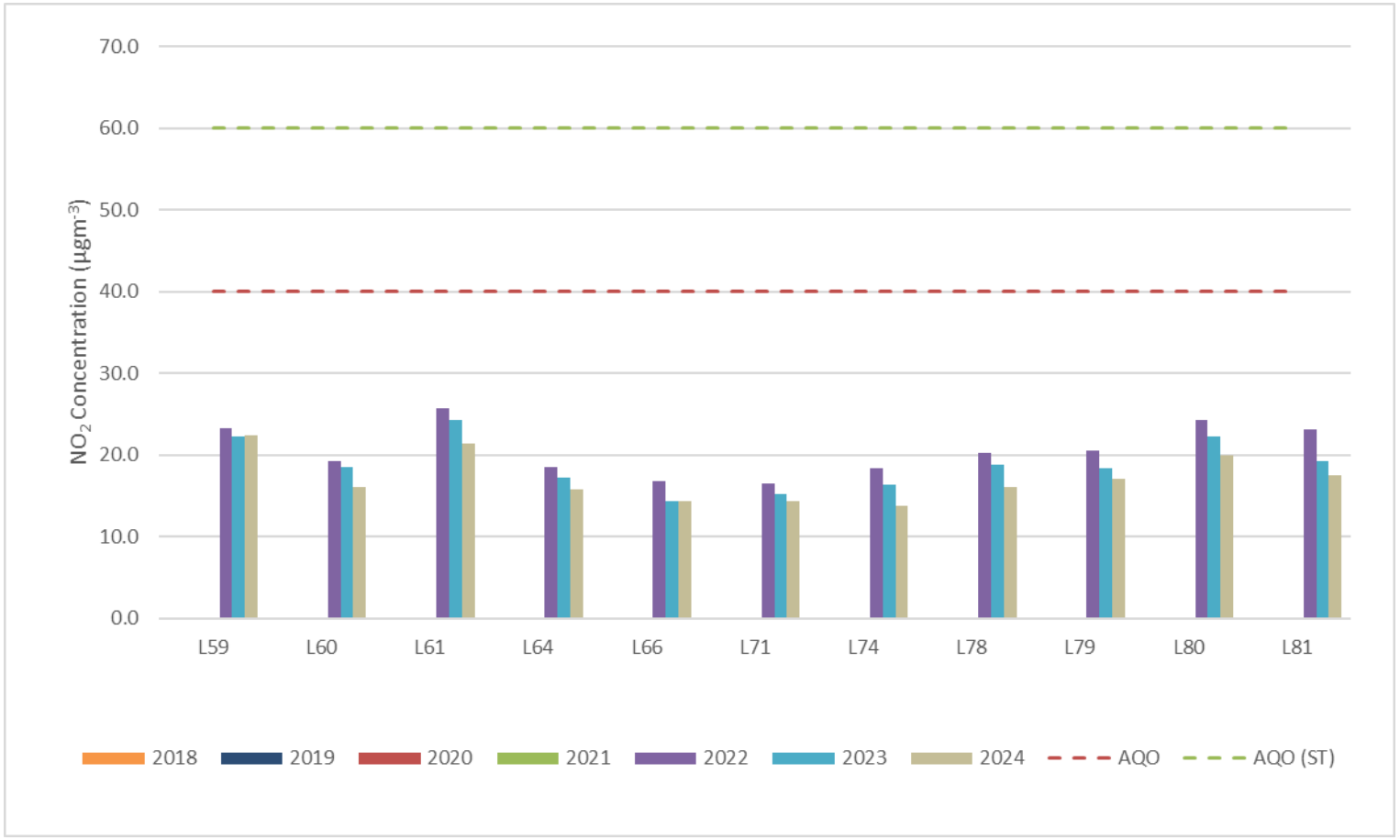


Figure A. 7 Trend in NO_2 concentration at roadside diffusion tube locations (5)

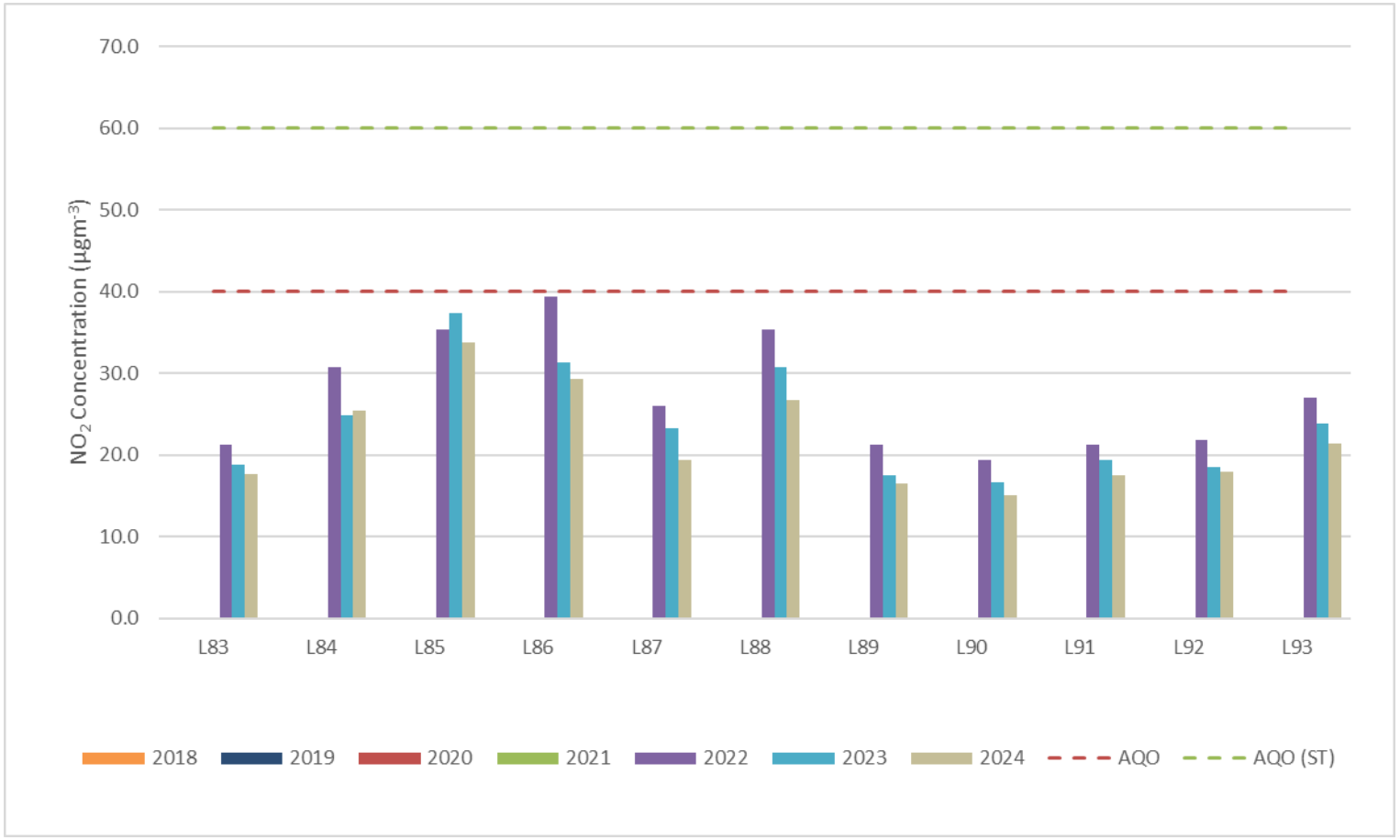


Figure A. 8 Trend in NO_2 concentration at roadside diffusion tube locations (6)

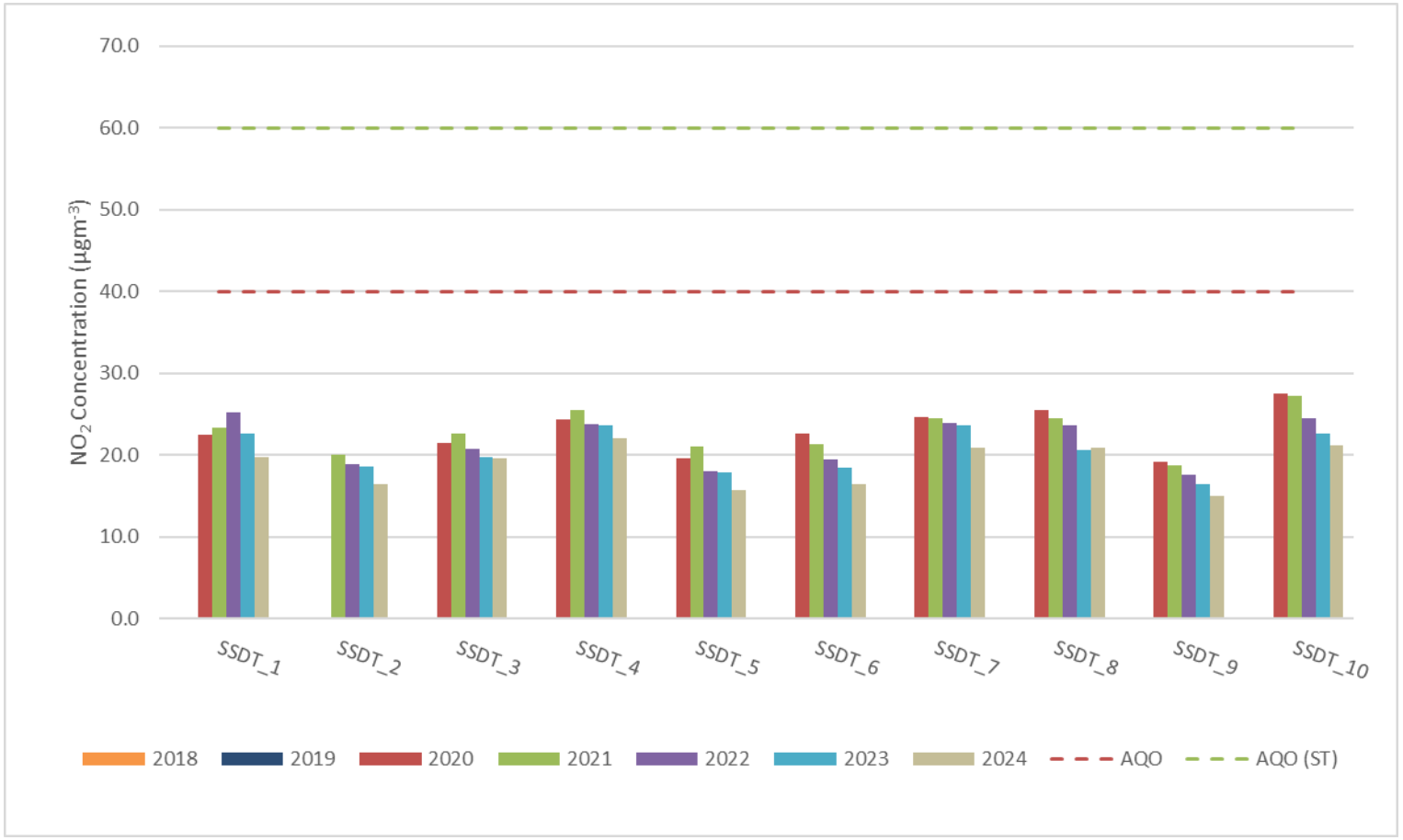


Figure A. 9 Trend in NO_2 concentration at roadside diffusion tube locations (7)

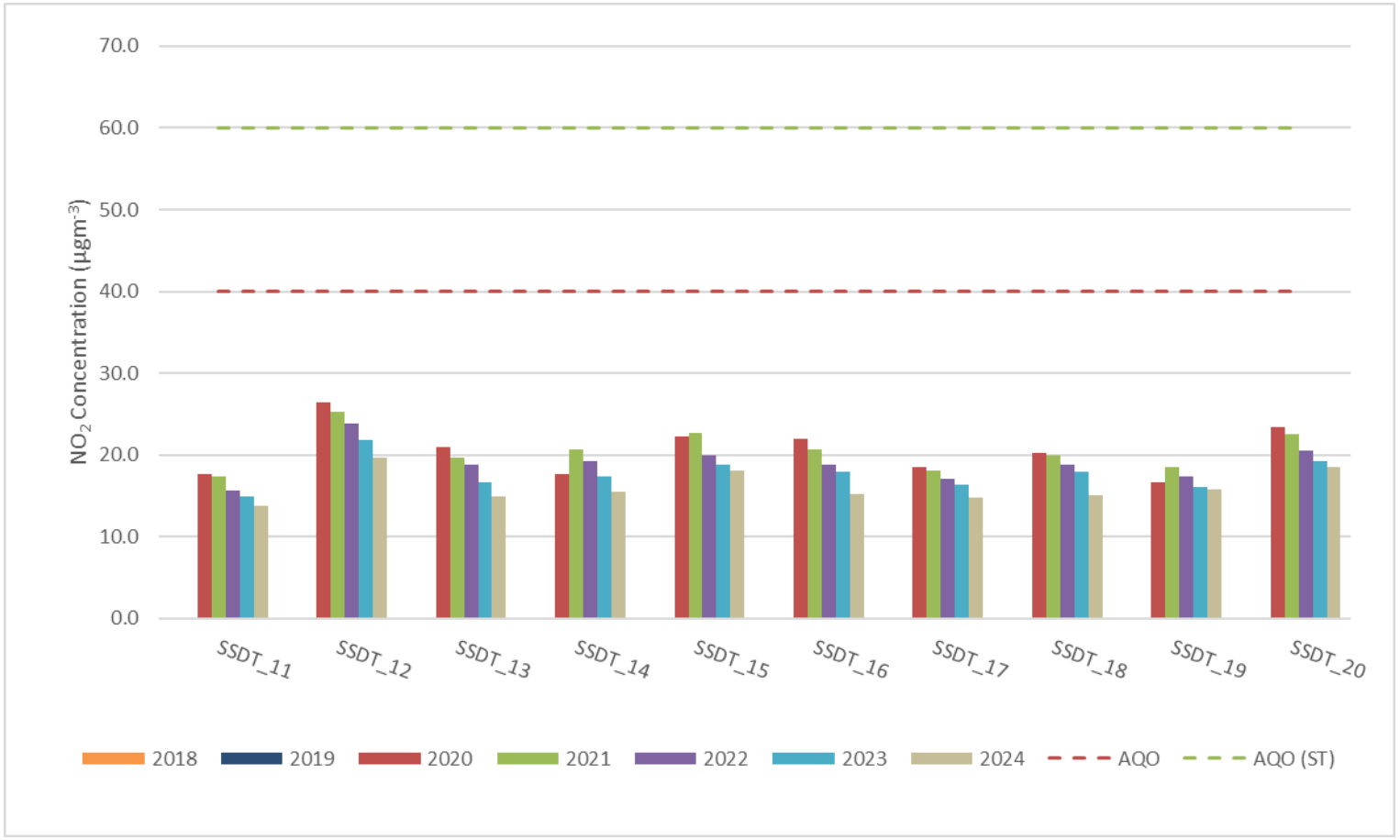


Figure A. 10 Trend in NO_2 concentration at roadside diffusion tube locations (8)

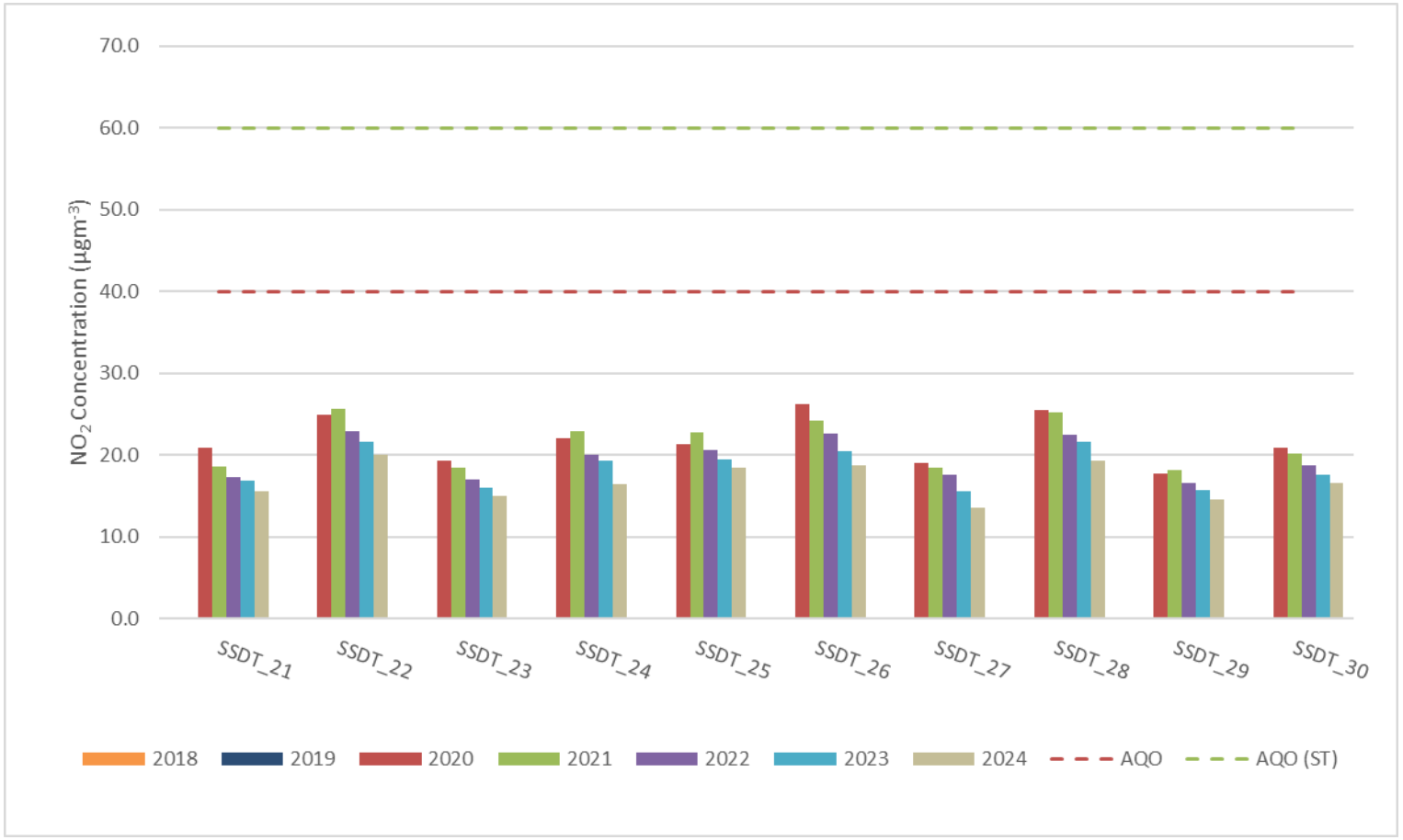


Figure A. 11 Trend in NO_2 concentration at roadside diffusion tube locations (9)

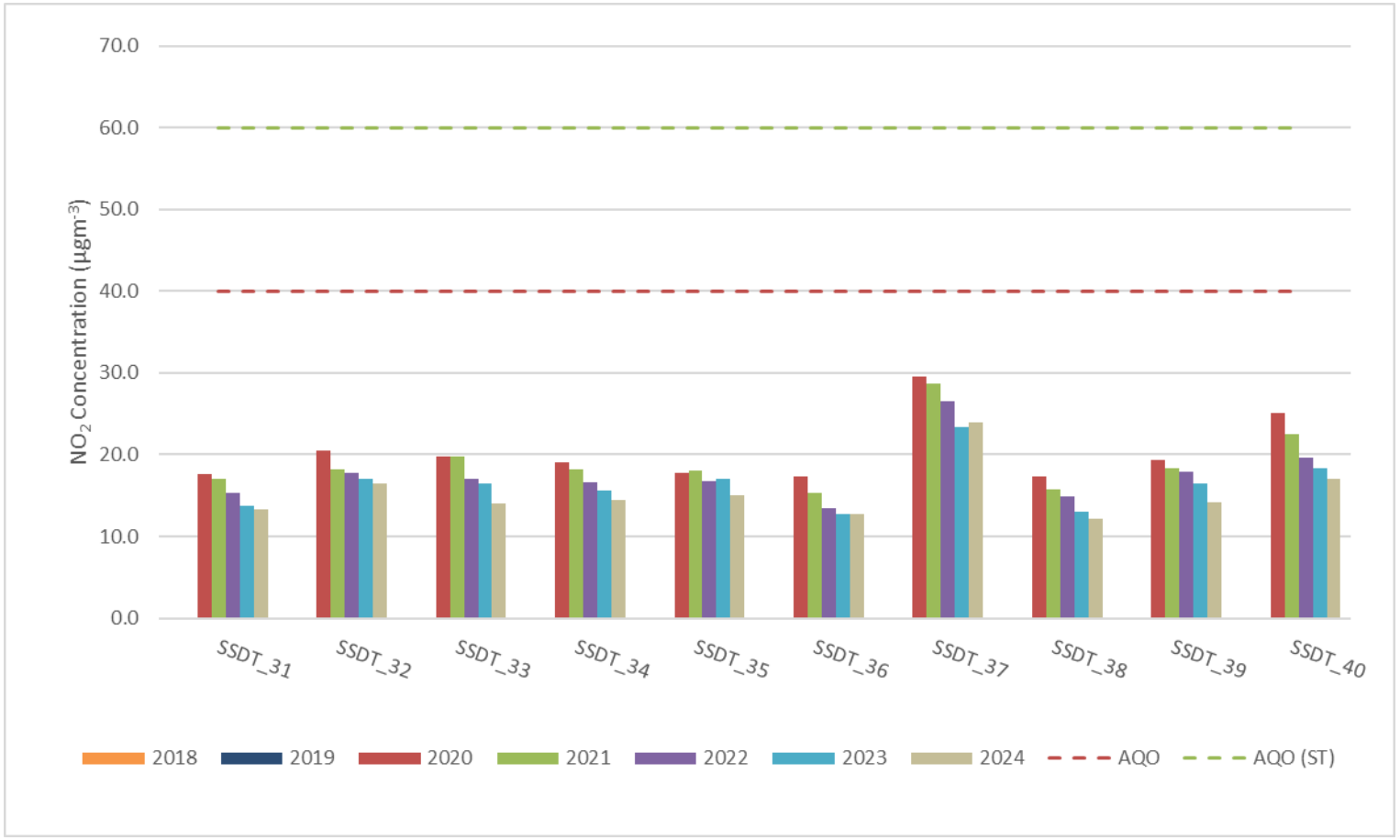


Figure A. 12 Trend in NO_2 concentration at roadside diffusion tube locations (10)

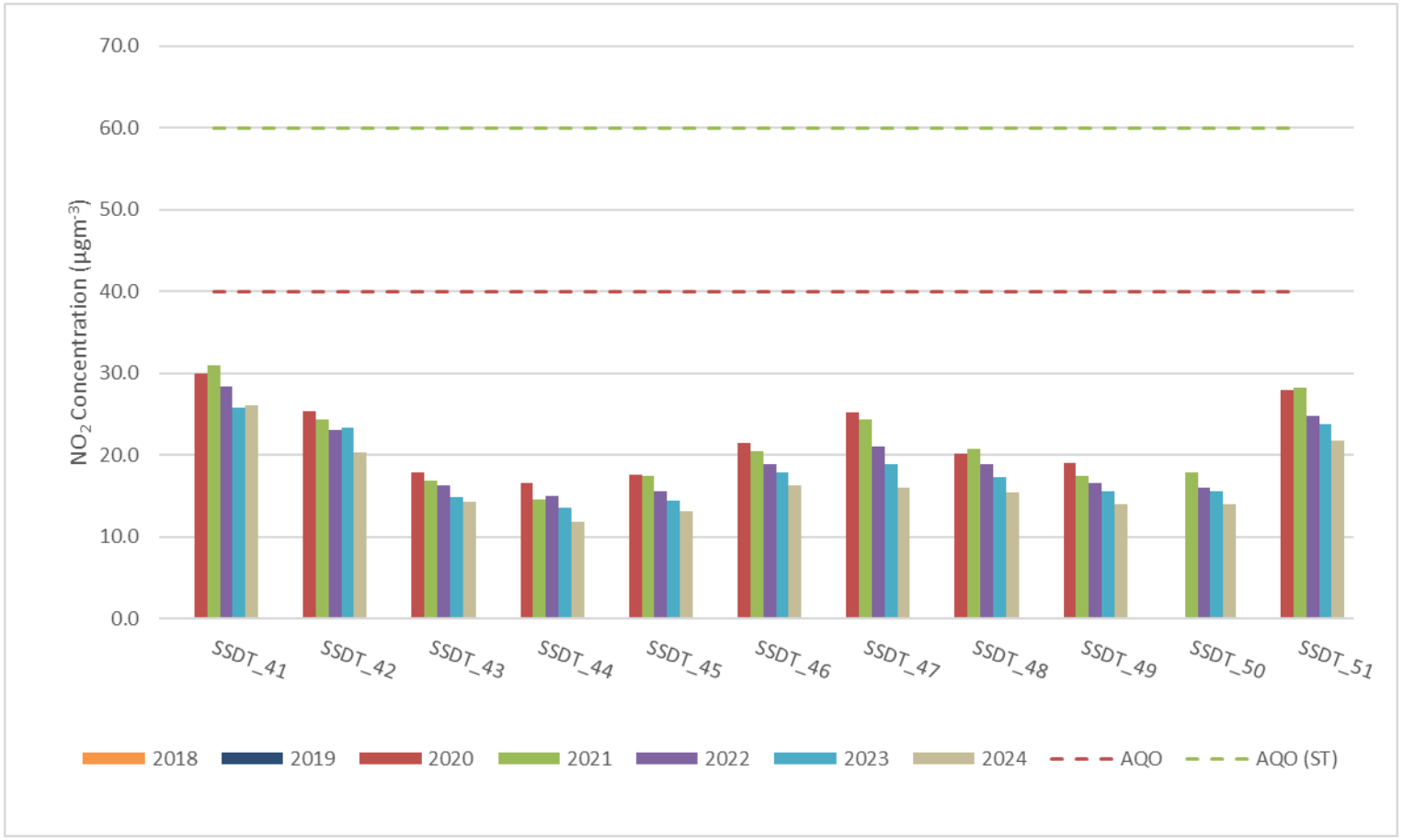


Figure A. 13 Trend in NO_2 concentration at urban background diffusion tube locations (1)

Figure A. 14 Trend in NO_2 concentration at urban background diffusion tube locations (2)

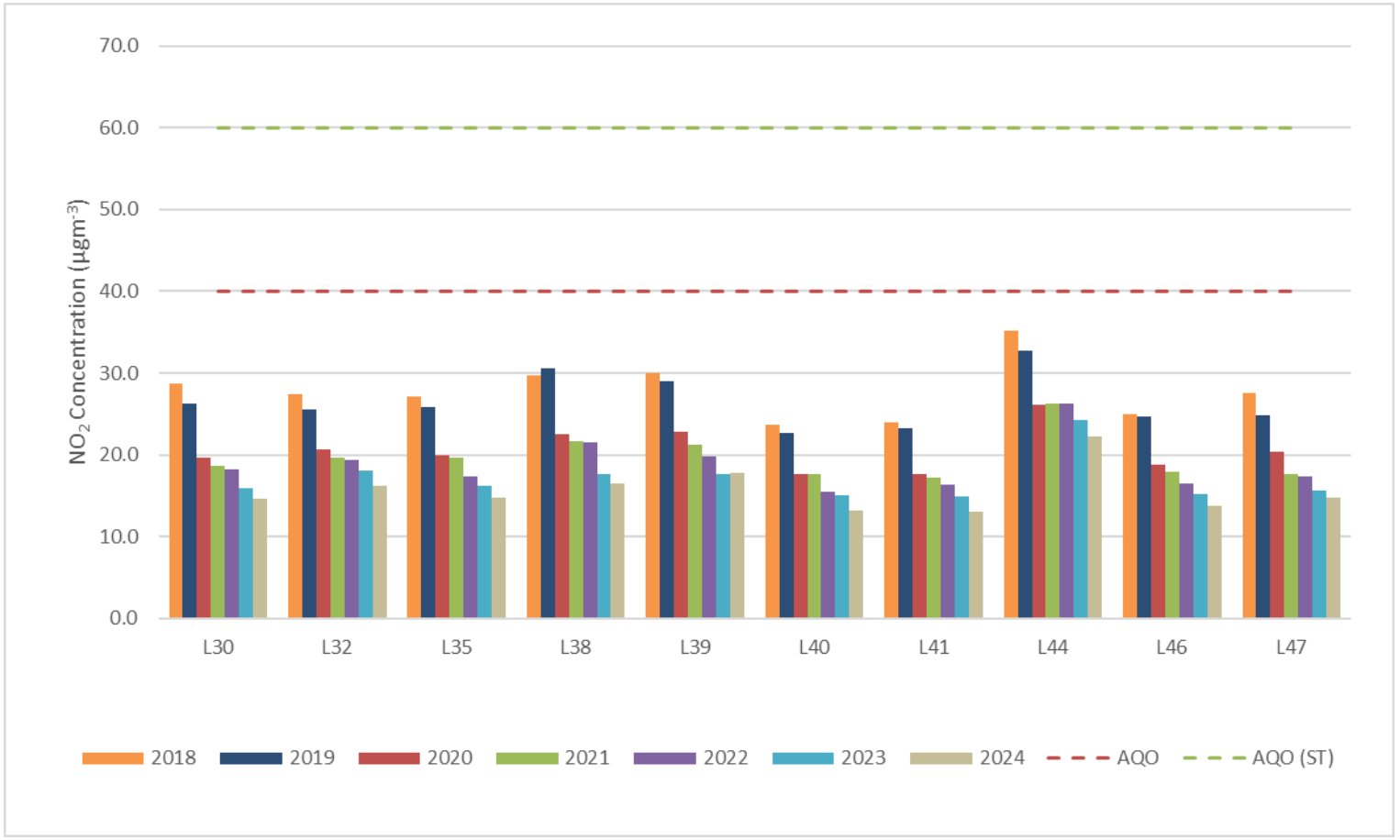


Figure A. 15 Trend in NO_2 concentration at urban background diffusion tube locations (3)

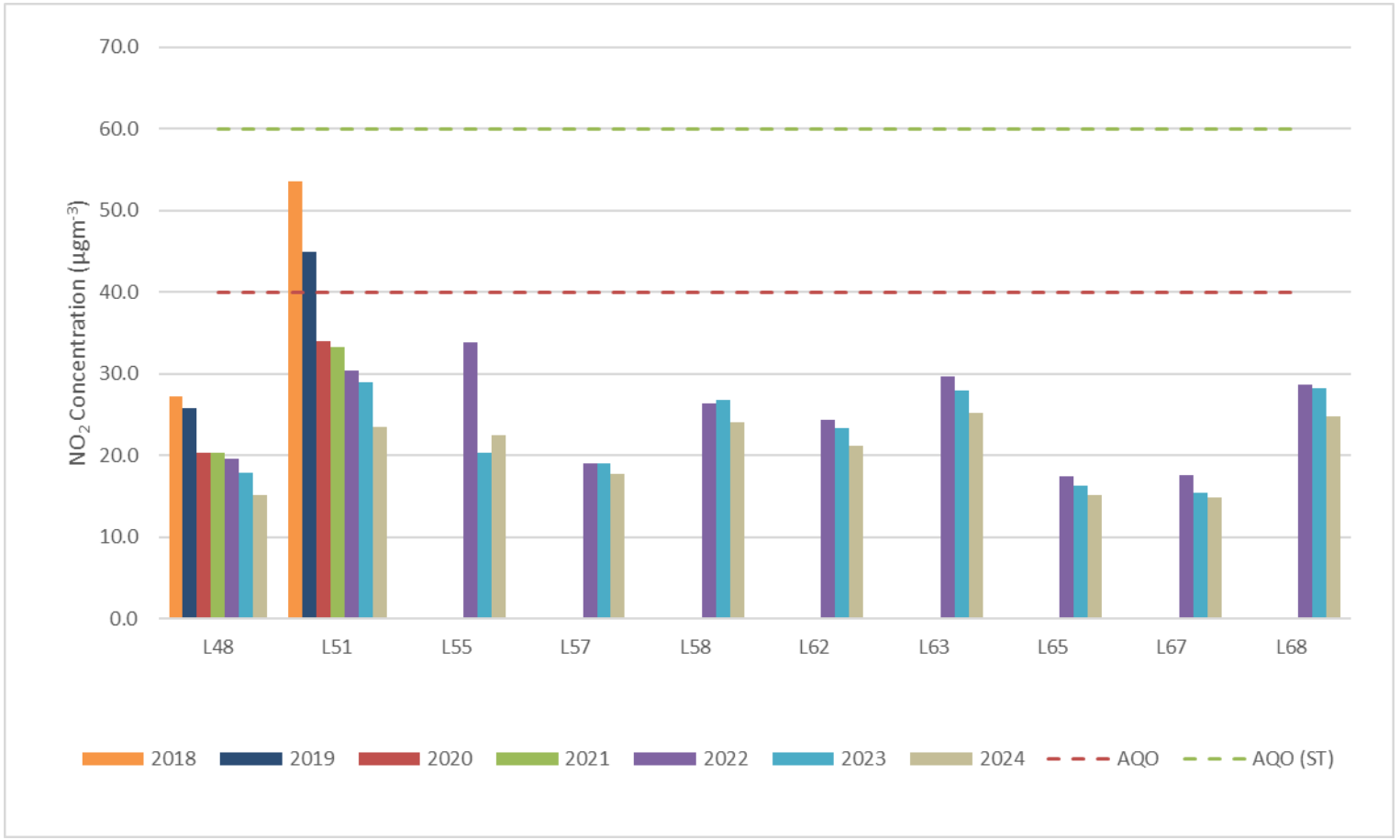
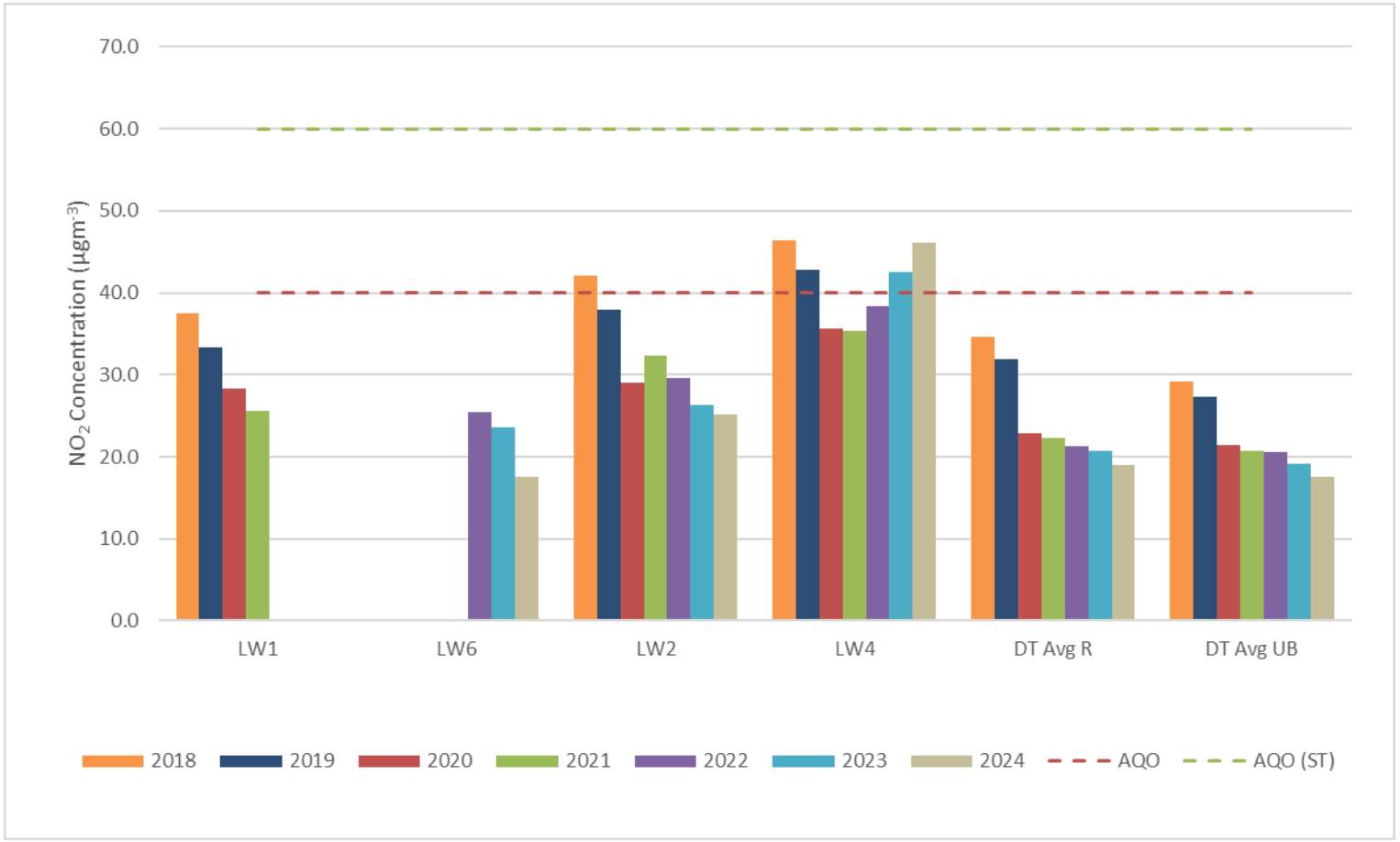


Figure A. 16 Trend in NO_2 concentration at urban background diffusion tube locations (4)

Figure A. 17 Trend in NO_2 concentration at automatic monitoring stations, roadside and urban background diffusion tube locations (averaged)



Appendix B Full Monthly Diffusion Tube Results for 2024

Table Q. NO_2 2024 Diffusion Tube Results (µg m^{-3})

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 (0.88)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
L1	536109	177580	26.3	21.0	16.9	13.7	23.5	17.4	20.7	18.8	21.8	26.0		18.0	20.4	17.9	-	
L2	537540	177439	24.5	19.9	20.1	14.0	18.8	13.0	14.4	11.9	17.6	22.9	27.9	16.5	18.4	16.2	-	
L3	536561	178471		23.4			19.6	15.8	17.0	16.4	20.5		30.7	15.3	19.8	18.3	-	
L4	536534	178926	20.2	22.6	19.6	14.1	19.2	15.4	16.6	15.4	20.6	22.6	30.7	21.3	19.9	17.5	-	
L5	539678	175050	26.8	19.0	19.2	14.2	22.5	16.1	19.5	15.9	20.6	22.7	26.6	18.0	20.1	17.7	-	
L6	540615	172337	23.8	22.9	20.9	16.4	18.7	15.6	18.5	17.8	19.5	20.0	27.9	17.8	20.0	17.6	-	
L7	536556	171810	27.5	28.5	29.0	23.3	29.8		26.3	23.5	26.4	30.6	37.3	20.7	27.5	24.2	-	
L8	536229	174032	23.7	24.1	23.2	18.6	21.0	17.6	16.3	16.5	22.8	22.7	28.5	19.9	21.2	18.7	-	
L9	537500	174925	24.6	22.8	22.0	16.0	23.0	17.5	18.8	16.8	23.1	22.5	29.8	17.2	21.2	18.6	-	
L10	538062	175085	30.5	22.2	23.2	19.3	22.4	18.0	17.6	14.9	21.7	26.0	29.4	19.3	22.0	19.4	-	
L11	538007	176517	32.3	31.8	32.5	28.2	30.9	25.7	29.8	25.2	31.5	35.2	35.2	19.6	29.8	26.2	-	
L12	537132	175353		17.9	19.4	10.4	14.1	10.8	11.7	10.5	15.6	17.2	29.6	12.0	15.4	13.5	-	
L13	535804	171567	25.6	19.2			15.9	13.7	14.6		16.1	21.7	26.7	16.0	18.8	16.6	-	
L14	538482	175792	22.2	24.7	21.6	17.0	16.8	14.2	17.1	17.1	17.0	19.7	28.3	18.4	19.5	17.2	-	
L15	538237	176101	30.8	31.2	29.6	25.4	28.0	25.4	29.4	28.4	29.3	28.5	30.9	19.1	28.0	24.6	-	
L16	537740	175930	30.1	27.0		22.5	37.1	23.8	29.2	24.0	34.2	33.6	37.5	25.8	29.5	26.0	-	
L17	536246	176934	33.0	30.8	29.9	24.4	30.7	30.6	29.5	27.9	31.3	30.5	34.3	25.8	-	-	-	Triplicate Site with L17, L18 and L19 - Annual data provided for L19 only
L18	536246	176934	32.6	31.9	29.8	24.8	29.9	29.0	28.3	30.2	29.0	29.2	36.5	26.6	-	-	-	Triplicate Site with L17, L18 and L19 - Annual data provided for L19 only
L19	536246	176934	26.7	29.1	28.3	21.4	30.7	28.8		30.1	31.6		36.0	25.5	29.5	26.0	-	Triplicate Site with L17, L18 and L19 - Annual data provided for L19 only

L20	535746	176969	28.5		22.9	19.5	23.7	20.4	19.7	19.5		26.6	30.5	20.8	23.2	20.4	-	
L21	536133	173341	27.3	25.3	26.8	24.3	25.1	24.8	24.7	23.7	27.2	26.3	34.5	25.0	26.2	23.1	-	
L22	538060	173816	23.6	18.9	17.3	12.7	14.5	12.4	12.9		14.3	18.8	24.7	20.6	17.3	15.2	-	
L23	537178	173365	32.8	27.4	26.5	22.5	25.8	23.1	24.3	22.8	24.3	27.4	30.2	22.0	25.8	22.7	-	
L24	538930	172713	31.8	16.5	20.5	18.1	21.4	14.1	17.6	17.1	18.1	23.3		13.7	19.3	17.0	-	
L26	536527	175935	27.7	28.7	26.9	20.0	24.5	21.6	23.3	22.1	23.5	25.9	32.5	21.1	24.8	21.8	-	
L27	539604	176090	33.1	32.1	27.3	22.3		27.5	29.8	26.8	28.1	30.4	41.4	16.6	28.7	25.2	-	
L28	540051	173769	34.9	33.6	27.1	28.8	29.5	27.3	29.1	25.8	30.4	31.8	38.5	22.3	29.9	26.3	-	
L29	538165	173406	26.6	19.5	18.3	13.1	16.4		24.8	13.4	15.0	21.5	26.7		19.5	17.2	-	
L30	535535	172679	20.1	16.2	15.4	13.8	16.3	12.1	13.2	11.8	17.6	21.0	27.2	15.3	16.7	14.7	-	
L31	536399	175150	13.5	16.4	17.3	10.2	14.3	10.3	11.1	9.3	12.8	18.0	24.2	14.4	14.3	12.6	-	
L32	536944	177665		20.1	18.8	13.4	18.6	14.5	16.5	15.0	17.7	23.1	28.6	16.5	18.4	16.2	-	
L33	537979	174792		25.8	25.4	21.2	22.2	20.5	19.0	19.9	21.9	26.5	32.1	25.9	23.7	20.8	-	
L34	535071	172346	19.8	17.2	15.3	11.2	12.1	9.2	10.7	10.9	13.9	17.2	22.4	13.7	14.5	12.7	-	
L35	535447	176897	23.7	20.8	18.0		14.3	12.3	13.3	12.5	15.0	17.4	24.6	12.5	16.8	14.8	-	
L36	536275	178405	25.9	22.0	20.3	14.7	20.2	17.5	18.9	16.4	20.1	22.2	27.7	21.0	20.6	18.1	-	
L37	536317	176883	24.6	15.6	18.2	12.6	17.2	13.9	15.1	13.7	18.2	21.6	26.6	16.9	17.8	15.7	-	
L38	536564	174937	25.1	22.2	21.7	12.5	16.7	14.9	14.2	15.6	16.8	22.1	26.2	16.9	18.7	16.5	-	
L39	536308	175721	20.0	21.8	21.7	14.7			15.6	14.4	20.5	22.7	29.5	20.6	20.2	17.7	-	
L40	536792	176432	18.3	15.9	15.2	10.9	14.7	10.7	12.3	10.9	15.5	19.3	22.3	14.2	15.0	13.2	-	
L41	537256	176353	22.8	17.7	15.9	10.7	14.7	11.6	12.9	11.6	14.7	11.9		17.7	14.7	13.0	-	
L42	537032	176534	23.8	17.9		12.7	17.7	13.8	15.3	14.0	16.5		23.5	19.2	17.4	15.3	-	
L43	536389	177144		22.2	17.6	13.6	16.6	13.2	17.1	15.8	19.2	19.1	27.2	21.0	18.4	16.2	-	
L44	536028	178107	28.8	30.1	24.7	17.4	25.5	20.5	20.9	22.4	25.0	31.2	31.7		25.3	22.2	-	
L45	537228	177284	24.6	21.5	18.6	12.8	19.0	14.5	15.7	15.1	18.3	20.4	27.3	17.7	18.8	16.5	-	
L46	539416	175315	18.3	19.1	15.4	12.4	14.6	11.1	14.2		13.1	18.4	20.4	15.6	15.7	13.8	-	
L47	536839	173211	22.6	20.1	18.5	13.9	14.9	12.5	13.5	11.6	17.2		24.0	15.6	16.7	14.7	-	
L48	537433	173965	26.3	21.6	20.0	12.3	14.8			12.9	15.0		21.8	10.7	17.3	15.2	-	
L49	538358	175324	25.7	20.8	19.9	17.7	16.7	12.6	18.3	12.6	19.7	18.5		21.5	18.5	16.3	-	
L50	537836	173400		14.8	13.8		12.3		12.3	10.2	12.4	17.1	23.5	15.3	14.6	12.9	-	
L51	538803	173683	28.3	26.7	27.9	23.1	27.6	26.1	26.4	21.1	29.8	26.8	32.5	23.6	26.7	23.5	-	
L52	538285	171877	21.6	23.2	20.8	19.2	18.6	16.4	20.8	18.8	20.0	21.9	27.6	31.6	21.7	19.1	-	
L53	539319	172362	20.9	17.8	15.2	10.3	14.4	11.8	15.1	13.5	17.3	18.7	27.9	15.3	16.5	14.5	-	
L54	540479	172647		23.9	25.1	22.2			20.1	17.1	22.8		32.9	20.9	23.1	20.8	-	
L55	537075	176972	30.8	26.4	25.9				25.6	23.0	30.1	28.6	32.0		27.8	22.7	-	
L56	536024	178611	29.6	26.3	22.7	15.8	22.3	19.2	20.8	18.0	20.2	25.5	31.6	25.3	23.1	20.3	-	
L57	539671	176141	27.9	22.8	20.8	16.0	17.7	15.5	17.3	15.3	18.7	21.2	28.0	21.3	20.2	17.8	-	
L58	539442	175762		29.7	27.6	23.0	25.3	21.5	25.2	21.9		31.9	41.0	25.7	27.3	24.0	-	

L59	537989	175781	29.6	26.8	27.3	23.5	25.7		23.2	20.6	24.9	25.5	32.7	19.6	25.4	22.3	-	
L60	536660	178717	20.4	20.1	20.8	13.1	16.1	13.7	16.7	15.6	15.1		30.2	18.9	18.2	16.0	-	
L61	537907	174533	33.9	27.2	24.6	21.2	24.7	20.4	22.9	15.1	22.8	25.8	28.5	24.1	24.3	21.3	-	
L62	536144	176854	26.7	24.5	24.2	21.4	26.1	23.7	22.3	19.9	25.1	23.8	27.1	23.4	24.0	21.1	-	
L63	537092	173415	37.8	32.2	29.8	23.6	25.4	24.1	25.5	23.6	30.6	30.0	37.1	24.3	28.6	25.2	-	
L64	536352	177541	23.4	22.9	20.0	11.9	17.1	13.2	15.5	13.8	13.9	19.5	25.9	17.4	17.9	15.7	-	
L65	537319	176485	23.6	19.3	17.0	13.2	17.7	13.1	13.6	12.5	17.0	20.3	24.2	15.7	17.3	15.2	-	
L66	536106	173458	23.8	16.2	16.5	11.6	14.7			11.0			24.1	15.7	16.7	14.1	-	
L67	535644	176484	24.8	18.7	16.8	11.7	15.0	11.8	12.4		15.2	18.0	23.6	17.6	16.9	14.8	-	
L68	536455	177350	28.0	32.4	29.9	21.3	29.0	24.6	28.2	27.6	27.3	36.3	36.3	17.6	28.2	24.8	-	
L69	536072	175087	17.2	16.6	15.4		13.2	10.3		10.5	13.1	16.5	22.8	14.6	15.0	13.2	-	
L70	537029	174246	26.8	17.7	15.2	10.4	12.9	11.3	12.0	10.7	15.5	19.3	25.6	16.3	16.1	14.2	-	
L71	539355	175293	23.2	18.1	17.3	9.9	13.7	11.3	13.5	12.7	15.5	18.7	24.4	17.9	16.3	14.4	-	
L72	538738	174030	23.4	17.0	16.5	11.1	12.1	9.8	13.1	10.3	27.9	15.9	24.9	13.7	16.3	14.4	-	
L73	537258	176212	27.2	28.8	28.9	27.9	37.2	34.2	29.8	28.3	35.1	36.1	42.4	26.3	31.8	28.0	-	
L74	538503	173580	21.7	19.0	16.4	13.2	13.2	11.5	13.9	13.2	14.3	16.4	24.5	10.4	15.6	13.8	-	
L75	536392	174592	26.0	20.5	21.5	14.9	15.9	12.7	13.5	14.7	15.8	20.9	26.5	12.1	17.9	15.8	-	
L76	539519	172846	31.7	23.9	25.1	21.5	25.2	19.7	22.8	17.7	24.3	26.7	30.6	18.4	24.0	21.1	-	
L77	538470	173427	21.6		17.7	12.2	14.2	10.2	13.6	12.9	15.6	18.5	23.0	18.9	16.2	14.3	-	
L78	538958	173479	20.7	21.2	19.2	14.9	20.8	14.0	17.8	14.9	18.2	20.3	26.8	11.4	18.3	16.1	-	
L79	540204	173780		20.6	20.1	15.7	18.3	13.8	17.3	14.6	21.8	20.9	30.6	20.3	19.5	17.1	-	
L80	535505	176274	30.7	22.0	25.3	15.4	24.5	19.3		17.9		23.8	28.7	19.6	22.7	20.0	-	
L81	539815	175122	24.9	23.0	23.3	13.1	18.7	15.5	19.4	16.0	20.1	23.0		22.6	20.0	17.6	-	
L82	536791	172863	22.2		24.6		21.8		18.6	16.5	20.4		30.2	18.6	21.6	18.2	-	
L83	537967	172366	27.5	18.0	21.0	16.0	17.7	14.3	18.7	15.7	21.4	23.4	27.4	18.9	20.0	17.6	-	
L84	536500	172023	27.7	31.8	31.1	25.3	28.4	27.1	28.6	22.5	39.6	32.6	31.6	19.4	28.8	25.3	-	
L85	536528	171882	38.5	42.0		31.4			40.3	38.3	31.3	41.9	45.8	35.9	38.4	33.8	-	
L86	536551	171878	29.9	33.3	31.8	32.2	39.0	38.0	35.5	31.9		37.9	38.5	19.0	33.4	29.4	-	
L87	534983	171996	20.6	25.3	26.0	19.5	25.2	20.4	18.5	17.8	22.0	22.6	29.7	15.8	22.0	19.3	-	
L88	536309	171594	32.1	21.4	31.8	28.3	33.7	31.0	29.5	30.1	30.4	33.0	36.6	25.8	30.3	26.7	-	
L89	536208	171508	25.6	16.8	17.0		18.3	15.6	14.5	14.2	20.4	18.0	27.4	17.7	18.7	16.4	-	
L90	535538	173700	22.8	17.0	16.4	12.5	15.4	12.5	13.3	13.2	18.1	19.9	28.3	15.7	17.1	15.0	-	
L91	538924	176411	25.6	19.4	21.5	13.5		15.5	19.3	16.6	15.4	21.8	28.8	21.1	19.9	17.5	-	
L92	535775	177400	28.0	23.2	19.6	15.6	19.1	14.9	16.4	15.4	20.5	23.4	29.1	18.9	20.3	17.9	-	
L93	535756	177986	26.1	24.7	23.9	18.9		20.3	21.0	22.7	25.4	30.8	31.7	22.0	24.3	21.4	-	
L94	538318	175116	34.3	33.8	35.8	32.6			36.1	21.6	29.8	29.5	37.0	29.5	32.0	28.2	-	
L95	538371	175562	74.2	76.0	82.4	82.8		72.7	70.7	36.5	42.7	37.2	41.9	32.4	59.0	**51.9**	**49.2**	
L96	538233	175283	42.8	42.3	43.6	35.3		34.8	29.9	26.3	29.8	29.5	36.7		35.1	30.9	-	

L97	538144	175411										39.1	44.5	37.3	40.3	28.8	-	
L98	538129	175627											40.8	32.5	36.7	32.3	-	
L99	538464	175395											14.7	26.2	20.5	18.0	-	
L100	537144	177442						12.3	15.4	13.8	15.4	22.9		16.9	16.1	15.7	-	
SSDT_1	536263	178099	28.4	26.3	24.6	17.5	21.4	20.1	19.7	17.5	22.1	23.5	31.2	18.2	22.5	19.8	-	
SSDT_2	537250	176593	27.7		19.6	14.1	18.0				19.7	20.9	28.5	16.9	20.7	16.6	-	
SSDT_3	537534	176469	26.5	25.8	21.1	17.7	21.8	16.2	19.0	16.9	20.9	24.1	33.6	23.5	22.2	19.6	-	
SSDT_4	538982	176645	27.2	23.6	25.1	19.2	25.6	20.6	26.1	21.9	26.1	25.1	36.0		25.1	22.1	-	
SSDT_5	535947	176287	19.2	20.3	17.6	15.2	17.2	12.9	15.9	14.3	17.8	21.2	29.8	14.1	18.0	15.8	-	
SSDT_6	536197	176514	21.2		18.0	15.3	19.7	15.1	15.9	15.1	20.4	20.8	28.8	16.0	18.7	16.5	-	
SSDT_7	539761	176431	33.7	29.0	24.1	20.8	20.9	20.0	22.1	18.8	21.8	23.8	28.5	21.5	23.7	20.9	-	
SSDT_8	538795	175291	22.2	25.0	24.9	20.2	22.5	20.5		21.5	22.5	28.9	31.3	22.4	23.8	20.9	-	
SSDT_9	538926	175030	24.7	17.0	18.9	12.6	14.8		13.2	12.6	16.8	23.3		16.1	17.0	15.0	-	
SSDT_10	538367	174857	29.2	27.3	22.9	21.5	23.2	22.6	21.8	21.8	26.5	26.2	30.8	14.9	24.1	21.2	-	
SSDT_11	540200	174781	24.1	14.8	15.9	11.7	13.4		13.2	9.8	13.6	18.0	23.9	14.6	15.7	13.8	-	
SSDT_12	539871	174720	26.4	23.9	24.9	20.0	23.2	16.3	20.6	16.9	22.5	26.2		25.8	22.4	19.7	-	
SSDT_13	539418	174543	26.0	21.9	17.4	12.6	16.1	12.1	16.0	12.3	7.4	20.6	26.5	15.3	17.0	15.0	-	
SSDT_14	539063	174543	21.5	19.0	18.7	11.8	17.2	13.5	13.7	11.8	18.3	21.3	25.2	18.4	17.5	15.4	-	
SSDT_15	538562	174494	26.4	20.5	20.5	15.6	21.0		16.1	15.9	20.8	22.6	32.3	13.7	20.5	18.0	-	
SSDT_16	536975	174537	20.2	21.4	19.9	15.0		14.5	14.3	12.9	18.2		23.7	13.4	17.4	15.3	-	
SSDT_17	536666	174206	21.4	16.9	18.6	13.3	15.0	12.0	12.2	12.5	16.7	19.8	27.4	16.0	16.8	14.8	-	
SSDT_18	538313	174269	19.9	18.9	19.9	13.7	15.3	14.1	14.5	13.4	17.9	20.1	24.0	14.1	17.2	15.1	-	
SSDT_19	538589	174189	23.1	18.0	17.9	13.0	16.0	13.7		10.3	16.3	21.3	28.9	19.5	18.0	15.8	-	
SSDT_20	539498	172969	26.8	21.2	21.0	15.5	22.4	17.4	18.2	17.6	22.2	22.6	30.4	17.0	21.0	18.5	-	
SSDT_21	539892	174174	22.1	19.4	16.7	14.3	16.3	11.0	13.7	11.5	17.1	30.5	23.3	16.0	17.7	15.5	-	
SSDT_22	540014	173979	29.3	24.6	27.8	20.0	23.3	16.9	21.1	18.4	23.6	20.8	30.1	17.4	22.8	20.0	-	
SSDT_23	540119	174329	23.9	18.4	18.4	11.6	15.1	11.6	14.7	12.9	15.8	19.8	24.6	18.6	17.1	15.1	-	
SSDT_24	540504	173977	27.5	19.3	18.7	16.0	19.2	14.4		15.8	20.1	19.5	26.8	8.6	18.7	16.5	-	
SSDT_25	539559	173929	29.0	22.1	21.1	17.5	17.2	15.9	18.5	15.2	21.9	23.2	31.6	18.0	20.9	18.4	-	
SSDT_26	539352	173783	30.4	25.3	22.9	18.4	20.0	16.4	20.7	15.1	21.8	23.3		20.7	21.4	18.8	-	
SSDT_27	536753	173603	24.8	18.6	16.7	12.1	12.5	11.7	12.0	12.0	16.7	19.4		12.9	15.4	13.6	-	
SSDT_28	538723	173345	26.3	25.0	19.0	17.0	24.3	10.5	19.9	20.1	25.2	25.4	31.0	20.2	22.0	19.4	-	
SSDT_29	541019	173231	23.9	18.5	17.6	13.7	13.4	10.3	13.3	12.4	14.0	16.6	26.0	18.9	16.5	14.6	-	
SSDT_30	537530	173095	26.9	21.3	18.6	16.2	16.4	14.0	16.8	15.0	17.7	19.9	26.3	16.4	18.8	16.5	-	
SSDT_31	534939	172586	23.9	16.9	17.8	10.0	11.9	9.9	11.2	10.4	14.1	15.5	23.4	16.3	15.1	13.3	-	
SSDT_32	536217	172563	22.4	20.6	16.0	11.3	15.1	13.9	14.6	12.6	16.6	20.4	24.3	37.4	18.8	16.5	-	
SSDT_33	537436	172596	20.5	17.2	15.3	11.1	15.6	11.6	15.6	12.9	16.2	18.5	24.0	12.7	15.9	14.0	-	
SSDT_34	538471	172660	22.6	18.4	17.4	13.6	14.6	10.9	14.1	12.1	14.2	17.5	25.7		16.5	14.5	-	

SSDT_35	539254	172658	21.2	19.4	17.4	14.3	14.1	12.7	15.3	14.7	16.9	19.8	22.9	16.3	17.1	15.0	-	
SSDT_36	540601	172744	19.3	14.7	14.2	8.8	10.5	8.9	10.4	9.8	13.0	15.6		34.4	14.5	12.8	-	
SSDT_37	536618	172405	32.9	28.6	24.8		37.6	20.7	22.8	18.9	27.3	28.2	36.0	21.7	27.2	24.0	-	
SSDT_38	535533	172340	16.8	16.2	14.9	11.5	12.0	10.4	10.7	10.7	14.8		20.7	12.8	13.8	12.1	-	
SSDT_39	534309	172044	18.4	14.9	16.8	11.7	16.0	12.0			14.1	18.6	24.0	13.9	16.0	14.1	-	
SSDT_40	535924	172207		22.5			20.0	15.7	15.5	14.3	17.6	18.5	28.5		19.1	17.3	-	
SSDT_41	536598	171766	30.0	29.3	27.9	22.9	25.5	23.9	43.7	22.2	39.3	28.4	38.4	23.2	29.6	26.0	-	
SSDT_42	538788	171517			23.2	19.2	23.1	18.4	23.1	19.7	23.5	27.5	30.1	22.8	23.0	20.3	-	
SSDT_43	539170	170869	17.5	18.4	16.5	11.9	14.5	12.2	15.1	11.7	16.6	19.3	24.8	16.8	16.3	14.3	-	
SSDT_44	539374	171246			14.0		10.1	8.8	11.5	10.1	13.9	15.1	22.3	15.3	13.5	11.8	-	
SSDT_45	539492	171567	21.7	17.4	14.9	11.2	13.2	10.0	12.3	11.5	14.6	15.0	21.2	15.6	14.9	13.1	-	
SSDT_46	539732	172202	25.0	22.1	21.1	14.1	17.6	13.7	14.2	15.6	18.5	19.9	27.5	13.8	18.6	16.3	-	
SSDT_47	540249	171633		20.4	18.7	16.7	17.8	15.2	16.8	13.0	14.3	20.0	28.5	18.2	18.1	16.0	-	
SSDT_48	540331	172103	23.5	16.0	18.0	13.0	16.3	12.0	14.3	13.4	18.3	20.8	26.2	18.9	17.6	15.4	-	
SSDT_49	537320	175801		17.1	18.6	11.1	13.9	11.1	13.6	13.2	15.7	18.6	26.1	16.0	15.9	14.0	-	
SSDT_50	537156	175867			19.9	11.1	14.8				15.1	20.0	25.4	13.0	17.0	14.2	-	
SSDT_51	535908	175946	28.0	28.6	26.3	20.4	22.5	22.2	22.7	22.3	22.8	28.0	32.2	21.0	24.8	21.8	-	

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

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

☐ **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 Lewisham confirm that all 2024 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**.

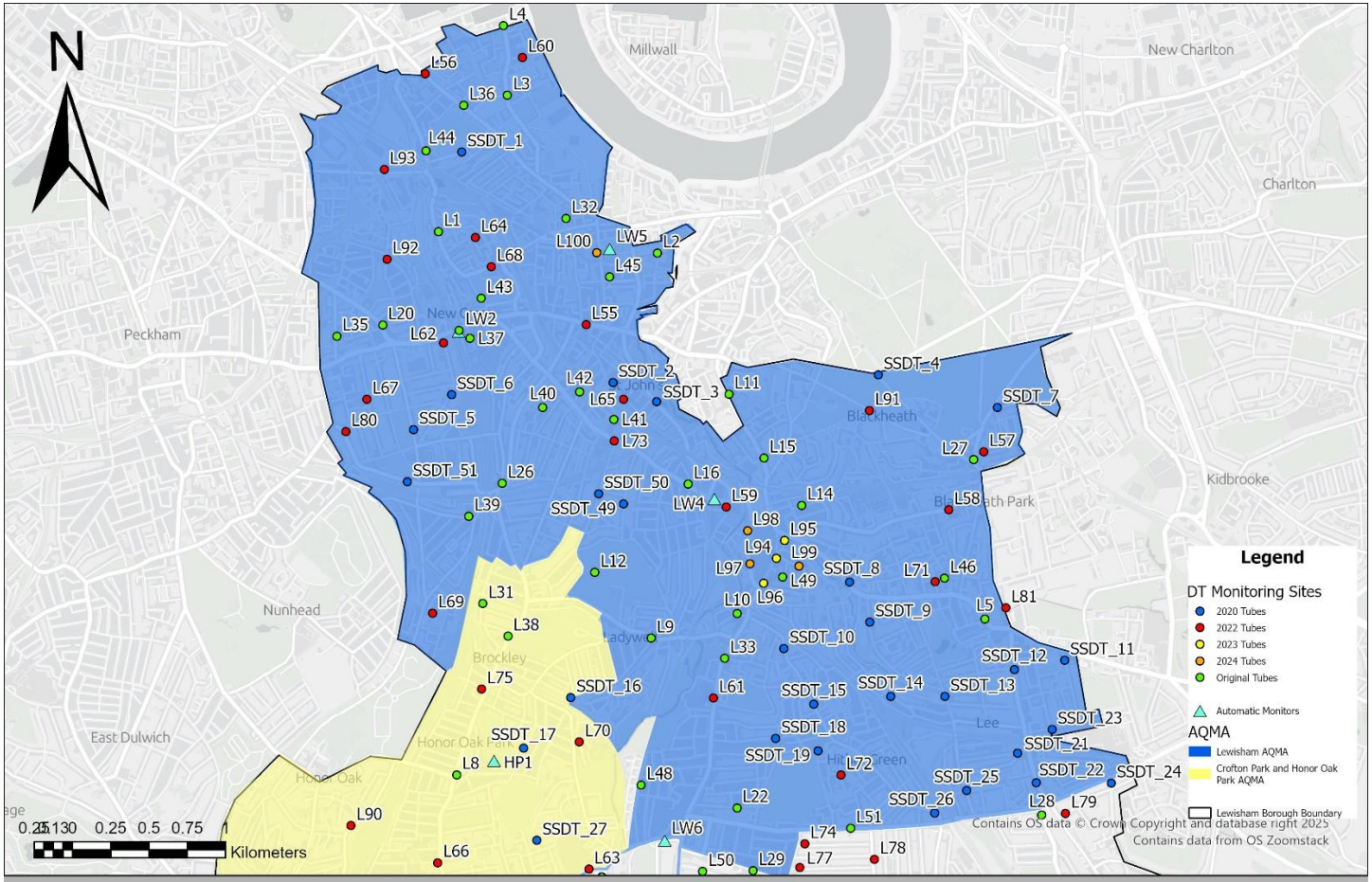
NO_2 annual means exceeding 60µg m^{-3}, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**.

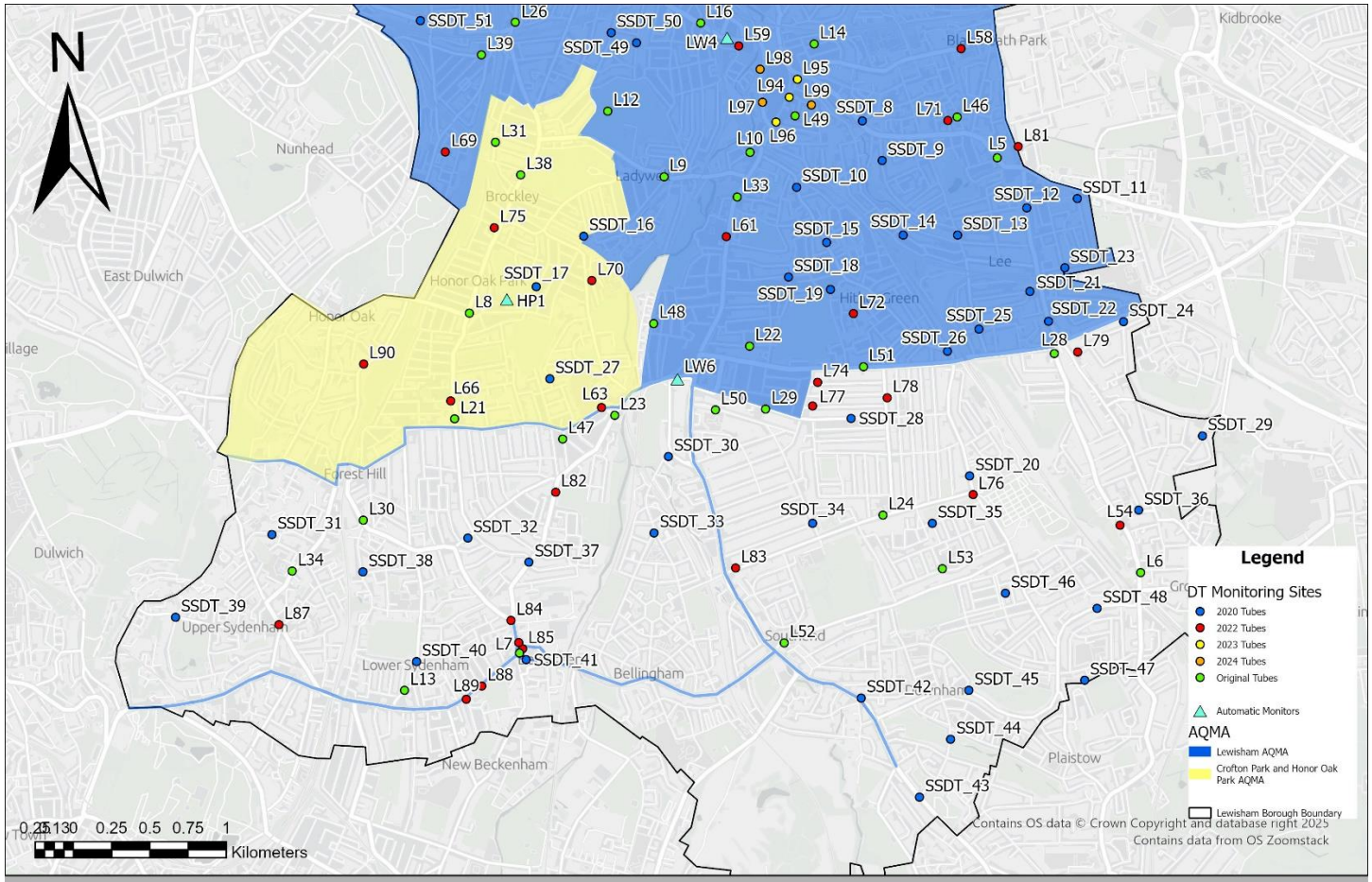
See Appendix C for details on bias adjustment and annualisation.

Data for L98 and L99 are provided in the table as indicative only but not presented in the main report due to the low data capture.

Appendix C Map(s) of Monitoring Locations and AQMAs

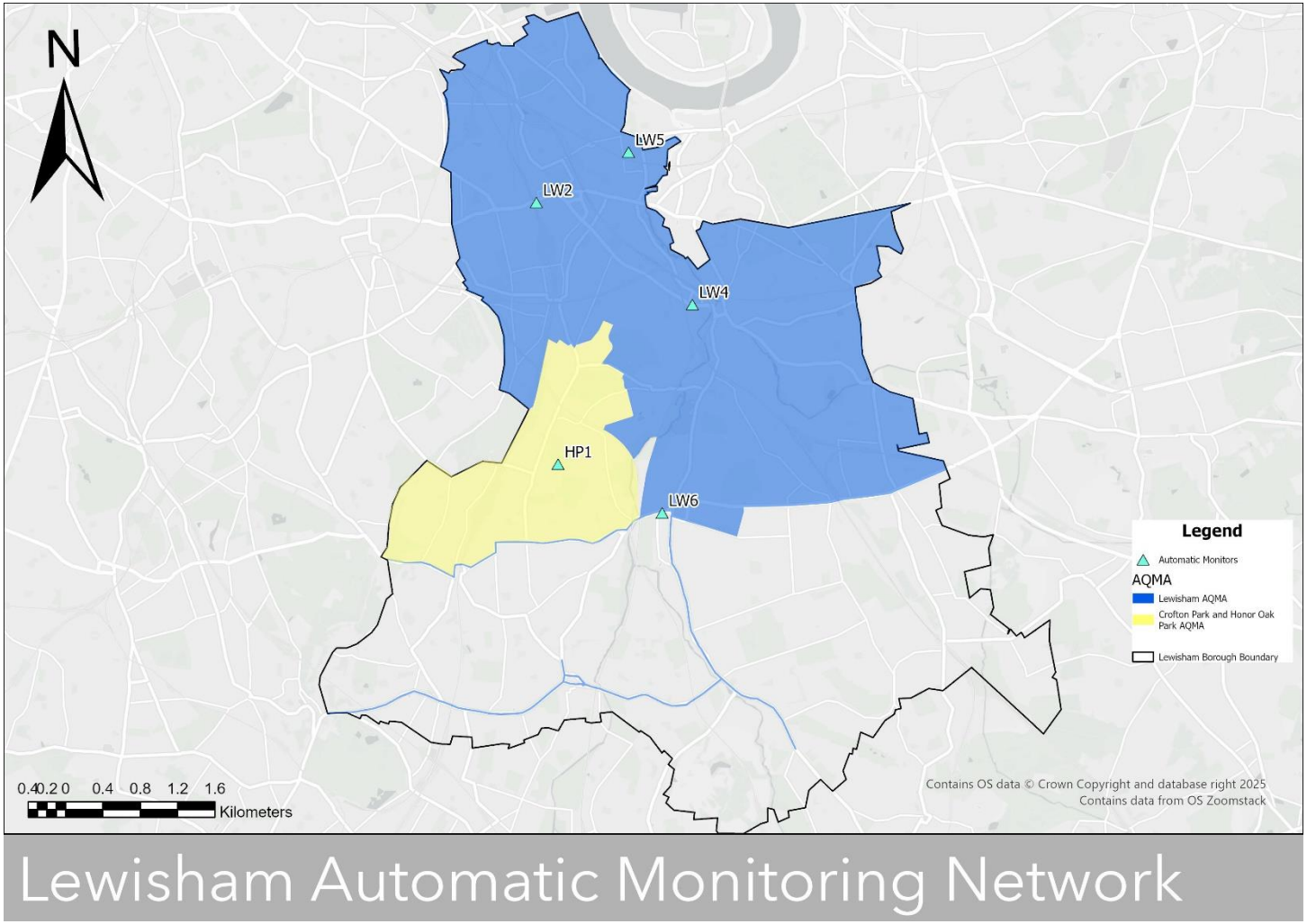
Figure A. Map of Non-Automatic Monitoring Site(s)





Lewisham Monitoring Network (South)

Figure B. Map of Automatic Monitoring Site(s)



London Borough of Merton

Air Quality Annual Status Report for 2024

Date of publication: 30th May 2025

This report provides a detailed overview of air quality in the London Borough of Merton during 2024. It has been produced to meet the requirements of the London Local Air Quality Management (LLAQM) statutory process[1].

Contact details:

[redacted], EH Pollution Manager (Air Quality)

Email: [redacted]@merton.gov.uk

[redacted], Lead Officer Air Quality & Contaminated Land

Email: [redacted]@merton.gov.uk

[redacted], Senior Air Quality Officer

Email: [redacted]@merton.gov.uk

Regulatory Services Partnership

Serving the London Boroughs of Merton, Richmond upon Thames and Wandsworth

Civic Centre, London Road, Morden, SM4 5DX

Telephone: 020 8545 3025

[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 ($PM_{2.5}$)	10 µg m^{-3}[3]	Annual mean	2040
Particles ($PM_{2.5}$)	London Mayoral Objective[4]: 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 Organization Air Quality Guidelines

(3) Environmental Target Regulations under the Environment Act 2021

(4) London Mayoral Objective

1. Air Quality Monitoring

Air quality is a complex field influenced by numerous variables. Monitoring must span extended periods to accurately reflect real-world trends. Factors such as temperature, weather, geography, local conditions, and wind direction all play a role in shaping the quality of our air. As a result, comparing data from one year to the next without accounting for these variables can lead to misleading conclusions. Nevertheless, such comparisons offer a useful indication of local changes and trends. The most recent monitoring results for 2024 show that nitrogen dioxide levels in Merton are highest near town centres, primarily due to vehicle emissions, as this remains the highest contributor to air pollution in the borough. This underscores the ongoing need for Merton to maintain its designation as an Air Quality Management Area and to prioritise efforts aimed at improving air quality.

Merton also acknowledges the potential need for stricter air quality objectives following the revisions to the World Health Organization's guidelines on 22nd September 2021. Currently, we are legally required to monitor two pollutants: nitrogen dioxide (NO_2) and particulate matter (PM_{10}). NO_2 is predominantly associated with combustion processes and serves as a reliable indicator of traffic-related pollution, as it is not naturally occurring except in events like lightning strikes. In contrast, particulate matter is more ubiquitous in the environment, with many pollution episodes originating on a regional, national, or even global scales.

Air quality is measured by three principal techniques in Merton:

1. Continuous monitoring

Merton is home to two continuous monitoring stations: an NO_2 analyser at the Civic Centre in Morden (ME9) and a particulate matter (PM_{10}) analyser on Merton Road in South Wimbledon (ME2). While these stations provide accurate, real-time data that contribute to the London Air Quality Network (LAQN) and are accessible on the LondonAir website, they are costly to install and maintain.

Merton has made a significant investment in its continuous monitoring network, and in 2025, the network will be expanded and updated to include a total of four automated sites, two of which will be new locations. Each site will continuously

monitor nitrogen dioxide (NO_2), as well as particulate matter (PM_{10} and $PM_{2.5}$). In addition, ozone monitoring will be added to the network.

2. Non-continuous monitoring using nitrogen dioxide (NO_2) diffusion tubes

In 2024, 62 locations were monitored, with diffusion tubes providing extensive coverage of key hotspots, including major roads and town centres across the borough. All monitoring sites are regularly reviewed, with adjustments made annually in January. Diffusion tubes offer a cost-effective way to assess NO_2 concentrations at multiple locations throughout the borough and are valuable for tracking long-term trends.

1.1 Locations

Table B. Details of Automatic Monitoring Sites for 2024

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)
ME2	Merton Road, South Wimbledon	Roadside	525808	170122	PM10	Yes	Merton AQMA	BAM	3.0	0.6	1.6
ME9	Civic Centre, Morden	Roadside	525588	168498	NO2	Yes	Merton AQMA	Chemiluminescent	0.6	3.0	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

Table C. Details of Non-Automatic Monitoring Sites for 2024

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)
1	Bushey Road	Roadside	523139	169056	NO2	Merton AQMA	15.3	1.5	No	2.5
2	Stonecot Hill	Roadside	524489	166637	NO2	Merton AQMA	12.2	1.7	No	2.4
4	154 Grand Drive	Kerbside	523315	168048	NO2	Merton AQMA	3.6	0.9	No	2.4
5	Sacred Heart PS	Kerbside	522501	168235	NO2	Merton AQMA	7.9	0.7	No	2.4
6	17 Grand Drive	Kerbside	523207	169195	NO2	Merton AQMA	8.4	0.3	No	2.4
7	Kingston Road (A298)	Roadside	524401	169351	NO2	Merton AQMA	8.3	1.5	No	2.4
8	Coombe Lane	Kerbside	523246	169333	NO2	Merton AQMA	2.0	0.6	No	2.2
9	Lambton Road	Kerbside	523203	169369	NO2	Merton AQMA	3.6	0.5	No	2.2
11	Kingston Road	Kerbside	525602	170042	NO2	Merton AQMA	3.4	0.4	No	2.4
13	Cottenham Park Road	Kerbside	523181	170264	NO2	Merton AQMA	12.4	0.6	No	2.2
14	20 The Ridgeway	Kerbside	524111	170879	NO2	Merton AQMA	1.5	0.4	No	2.4

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)
16	84 High Street	Kerbside	524067	171074	NO2	Merton AQMA	2.9	0.6	No	2.2
18	25-27 Wimbledon Hill	Kerbside	524696	170725	NO2	Merton AQMA	2.6	0.3	No	2.4
19	Wimbledon Station	Roadside	524770	170645	NO2	Merton AQMA	3.6	2.5	No	2.4
20	Hartfield Road	Kerbside	524867	170500	NO2	Merton AQMA	4.8	0.4	No	2.2
21	246 Merton Road	Roadside	525798	170081	NO2	Merton AQMA	1.9	0.5	No	2.4
22	12-16 Upper Green West	Roadside	527756	168993	NO2	Merton AQMA	4.2	2.0	No	2.4
23	183 Kingston Road	Kerbside	525156	169935	NO2	Merton AQMA	1.9	0.6	No	2.2
24	75 Hartfield Road	Kerbside	524994	170329	NO2	Merton AQMA	4.1	0.7	No	2.4
25	Alexandra Road	Roadside	525104	171125	NO2	Merton AQMA	4.0	2.1	No	2.2
26	Gap Road	Roadside	525708	171413	NO2	Merton AQMA	5.1	2.3	No	2.2
27	Plough Lane	Roadside	526035	171472	NO2	Merton AQMA	6.5	2.3	No	2.2
28	11 Haydons Road	Roadside	526158	170167	NO2	Merton AQMA	5.9	2.4	No	2.4

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)
29	44 High Street	Kerbside	526792	170376	NO2	Merton AQMA	2.6	0.7	No	2.4
30	Christchurch Road	Roadside	526791	170087	NO2	Merton AQMA	3.0	0.3	No	2.4
31	Alley Charminster Avenue	Urban Background	525452	169137	NO2	Merton AQMA	9.0	15.0	No	2.4
32	Merantun Way	Kerbside	526138	169825	NO2	Merton AQMA	4.8	0.8	No	2.4
33	Morden Road	Roadside	525803	169467	NO2	Merton AQMA	3.6	2.7	No	2.2
34	Western Road	Roadside	526840	169694	NO2	Merton AQMA	2.3	2.0	No	2.2
35	Lavender Avenue	Kerbside	527621	169646	NO2	Merton AQMA	5.8	0.4	No	2.2
36	35 London Road	Roadside	527915	170518	NO2	Merton AQMA	1.9	1.5	No	2.4
37	107 London Road	Kerbside	527935	169502	NO2	Merton AQMA	2.4	0.6	No	2.4
38	265 London Road	Kerbside	527738	168863	NO2	Merton AQMA	4.2	0.6	No	2.4
39	Church Road	Kerbside	527158	168646	NO2	Merton AQMA	3.0	0.6	No	2.4
40	London Road (A217)	Kerbside	527370	168312	NO2	Merton AQMA	5.4	0.8	No	2.4

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)
41	Morden Road (A239)	Roadside	526395	168172	NO2	Merton AQMA	3.1	1.5	No	2.4
42	St Helier Avenue	Roadside	526210	167683	NO2	Merton AQMA	12.8	3.3	No	2.4
43	Morden Hall Road	Roadside	526151	168293	NO2	Merton AQMA	22.2	2.4	No	2.3
44	31 London Road	Kerbside	525817	168643	NO2	Merton AQMA	4.9	0.6	No	2.4
45	HSBC	Kerbside	525778	169824	NO2	Merton AQMA	2.6	0.9	No	2.4
46	11 Crown Lane	Kerbside	525435	168499	NO2	Merton AQMA	5.0	0.6	No	2.4
47, 47/2, 47/3	Civic Centre	Roadside	525588	168498	NO2	Merton AQMA	1.5	1.5	Yes	2.4
48	Aberconway Road	Roadside	525757	168509	NO2	Merton AQMA	7.7	1.2	No	2.4
49	Crown Road Junction	Kerbside	525500	168470	NO2	Merton AQMA	2.9	0.8	No	2.4
50	Martin Way	Kerbside	525638	168616	NO2	Merton AQMA	9.7	0.7	No	2.4
51	Streatham Road	Roadside	528219	169782	NO2	Merton AQMA	5.2	1.6	No	2.4
52	West Barnes Lane	Kerbside	522749	168500	NO2	Merton AQMA	1.4	0.6	No	2.4

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)
53	139 Epsom Road	Kerbside	524621	166786	NO2	Merton AQMA	3.6	0.7	No	2.4
54	43 Upper Green East	Roadside	527890	168920	NO2	Merton AQMA	2.0	2.4	No	2.3
55	213 Manor Road	Kerbside	529661	168839	NO2	Merton AQMA	5.2	0.6	No	2.2
56	1 Weir Road	Roadside	525875	171682	NO2	Merton AQMA	13.0	1.5	No	2.3
57	363 Durnsford Road	Roadside	525396	172558	NO2	Merton AQMA	5.0	2.4	No	1.9
S01	Merton Abbey PS	Roadside	525941	169866	NO2	Merton AQMA	8.3	1.2	No	2.3
S4B	All Saints PS	Roadside	526136	170328	NO2	Merton AQMA	3.4	0.7	No	2.3
S12	St Peter & St Paul PS	Roadside	527639	168362	NO2	Merton AQMA	7.2	2.0	No	2.3
S36B	Park Community School	Roadside	525815	169235	NO2	Merton AQMA	12.0	2.7	No	2.3
S49B	Raynes Park High School	Roadside	522509	168640	NO2	Merton AQMA	19.9	9.2	No	2.3
S51	Morden Primary School	Roadside	525093	167325	NO2	Merton AQMA	6.1	3.5	No	2.3
S63	Wimbledon High School	Roadside	524505	170891	NO2	Merton AQMA	18.1	3.3	No	2.2

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)
S67	Rise Education	Roadside	527552	169099	NO2	Merton AQMA	6.1	1.8	No	2.3
S68	Eagle House	Roadside	527831	169253	NO2	Merton AQMA	18.1	0.7	No	2.3
S69	Just Learn	Roadside	527947	168855	NO2	Merton AQMA	14.3	2.2	No	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.

1.2 Comparison of Monitoring Results with AQOs

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period %[(a)]	Valid data capture 2024 %[(b)]	2018	2019	2020	2021	2022	2023	2024
ME9	525588	168498	Roadside	99.1	99.1	**48**	**51**	**43**	Insufficient valid results available for this year	38	31	21.3

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.

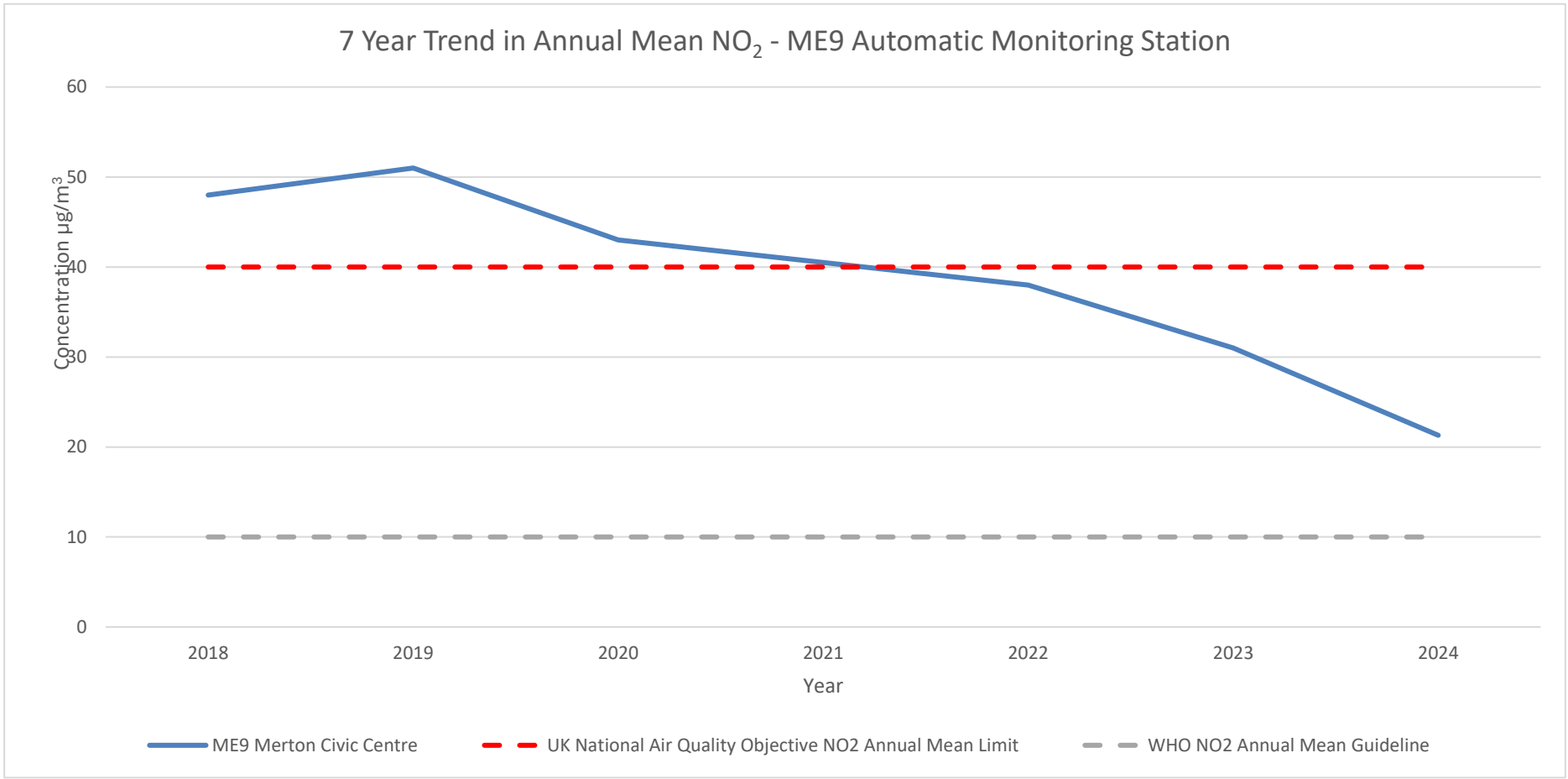
(b) Data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%).

The continuous nitrogen dioxide analyser provides a steady stream of data, which can be used to calculate both the long-term annual objective (as shown in Table D) and the short-term annual objective (as detailed in Table F). As writing this, all data from ME9 has been fully ratified, and annualisation was not necessary, as the data capture rate was sufficiently high.

At this monitoring location, there has been a notable downward trend in nitrogen dioxide concentrations. From 2018 to 2024, NO_2 levels have decreased significantly, with a 55% reduction, equating to a decrease of 26.7 µg m^{-3}. In 2024, ME9 recorded its lowest annual mean NO_2 concentration since its installation, meeting the 40 µg m^{-3} National Air Quality Objective for the third consecutive year. The 7-year trend is illustrated in Figure 1.

In 2025, four new continuous monitoring stations will be installed across Merton, replacing the two existing stations and expanding the network to a total of four sites. The new locations will include Plough Lane, Mitcham Town Centre, Merton Road, and Merton Civic Centre. Each station will monitor NO_2, $PM_{2.5}$ and PM_{10}.With one additional location measuring Ozone.

Figure 1: ME9 automatic monitoring station annual mean nitrogen dioxide trend chart 2018-2024



Notes:

(1) In 2021 insufficient valid results available for the year.

Table E. Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring (µg 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 2024 (%)(2)	2018	2019	2020	2021	2022	2023	2024
1	523139	169056	Roadside	90.6	90.6	**48.0**	**47.0**	34.0	36.0	36.0	29.8	25.7
2	524489	166637	Roadside	83	83.0	37.0	36.0	27.0	30.0	25.0	21.5	17.7
4	523315	168048	Kerbside	100	100.0	30.0	30.0	27.0	28.0	26.0	21.2	17.9
5	522501	168235	Kerbside	100	100.0	38.0	33.0	27.0	29.0	27.0	24.8	23.3
6	523207	169195	Kerbside	100	100.0	**43.0**	**43.0**	33.0	35.0	34.0	29.3	22.7
7	524401	169351	Roadside	75	75.0	**46.0**	**41.0**	33.0	34.0	32.0	28.9	23.4
8	523246	169333	Kerbside	100	100.0	**43.0**	**46.0**	38.0	38.0	34.0	31.6	28.6
9	523203	169369	Kerbside	100	100.0	**47.0**	**43.0**	37.0	35.0	31.0	26.3	28.6
11	525602	170042	Kerbside	100	100.0	35.0	34.0	28.0	28.0	26.0	22.9	18.6
13	523181	170264	Kerbside	100	100.0	37.0	35.0	23.0	24.0	20.0	17.2	23.3
14	524111	170879	Kerbside	100	100.0	**42.0**	**44.0**	27.0	28.0	25.0	22.0	24.9
16	524067	171074	Kerbside	100	100.0	**45.0**	**45.0**	33.0	36.0	31.0	26.7	22.6
18	524696	170725	Kerbside	92.5	92.5	**66.0**	**65.0**	**57.0**	**58.0**	**52.0**	**44.8**	**41.7**
19	524770	170645	Roadside	75	75.0	**55.0**	**51.0**	40.0	40.0	38.0	33.4	30.0
20	524867	170500	Kerbside	84.9	84.9	**55.0**	**52.0**	39.0	**47.0**	40.0	31.2	27.8
21	525798	170081	Roadside	90.6	90.6	**69.0**	**63.0**	**52.0**	**59.0**	**51.0**	**44.7**	34.7
22	527756	168993	Roadside	100	100.0	**64.0**	**57.0**	**47.0**	**44.0**	**45.0**	**42.4**	39.0

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 2024 (%)([2])	2018	2019	2020	2021	2022	2023	2024
23	525156	169935	Kerbside	100	100.0	**58.0**	**55.0**	**49.0**	**46.0**	**42.0**	38.2	30.1
24	524994	170329	Kerbside	100	100.0	39.0	32.0	31.0	29.0	28.0	22.8	18.1
25	525104	171125	Roadside	84.9	84.9	39.0	40.0	32.0	34.0	28.0	25.2	24.3
26	525708	171413	Roadside	100	100.0	**45.0**	**45.0**	34.0	35.0	29.0	26.8	25.0
27	526035	171472	Roadside	100	100.0	**46.0**	**42.0**	32.0	32.0	32.0	28.4	24.6
28	526158	170167	Roadside	100	100.0	**49.0**	**43.0**	33.0	31.0	28.0	25.7	27.9
29	526792	170376	Kerbside	75	75.0	**66.0**	**60.0**	**45.0**	**46.0**	**41.0**	37.3	37.4
30	526791	170087	Roadside	92.5	92.5	**51.0**	**51.0**	35.0	36.0	33.0	31.2	30.6
31	525452	169137	Urban Background	100	100.0	21.0	20.0	15.0	15.0	14.0	12.3	11.7
32	526138	169825	Kerbside	92.5	92.5	38.0	35.0	29.0	29.0	25.0	25.6	25.2
33	525803	169467	Roadside	75	75.0	**48.0**	**47.0**	34.0	37.0	32.0	26.9	26.2
34	526840	169694	Roadside	75	75.0	**55.0**	**54.0**	**43.0**	**41.0**	39.0	34.2	26.7
35	527621	169646	Kerbside	100	100.0	31.0	29.0	25.0	24.0	21.0	19.6	17.5
36	527915	170518	Roadside	100	100.0	**47.0**	40.0	33.0	34.0	31.0	26.8	22.7
37	527935	169502	Kerbside	100	100.0	**67.0**	**56.0**	**41.0**	**44.0**	**42.0**	37.1	30.8
38	527738	168863	Kerbside	92.5	92.5	**44.0**	**41.0**	33.0	35.0	33.0	33.9	32.3
39	527158	168646	Kerbside	100	100.0	**48.0**	40.0	30.0	30.0	26.0	24.8	28.5
40	527370	168312	Kerbside	100	100.0	**52.0**	**41.0**	33.0	33.0	33.0	32.5	28.3
41	526395	168172	Roadside	90.6	90.6	**48.0**	**45.0**	**41.0**	40.0	30.0	27.3	24.0

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 2024 (%)([2])	2018	2019	2020	2021	2022	2023	2024
42	526210	167683	Roadside	75	75.0	38.0	**42.0**	34.0	38.0	33.0	29.4	22.1
43	526151	168293	Roadside	100	100.0	**50.0**	**45.0**	36.0	39.0	36.0	33.9	26.6
44	525817	168643	Kerbside	100	100.0	**62.0**	**62.0**	**51.0**	**54.0**	**52.0**	39.4	29.2
45	525778	169824	Kerbside	100	100.0	**48.0**	**48.0**	**43.0**	38.0	33.0	26.6	23.2
46	525435	168499	Kerbside	90.6	90.6	**53.0**	**49.0**	**42.0**	40.0	38.0	29.6	25.5
47, 47/2, 47/3	525588	168498	Roadside	100	100.0	**51.0**	**52.0**	**44.0**	**42.0**	37.0	31.6	23.9
48	525757	168509	Roadside	100	100.0	**42.0**	39.0	31.0	31.0	28.0	25.8	21.3
49	525500	168470	Kerbside	92.5	92.5	40.0	39.0	30.0	30.0	27.0	23.3	19.1
50	525638	168616	Kerbside	92.5	92.5	**43.0**	40.0	31.0	33.0	29.0	24.9	21.5
51	528219	169782	Roadside	75	75.0	38.0	33.0	26.0	30.0	33.0	24.4	24.6
52	522749	168500	Kerbside	100	100.0	35.0	30.0	25.0	25.0	23.0	21.0	20.6
53	524621	166786	Kerbside	83	83.0	**43.0**	**51.0**	**41.0**	**48.0**	**41.0**	32.0	21.9
54	527890	168920	Roadside	90.6	90.6	not open	**62.0**	**47.0**	**49.0**	**45.0**	39.9	36.3
55	529661	168839	Kerbside	75	75.0	not open	**45.0**	36.0	37.0	36.0	39.4	33.2
56	525875	171682	Roadside	100	100.0	not open	not open	not open	not open	22.0	21.0	18.1
57	525396	172558	Roadside	100	100.0	not open	not open	not open	not open	23.0	21.9	20.8
S01	525941	169866	Roadside	92.5	92.5	not open	26.0	18.0	20.0	18.0	16.6	13.8
S4B	526136	170328	Roadside	84.9	84.9	not open	**46.0**	31.0	30.0	27.0	24.4	27.1

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 2024 (%)([2])	2018	2019	2020	2021	2022	2023	2024
S12	527639	168362	Roadside	75	75.0	not open	38.0	30.0	34.0	33.0	30.4	21.8
S36B	525815	169235	Roadside	100	100.0	not open	39.0	32.0	35.0	33.0	27.2	22.7
S49B	522509	168640	Roadside	90.6	90.6	not open	not open	not open	not open	not open	31.8	27.2
S51	525093	167325	Roadside	100	100.0	not open	**42.0**	29.0	37.0	31.0	24.1	16.7
S63	524505	170891	Roadside	100	100.0	not open	**56.0**	34.0	33.0	31.0	29.5	29.6
S67	527552	169099	Roadside	92.5	92.5	not open	**43.0**	29.0	33.0	32.0	28.9	24.7
S68	527831	169253	Roadside	100	100.0	not open	**53.0**	35.0	40.0	39.0	39.6	31.2
S69	527947	168855	Roadside	100	100.0	not open	**43.0**	30.0	36.0	33.0	29.6	29.4

☐ **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 µg m^{-3}.

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%).

Diffusion Tube Monitoring Data

Summary of data tables within this report:

- Table E provides the annual mean NO_2 diffusion tube monitoring results, with bias corrected values for each year from 2018 to 2024.
- Table O of Appendix A provides the bias adjustment factor used.
- Table T in Appendix A provides the NO_2 fall off with distance calculations.
- Table U in Appendix B provides monthly data for 2024.

The diffusion tube data was adjusted using the nationally derived bias correction factor of 0.88, as shown in Table O. Data capture was sufficiently high across all monitoring locations, allowing for the calculation of the annual mean without the need for annualisation. To ensure data integrity, all diffusion tube data undergoes rigorous QA/QC procedures, which are detailed in Appendix A.

In 2024, NO_2 levels were monitored through an extensive network of 62 diffusion tube locations across Merton. According to the London Local Air Quality Management Technical Guidance (LLAQM.TG(19), paragraph 3.10), the latest guidance recommends considering the last four years of monitoring data and conducting a trend analysis to identify any significant changes. Over this period, nitrogen dioxide concentrations have shown a decline across Merton.

The 2024 monitoring results (Table E) indicate that the annual mean NO_2 national air quality objective of 40 µg m^{-3} was exceeded at 1 of the 62 monitored locations in the borough. This marks a continued improvement in air quality across Merton. A visual overview of compliance is shown in Figure 2. However, after applying the distance correction to the exceeding site (as detailed in Appendix A, Table T) to estimate the concentration at relevant exposure points (sensitive receptors), no sites were found to be at or above the annual mean objective.

However, it is important to note that the UK objective values are now considered out of date and do not align with the WHO objectives which has resulted in many London boroughs aiming for stricter interim targets as part of their air quality action plans (AQAP).

Since 2020, no diffusion tube monitoring location has exceeded an annual mean of 60 µg m^{-3}, suggesting that the 1-hour mean objective has likely been met across the

borough's town centres. This reflects a notable improvement in air quality. Data from the borough's diffusion tube network, spanning from 2018 to 2024, is presented in Figure 2, organised into four charts. The locations are grouped geographically to facilitate comparison.

Between 2018 and 2024, there has been a clear downward trend in NO_2 concentrations across all monitoring locations within the London Borough of Merton. This trend is visually illustrated in the charts in Figure 2, which highlight that NO_2 concentrations in 2024 are notably lower than in 2018. A summary of compliance rate (percentage %) with the National Air Quality Objective is provided below:

Monitoring Year	**Compliance Rate**
2018	28 %
2019	26 %
2020	70%
2021	70 %
2022	85 %
2023	95 %
2024	**98 %**

While most areas in the borough now meet the old and now considered outdated UK legal limits (National Air Quality Objectives), air quality remains poorest in our town centres. In 2024, the highest NO_2 concentrations were recorded in Wimbledon Hill, Wimbledon (ID 18), High Street, Colliers Wood (ID 29), Upper Green West, Mitcham (ID 22), Upper Green East, Mitcham (ID 54); NO_2 levels reached up to four times the World Health Organization (WHO) recommended safe level of 10 µg m^{-3}.

Refer to Appendix C for the 2024 annual NO_2 diffusion tube monitoring data compliance map, as well as the link to interactive maps displaying annual NO_2 diffusion tube monitoring data from 2017 to 2024.

Figure 2: Long term NO_2 concentration trends in Merton 2018-2024 (all data bias adjusted) from non-automatic monitoring (diffusion tubes). Presented in the following 4 charts by area.

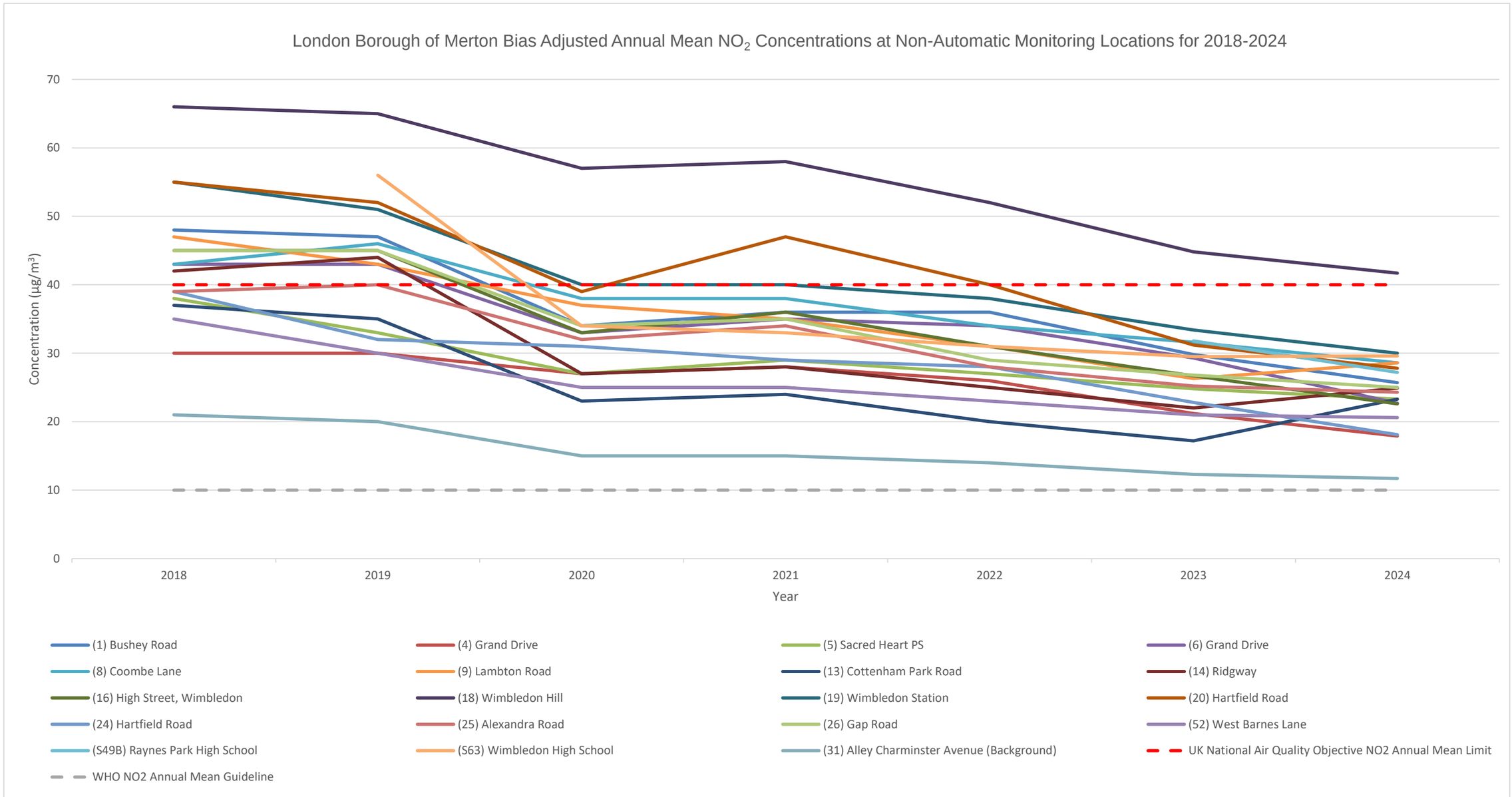


Chart 1 of 4: Raynes Park / New Malden / Wimbledon

Notes: (1) Site 52 opened in 2018. (2) Site S49B opened in 2023. (3) Site S63 opened in 2019.

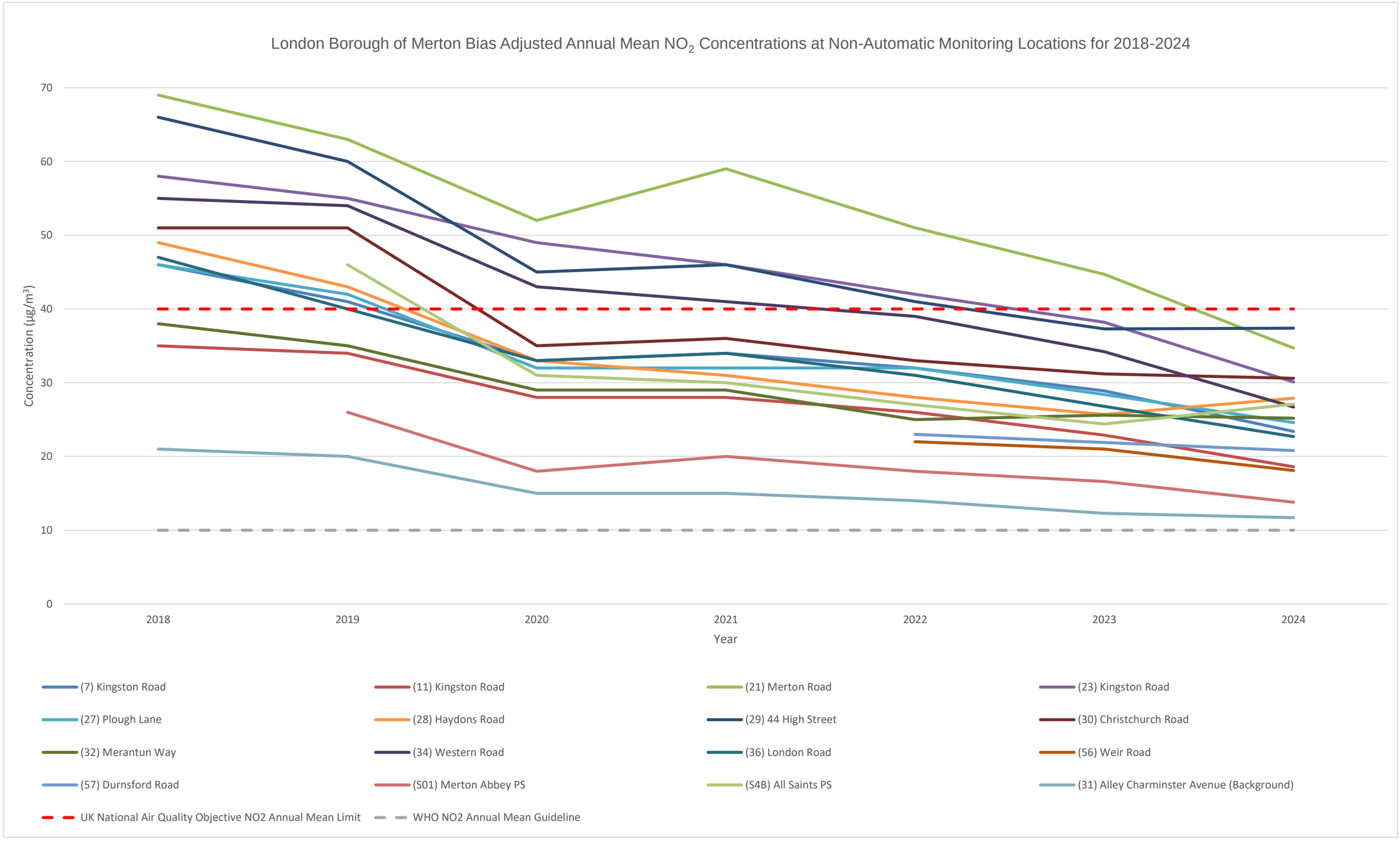


Chart 2 of 4: South Wimbledon / Colliers Wood / Tooting

Notes: (1) Sites 56 and 57 opened in 2022. (2) Sites S01 and S4B opened in 2019.

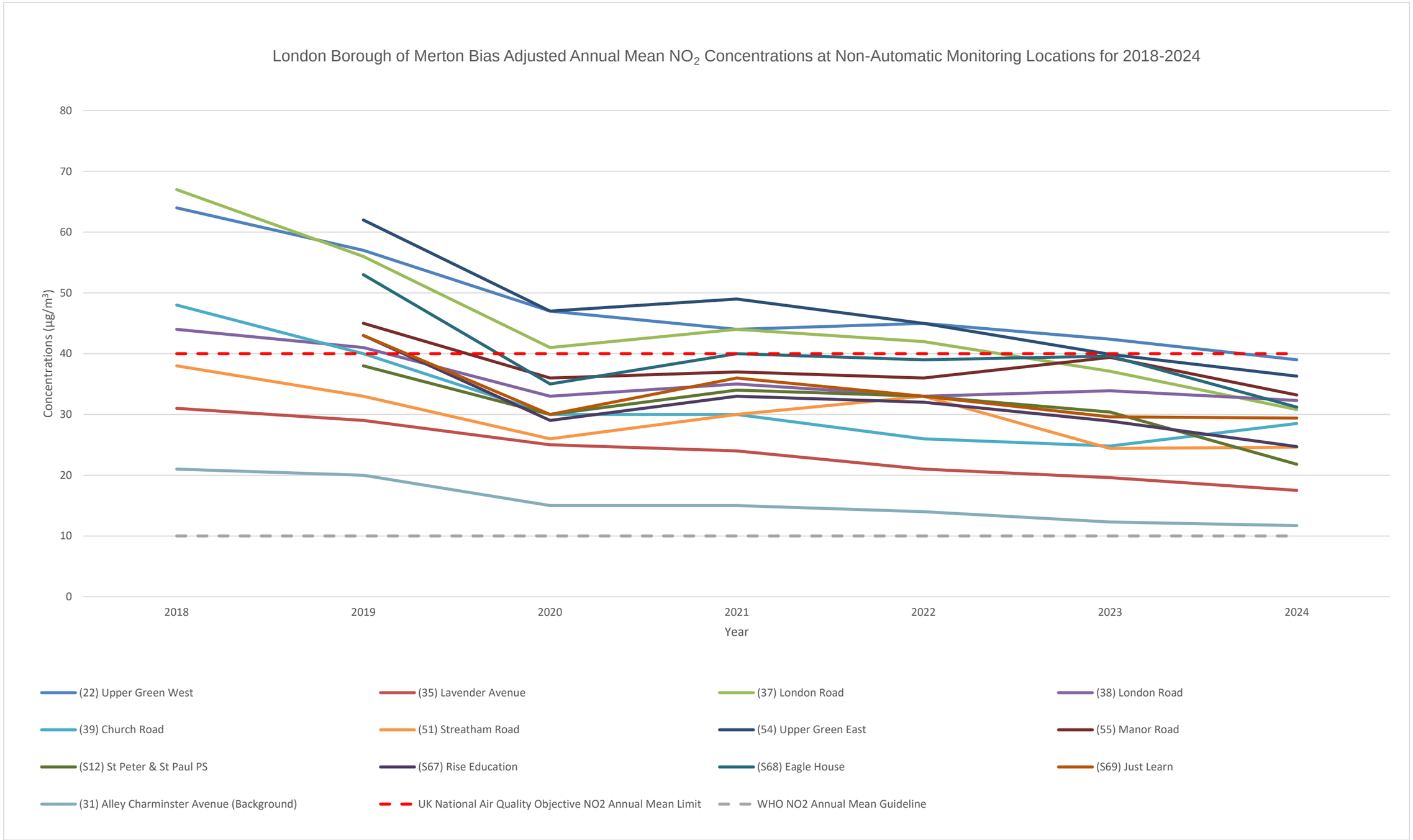


Chart 3 of 4: Mitcham

Notes: (1) Site 51 opened in 2018. (2) Sites 54, 55, S12, S67, S68 and S69 opened in 2019.

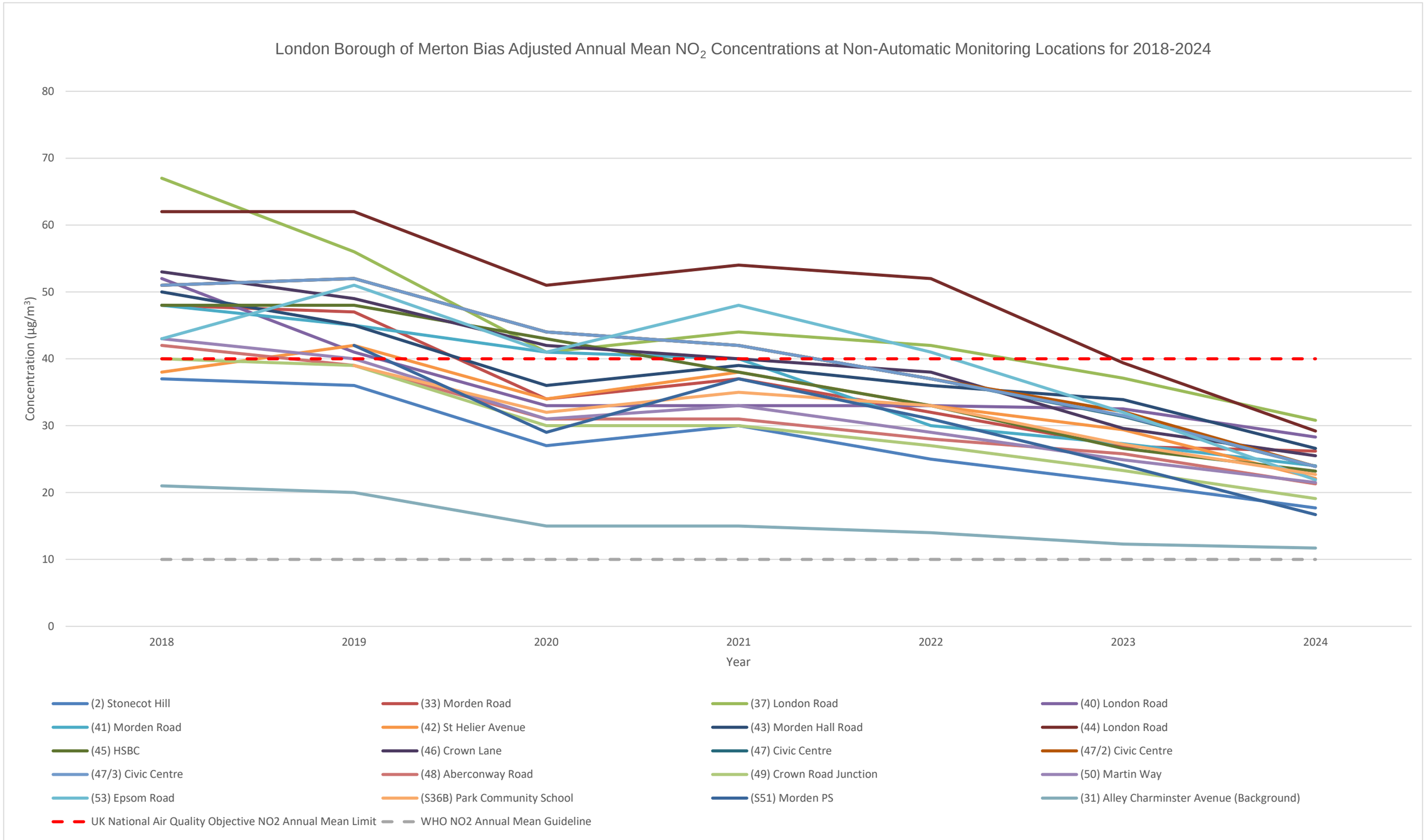


Chart 4 of 4: Morden

Notes: (1) Site 53 opened in 2018. (2) Sites S36B and S51 opened in 2019

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period %([a])	Valid data capture 2024 %([b])	2018	2019	2020	2021	2022	2023	2024
ME9	525588	168498	Roadside	99.1	99.1	0	1	0 (158.4)	Insufficient valid results available for this year	0 (108.8)	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%)

The 7-year trend in short-term nitrogen dioxide concentrations at the ME9 monitoring site shows that exceedances of 200 µg m^{-3} are rare. In 2024, there were no exceedances of 200 µg m^{-3} at the site, and it continues to meet the short-term 1-hour mean objective. The monitoring equipment at the site is scheduled for an upgrade in 2025.

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period %([a])	Valid data capture 2024 %([b])	2018	2019	2020	2021	2022	2023	2024
ME2	525808	170122	Roadside	87.1	73.1	34	28	26	23 (21.9)	26 (24.7)	Insufficient Data	20.8

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%).

The continuous PM_{10} BAM (Beta Attenuation Monitor) analyser provides a continuous stream of data, which is used to calculate both the long-term annual objective (reported in Table G) and the short-term annual objective (reported in Table H).

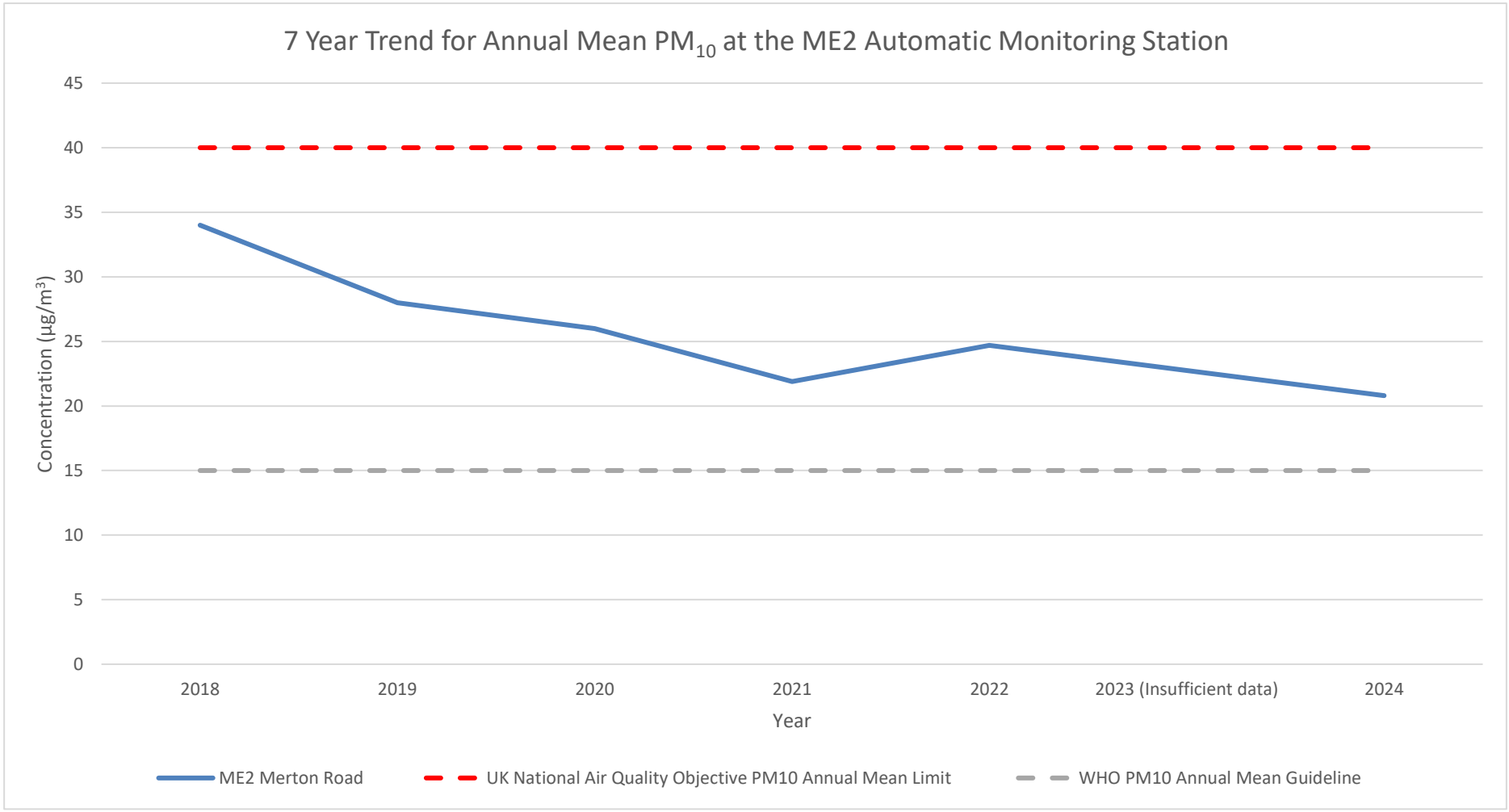
At the time of writing, all data from ME2 has been fully ratified. Annualisation was necessary as the data capture rate was below the 75% threshold.

Overall, a downward trend in PM_{10} concentration has been observed at this monitoring location. From 2018 to 2024, PM_{10} concentrations decreased significantly by 38%, representing a reduction of 13.2 µg m^{-3}.

In 2024, the PM_{10} annual mean concentration at ME2 was the lowest recorded since its installation, and it complies with the 40 µg m^{-3} annual mean National Air Quality Objective. The 7-year trend data is displayed in Figure 3.

Although the annual mean Air Quality Objective for PM_{10} has been comfortably achieved historically, there remains no safe level for particulate pollution. A focus is required to be maintained on Particulate Matter even when meeting the PM_{10} targets, because the London boroughs are collectively working to meet the World Health Organization (WHO) health-based limits by 2030. In September 2021, WHO tightened the annual mean guideline values for PM_{10} making them significantly lower than the current UK/EU standard, PM_{10} 15 µg m^{-3}. Currently, PM_{10} would not meet the WHO guideline value of 15 µg m^{-3} (annual mean) set to protect the public from the health effects of particulate matter. It will be a huge challenge to drive down particulate matter concentrations to these levels in Merton based on borough monitoring data to date. The same can be said for all London boroughs.

Figure 3: ME2 automatic monitoring station annual mean PM_{10} trend chart 2018-2024



Note: Data for 2023 is not included as data capture was below 25%.

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	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period %[a]	Valid data capture 2024 %[b]	2018	2019	2020	2021	2022	2023	2024
ME2	525808	170122	Roadside	87.1	73.1	13 (47.3)	20	11	8 (36.6)	6 (44.0)	Insufficient Data	1 (34)

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%).

2024 reported the lowest number of exceedances of the 24-hour mean objective at ME2 since its installation and complies with the PM_{10} 24-hour mean objective (50 µg m^{-3} over the permitted 35 days per year) for the year 2024.

The 24-hour Air Quality Objective is comfortably achieved; however, a focus is required to be maintained on Particulate Matter even when meeting the PM_{10} targets, because the London boroughs are collectively working to meet the World Health Organization (WHO) health-based limits by 2030. In September 2021, WHO tightened the annual mean guideline value for PM10 making it significantly lower than the current UK/EU standard, PM_{10} 15 µg m^{-3}. Currently, PM_{10} would not meet the new WHO guideline value of 15 µg m^{-3} (annual mean) set to protect the public from the health effects of particulate matter. It will be a huge challenge to drive

down particulate matter concentrations to these levels in Merton based on borough monitoring data to date. The same can be said for all London Boroughs.

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 the London Borough of Merton can be found in

Table I. The table presents a description of the AQMA that is currently designated within the London Borough of Merton. Appendix C provides maps of the AQMA and the air quality monitoring locations in relation to the AQMA. The air quality objectives pertinent to the current AQMA designation are as follows:

- NO_2 annual mean
- PM_{10} 24-hour mean

Table I. 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
Merton AQMA	17/11/2003	Nitrogen dioxide NO_2 annual mean Particulate Matter PM_{10} 24-hour mean	An area encompassing the whole borough of Merton. Source: Road transport unspecified	NO	Information not available	No exceedance reported in 2024	NO_2 3 years compliant at ME9 PM_{10} at least 8 years compliant at ME2 Compliance measured at automatic site	London Borough of Merton Air Quality Action Plan 2018-2023 New AQAP has been suspended pending funding	Merton AQAP

☒ **London Borough of Merton confirms the information on UK-Air regarding their AQMA(s) is up to date.**

☒ **London Borough of Merton confirms that all current AQAPs have been submitted to GLA.**

2.2 Air Quality Action Plan Progress

At the time of publication, the AQAP in place was for the period 2018-2023. It was planned to revise the AQAP in 2023; however, this was delayed until 2024. A cross-party task group was formed in 2024 to create a new plan, and a draft plan was produced and presented at Merton Council's Overview & Scrutiny Committee on the 27th of January 2025. A link to the document is provided below https://democracy.merton.gov.uk/documents/s54972/Draft%20Air%20Quality%20Action%20Plan%202025-30.pdf

At the time of writing this report the new AQAP 2025-2030 has been suspended, seeking funding for actions prior to formal consultation.

Until the new AQAP is adopted the 2018-2023 plan will remain active and we continue, where possible, to deliver against the actions therein. However, in April 2024 the air quality funding was paused in Merton pending adoption of the new AQAP which resulted in the suspension of a number of key priority actions as highlighted in Table M.

Table J provides a summary of the London Borough of Merton's progress against the Air Quality Action Plan, showing progress made this year. New projects which commenced in 2024 are shown at the bottom of the table.

Table J. Delivery of Air Quality Action Plan Measures

NB – Top three measures are included at the top of the matrix and explained in more detail under relevant measure.

Measure	Action	Progress
5	Refresh and update London Borough of Merton monitoring network	Merton has made a significant investment in its continuous monitoring network, and in 2025, the network will be expanded and updated to include a total of four automated sites, two of which will be new locations.
29	Support and promote the use of cleaner vehicles – London Borough of Merton's scrappage scheme	To support Merton residents to change towards cleaner vehicles as part of the ULEZ, London Borough of Merton provided an additional £1m towards the scrappage scheme.
39	Work with Public Health – Indoor Air Quality Project	The Air Quality Team developed and delivered a training package for professionals conducting home visits, aimed at raising awareness of indoor sources of air pollution.
1	Make available on the Council website all monitoring data in an accessible form.	Annual Status Reports containing tabulated and mapped data are publicly available on the council website. Discussions ongoing to embed mapped air quality data on the council website for public access. Or updated on the South West London's Love Clean Air Website.
2	Continue to annually review our diffusion tube network and identify additional priority locations.	Diffusion tube monitoring locations are reviewed annually in November/December and implemented in January. Locations are removed or relocated in response to council or community concerns regarding potential pollution hotspots. In 2024, the diffusion tube network spanned 62 locations including schools, town centres and main routes in the borough.
3	Positively encourage and support citizen science activities where these actively contribute to identify and tackling air quality in the borough.	Progress had been made in expanding the Citizen Science Project in Merton up until April 2024. Unfortunately, Merton's Air Quality Team was defunded in April 2024 which removed resourcing from key projects such as this. Prior to April 2024 the total number of Merton citizen scientist diffusion tubes were 21 and Merton Council had strong links with Sustainable Merton (an environmental charity), and resident's associations across the borough with representatives from those groups coordinating, distributing, and installing the nitrogen dioxide diffusion tubes. The objective of the project was to engage with residents of Merton, raising levels of positive involvement and interest in air quality. The air quality officers were providing training and ongoing support to help review the data collected.

Measure	Action	Progress
4	Invest in hand-held monitoring equipment that can be used by citizen science groups and schools.	The Pollution Team currently shares four calibrated mobile monitors across the Regulatory Services Partnership, used for monitoring specific locations and supporting projects. These are the SidePak ($PM_{2.5}$), MetOne Aerocet 831 ($PM_{2.5}$, PM_{10}), TSI Quest and 3M Quest (PM_{1}, $PM_{2.5}$, PM_{10}, VOC, CO, CO_2)
5	Seek additional funding for a refresh and update of our monitoring network including grant funding, Section 106 and Community Infrastructure Levy.	All monitoring stations in Merton completed and up and running except for the Merton Civic Centre (awaiting planning permission as of May 2025) ME2 - Merton Road: API T200 (NOx), BAM 1020 (PM_{10}), BAM 1020 ($PM_{2.5}$) ME9 - Morden Civic Centre: API T200 (NOx), BAM 1020 (PM_{10}), BAM 1020 ($PM_{2.5}$) MEA - Mitcham West: API T200 (NOx), BAM 1020 (PM_{10}), BAM 1020 ($PM_{2.5}$) MEB - Plough Lane, Wimbledon: API T200 (NOx), BAM 1020 (PM_{10}), BAM 1020 ($PM_{2.5}$)
6	Produce and update an interactive map of diffusion data that can be contributed to by groups and citizen science activities.	Not progressed in 2024. Carried forward to 2025. Work continues to embed web maps on the council website. It will be possible to embed web maps on the council website for groups to view the data that they have collected (all data will be uploaded by the council). Work to be scheduled in for 2024/25 – using ArcGIS Online, to develop public-facing web mapping applications displaying the data.
7	Assess and incorporate new technology in the world of air quality.	The London Borough of Merton continued to test new technology to monitor and model air quality. A significant milestone was reached in 2021 with the completion of a large-scale rollout of low-cost sensors as part of the InnOvaTe (Internet of Things, IoT) project—details of which are available in the 2022 Annual Status Report. The installed air quality sensors (Breathe London Nodes) measured fine particulate matter ($PM_{2.5}$) and nitrogen dioxide (NO_2), with data streamed live to the dedicated Breathe London Communities website, where it remains accessible. The contract with Imperial College, which led the Breathe London project, expired at the end of 2024, and the initiative is now entering a new phase with a consortium led by Global Action Plan and Vodafone. Participation in low-cost monitoring was defunded in April 2024
8	We will commission modelling of air quality in the borough up to 2022, by King's College London, including predicted trends and contributing sources.	This action has not been completed within the AQAP 2018-2023 (2024) timeframe. It was superseded in part by the installation of a low-cost monitoring network in the form of Breathe London during 2021 and 2022. The network funded through InnOvaTe (Internet Of Things) (IOT) project captured localised real-time nitrogen dioxide and PM2.5 (fine particulate matter) data around schools, Low Traffic Neighbourhoods, Air Quality Focus Areas, Town Centres and routes in and out of the borough.

Measure	Action	Progress
	Note: the faculty at King's College London that undertakes modelling moved to Imperial College London in 2020.	The London Atmospheric Emissions Inventory is used to view modelled air quality data and help to fill gaps in the boroughs measured data. The current base year is 2019 and includes emissions and concentration maps for forecast years 2025 and 2030.
9	Map Focus Areas & air quality 'hotspots' on planning GIS mapping to ensure these areas are highlighted.	Completed
10	Ensure that air quality is a vital part of the Council's New Local Plan.	Merton's Local Plan was adopted in November 2024. It has several policies that contribute to tackling poor air quality for example sustainable transport, air quality, places and spaces in a growing borough (design), health (including mental health) and wellbeing and climate change policies. The Local Plan requires Air Quality Assessment (AQA) (depending on development) to be submitted with planning applications. Further guidance on the implementation of Local Plan policy P15.10 *Air Quality, Pollution and Land Stability* is supported by Merton's Air Quality Supplementary Planning Guidance (SPD). The SPD provides further guidance on Air Quality Assessments. The SPD is a material planning consideration when determining development proposals submitted for planning permission.
11	Adoption of New AQ Supplementary Planning Document (SPD) to ensure emissions from new development are minimised and effective mitigation is integrated into the scheme of design.	Completed. Merton formally adopted the Air Quality Supplementary Planning Document (SPD) on 22nd June 2021 and is now a material planning consideration when determining development proposals submitted for planning permission. SPD is material consideration supporting and provide further guidance on implementing Local Plan and technical guidance.
12	Ensure air quality neutral development is required, and request where applicable an air quality assessment.	This is now standard practice in the planning process. Planning statistics are provided in Table N.

Measure	Action	Progress
13	Work with key partners in the GLA to explore the feasibility and delivery of air-quality-positive development particularly around our Focus Areas.	The Local Plan requires that 'Development proposals in Air Quality Focus Areas (AQFAs) or development proposal that are likely to be used by large numbers of people particularly vulnerable to poor air quality, such as children or older people should demonstrate that design measures have been used to minimise exposure following London Plan policy SI 1: Improving air quality'. In February 2023 the Greater London Authority (GLA) published Air Quality Positive Guidance. At the time of writing the guidance was under review. In 2022 the Greater London Authority reassessed and updated the Air Quality Focus Areas (AQFA). There are currently 4 AQFAs in Merton as mapped below. AQFAs are locations that not only exceed the EU annual mean limit value for nitrogen dioxide (NO_2) but are also locations with high human exposure. AQFAs are not the only areas with poor air quality but they have been defined to identify areas where currently planned national, regional, and local measures to reduce air pollution may not fully resolve poor air quality issues.

Measure	Action	Progress
		 Available on the data store https://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory--laei--2019-air-quality-focus-areas.
14	Ensure that new development contributes to funding air quality measures in the borough through Section 106 and CIL payments.	Merton's submitted Local Plan clearly states that the council will seek financial contributions through Planning Obligations to support air quality measures whenever a proposed development is not air quality neutral or when mitigation efforts fail to sufficiently reduce negative air quality impacts. This approach aligns with the new Air Quality Neutral Guidance published by the Greater London Authority (GLA) in February 2023.

Measure	Action	Progress
		In 2024 the Air Quality Team successfully obtained Section 106 funding from large scale developments to fund new air quality measures, details are reported in Table N.
15	Ensure that new development have a scheme of mitigation for tackling air quality including traffic reduction and low emissions strategies.	The effective delivery of this action falls across several teams within the council including Air Quality, Climate change and Transport. Linked to Actions 10-14. All major developments require an Air Quality Assessment to include an Air Quality Neutral Assessment. If the development is not neutral for building and/or transport emissions and the proposals cannot be changed to achieve air quality neutral status, mitigation is conditioned through the planning process to reduce the impact on air quality.
16	Produce and promote guidance to homeowners on what they can do to their homes to help reduce pollution in the borough.	Merton's Climate Delivery Plan for Year 5 (adopted in March 2025) sets out the council's progress in delivering Merton's Climate Strategy and Action Plan (2020) and working towards a net-zero carbon borough by 2050 and a net-zero carbon Council by 2030. Workstream 2 of the Climate Delivery Plan highlights the council's progress in promoting and supporting the retrofit of residential and non-residential buildings in Merton. This includes making homes more energy efficiency, decarbonising their heating systems and maximising renewable energy generation. In 2024, key areas of progress for workstream 2 included: • Launching Merton's Household Retrofit Guidance which provides a range of home energy efficiency advice to Merton residents to help them save money on their energy bills. • Launching Merton's Home Energy Efficiency Loan scheme which aims to support homeowners in Merton who do not meet the eligibility criteria for national and regional retrofit grant funding schemes to secure a low interest loan to improve the energy efficiency of their home. • Recruiting a new Minimum Energy Efficiency Standards (MEES) Officer in January 2024 who has since developed Merton's new MEES enforcement policy and procedure which will help improve the energy efficiency of private rented properties in Merton. • Working with the Greater London Authority and London South Bank University in Autumn/ Winter 2024/2025 to explore the barriers to retrofit through government funded schemes in order to increase uptake in Merton. • Working with our local energy advice partner, Thinking Works, to support fuel poor households in accessing national and regional funding to retrofit their homes.
17	Consider how we can extend the provision of vehicle charging to smaller residential	Secured £200k of funding from the On-Street Residential Chargepoint Scheme (ORCS) to replace and upgrade 100 lamp columns in areas where there are gaps in the EV charging network.

Measure	Action	Progress
	development to ensure the borough is ready for electric vehicles.	Merton has continued to develop transport policies including through the submission of Merton's New Local Plan[1], which strengthens the focus towards active and sustainable travel, in accordance with the Mayor's Transport Strategy[2], the new London Plan[3] and the Government's recently published Decarbonising Transport strategy[4]. In 2023, a total of 769 EV charging points were active in the borough. In 2024 this number increased to 829 EV charge points across the London Borough of Merton. Secured government LEVI funding for a future project to deliver fast charge points and to address any gaps in the existing network. Commissioned a consultant to develop Merton's EV charging strategy and Merton's cycling and walking strategy. (1) Merton Local Plan submission to the Secretary of State (2021 examination hearings held in 2022 and aiming for adoption 2024), available at: https://www.merton.gov.uk/planning-and-buildings/planning/local-plan/newlocalplan/localplan-submission (2) Mayor's Transport Strategy, available at: https://tfl.gov.uk/corporate/about-tfl/the-mayors-transport-strategy (3) Mayor's London Plan (2021), available at: https://www.london.gov.uk/what-we-do/planning/london-plan/new-london-plan/london-plan-2021 (4) Department for Transport's Decarbonising Transport (2021), available at: https://www.gov.uk/government/publications/transport-decarbonisation-plan
18	Continue to run our Non-Road Mobile Machinery (NRMM) Project.	Funding has been secured to enable continued delivery of the London wide project into 2028/29 thereby establishing a delivery platform for the upcoming standards of a fully Stage V fleet for 2030 and zero emissions in 2040.
19	Seek additional funding from DEFRA/GLA/Construction Industry to promote good practice on construction sites.	Ongoing - Funded as part of Action 18 – NRMM London Wide Project.
20	Request adoption of new techniques that have proven to be beneficial to air quality, such as Construction Logistics and Delivery and Service Planning.	New major developments (Planning)For new major developments, both a Construction Logistics Plan and a Delivery and Servicing is requested. A new approach around using Planning conditions to ensure sites consider power management will help reduce the reliance on polluting generators, Case studies are available supporting this approach

Measure	Action	Progress
		<u>Business – green logistics</u> The EMSOL and Cross River Partnership (CRP) project at Willow Lane Industrial Estate on Wandle Way monitored air and noise pollution arising from waste, construction, and other industrial activities in Merton, building on the success of the Weir Road Industrial Estate Project. This initiative, part of the DEFRA-funded Smarter Greener Logistics programme, aimed to reduce the impact of freight on air quality and noise through real-time monitoring of emissions in a known pollution hotspot. The project focused on establishing baseline data and identifying pollution sources, with particular attention to vehicular activity. Conducted over six months, from 25th March to 25th September 2024, the project collected data on Particulate Matter ($PM_{2.5}$ and PM_{10}), Nitrogen Dioxide (NO_2), and noise levels.
21	Review the Council's allocation of the Section 106 and CILs budget to see if this can provide funding to benefit air quality measures.	Merton's Air Quality Supplementary Planning Document (SPD) was adopted in June 2021 and includes Section 106 arrangements. Planning Obligation (often called s106 agreements) are agreements with developers for the provision of site-specific mitigation measures necessary to ensure a development meets the requirements of the Local Plan and for a number of areas including affordable housing, local training, skills, job brokerage and the obligation of Merton's Air Quality Action Plan. £69k Strategic CIL was spent on the provision of air quality monitoring stations at four locations across the borough during 2023-24. In addition to a further £180k capital investment.
22	Continue to request robust and enforceable measures to minimise the impact of developments during the construction phase.	All major developments are required to submit an Air Quality Assessment at the planning application stage. The AQA informs of the mitigation measures required to minimise the impact during demolition and construction. The requirements identified are then secured by a Construction Environmental Management Plan planning condition. Sites are considered for construction dust on a case-by-case basis, particulate matter (PM_{10}) monitoring and locations are agreed where a moderate or high risk to receptors are identified. Monitoring requirements can be included in the CEMP. All major developments are also required to have compliant Non-Road Mobile Machinery onsite, this is secured through an NRMM planning condition.
23	Commitment to a cycle Quiet-way between Clapham Common & Wimbledon forming the Merton section of the Wandle trail.	Scheme has been abandoned. However, the London Borough of Merton will be exploring a Cycleway Route between Morden and Earlsfield utilising the existing infrastructure along the Wandle Trail.

Measure	Action	Progress
24	Review funding available through Section 106 and CILs around transport and travel infrastructure.	Where necessary for development to take place, the London Borough of Merton seeks section 106 contributions towards transport and travel infrastructure. In London all boroughs pay Community Infrastructure Levy towards Crossrail. Transport improvements around individual sites are provided through funding from developments (via Section 278 legal agreements).
25	Carryout a borough wide cycling network audit to review and update the network.	A Walking & Cycling Strategy is currently being developed for the borough, with the intention to adopt the Strategy in late 2025. The Strategy is coming forward later than originally planned, as it has been necessary to align it with other key Transport Strategy documents that are also under development. The Strategy will incorporate a borough-wide audit of the cycle network.
26	Programme of installing bicycle infrastructure.	Cycle network development -2025/26 Design Only-Implementation subject to TFL design and funding approval. Morden Road Toucan Crossing - Provide a safe crossing facility Carshalton Road Shared Use Cycle Path - Provide shared use facility between Goat Road and Drake Road on Common Land. Mitcham to Colliers Wood Segregated Cycle Route - Explore proposals to provide high quality cycling infrastructure utilising Western and Church Roads. Gorringe Park Shared Use Cycle Path - Explore shared use path through Figgs Marsh. Commonside West Roundabout Cycle Route - Explore measures to improve cycling safety and permeability at this location.
27	Feasibility study to consider the use of Clean Air Zones (CAZ's) or a Merton Specific Ultra Low Emission Zone for Focus Areas and beyond.	The Ultra Low Emission Zone was expanded on the 29th of August 2023 to cover all London Boroughs. This strategic approach to reducing emissions across London supersedes borough level CAZs. To support its residents to change towards cleaner vehicles as part of the ULEZ, London Borough of Merton provided an additional £1m towards the scrappage scheme.
28	Air Quality Audit traffic and congestion in our three air quality focus areas.	No further updates following those published in the Annual Status Report for 2023. https://www.merton.gov.uk/system/files/Annual%20Status%20Report%202024.pdf

Measure	Action	Progress
		Air quality and traffic data collected in 2022 highlighted the continued need to tackle emissions from non-commercial vehicles.
29	Support and promote the use of a cleaner vehicle checker to inform the public of cleaner vehicle choice.	Merton Council's website provides information on the Mayor of London's Ultra Low Emission Zone (ULEZ) expansion, which from the 29th of August 2023 included Merton. Information includes a link to the TfL website for residents to check if their vehicle meets emissions and safety standards required to drive in the ULEZ, or if they need to pay a daily charge. https://www.merton.gov.uk/streets-parking-transport/scrap-a-vehicle Merton's scrappage scheme was available between 1st September 2023 to 1st September 2024. The £1m local vehicle scrappage scheme was available for Merton residents wanting to swap their higher-polluting cars for a sustainable alternative.
30	Lobby for Cleaner Buses and Taxis.	The Mayor's Transport Strategy (MTS) was published in March 2018. Proposal 29 sets outs timeframe as to how the mayor will clean London's bus fleet and that by 2037 all TfL buses will be electric or hydrogen. Merton Council continues to lobby for a greater share of TfL bus fleet investment to be targeted towards providing zero emission vehicles on the most polluted routes passing through this borough. We believe that TfL's MTS target does not go far enough and that the bus procurement programme should be accelerated so that the whole of greater London can enjoy the benefits of cleaner buses much sooner. Individual bus route contracts are typically retendered on a rolling 5-to-7-year basis. The London Borough of Merton strongly believes that all new bus service contracts should explicitly stipulate the purchase of only electric or hydrogen buses now (or hybrid double deckers, if cleaner alternatives are not available at the time). It is also noted that from 2020 TfL will buy only electric or hydrogen single deck vehicles and all double deckers meet Euro VI standard as a minimum. Current low emission electric bus routes in the borough include 200, 413 and 264. Fully converted: 93, 154, 164, 200, 264, 413, Partially converted: 80, 163. Source https://tfl.gov.uk/info-for/media/pressreleases/2023/august/london-reaches-major-milestone-with-morethan-1-000-zero-emission-buses

Measure	Action	Progress
31	Introduce Air Quality initiatives, benefits and monitoring in the new South Wimbledon Junction design and build.	Not progressed due to lack of Transport for London Funding. No additional updates. South Wimbledon junction will be reviewed in line with the Healthy Streets objectives, which include sustainable transport and improved air quality. All measures that are funded via the Mayor's Transport Strategy (LIP) will be considered against the healthy streets agenda and objectives.
32	Review the impact of our diesel levy* and consider a review of parking and charges to help reduce combustion engine vehicle use and the consequent emissions. **Note: The Sustainable Communities and Transport Overview and Scrutiny Panel to conduct pre-decision scrutiny on the scope of any reviews on parking levies.*	In April 2017, Merton took the innovative and bold decision to implement a diesel levy on parking permits to encourage drivers/owners in Controlled Parking Zones (CPZs) to move away from diesel vehicles. Expansion of the Ultra Low Emission Zone (ULEZ) on the 29th of August 2023 is expected to significantly accelerate the reduction in diesel vehicles registered in CPZs.

<table>
<tr><th>Measure</th><th>Action</th><th>Progress</th></tr>
<tr><td></td><td></td><td>Merton also offers an incentive for CPZ residents to change to electric vehicles. Permits for these cars are offered at a subsidised price of £20 per annum.
<table>
<tr><th>Period</th><th>Petrol</th><th>% of total sales</th><th>Diesel</th><th>% of total sales</th><th>Electric</th><th>% of total sales</th><th>Total</th></tr>
<tr><td>2017/18</td><td>13,345</td><td>70%</td><td>5,578</td><td>29.5%</td><td>23</td><td>0.5%</td><td>18,946</td></tr>
<tr><td>2018/19</td><td>14,332</td><td>70%</td><td>5,990</td><td>29.4%</td><td>51</td><td>0.6%</td><td>20,373</td></tr>
<tr><td>2019/20</td><td>14,107</td><td>73%</td><td>5,025</td><td>26%</td><td>112</td><td>1%</td><td>19,244</td></tr>
<tr><td>2020/21</td><td>16,108</td><td>73%</td><td>5,565</td><td>25%</td><td>263</td><td>2%</td><td>21,936</td></tr>
<tr><td>2021/22</td><td>17,461</td><td>75%</td><td>5,248</td><td>22.5%</td><td>504</td><td>2.5%</td><td>23,213</td></tr>
<tr><td>2022/23</td><td>17,955</td><td>77%</td><td>4,697</td><td>20%</td><td>738</td><td>3%</td><td>23,213</td></tr>
<tr><td>2023/24</td><td>17,514</td><td>76%</td><td>3,758</td><td>16%</td><td>1,682</td><td>7%</td><td>22,954</td></tr>
<tr><td>2024/25</td><td>10,875</td><td>77%</td><td>2,035</td><td>14%</td><td>1,216</td><td>9%</td><td>14,126</td></tr>
</table>
*2024/25 figures are only up to November 4th, 2024.</td></tr>
</table>

Measure	Action	Progress
		Since the introduction of the diesel levy, in conjunction with the proposed extension of the ULEZ, there has been a reduction of over 15% in the proportion of permits issued to diesel vehicles. During the same period the proportion of permits issued to electric vehicles has increased from less than 1% to 9%. Future proposals may seek to raise the cost of parking permits for the highest carbon-emitting vehicles, to address the challenge of the climate emergency. Merton ownership of Ultra Low Emission Vehicles for 2024 were 5,464 (includes both private and company Battery EVs and plug-in hybrids) and the Merton ownership of Battery Electric Vehicles were 3,193 (including both private and company Battery EVs). The figures show a decrease in diesel vehicle permits and an increase in electric vehicle permits in 2024.
33	We will continue to support, fund and promote airText and other health-based initiatives in the borough.	London Borough of Merton continues to promote airText and we continue to seek new avenues and funding streams to deliver this type of workstream with Public Health colleagues.
34	We will continue to support and update information on our Love Clean Air Website.	The 'South London Cluster Group' formed of Bromley, Croydon, Kingston, Lewisham, Merton, Richmond, Sutton, and Wandsworth councils worked together to create Love Clean Air to promote air quality in the region. Love Clean Air is all about letting you know how clean the air is in South London, and what you and others can do to make it even cleaner. Discussions started in 2024 for a complete refresh of the website with a planned delivery date in 2025.
35	We will review and update our own corporate website to include themed initiatives.	Prior to April 2024 air quality was a running feature in the council communications plan. Funding was suspended in April 2024 and the air quality team currently only focus on statutory duties.
36	We will play an active and co-ordinating role in national and regional campaigns such as National Clean Air Day.	Before April 2024, the air quality team actively participated in a range of national and regional air quality campaigns, including Clean Air Day, Clean Air Night, Car Free Day, and Junior Citizen. The team organised and attended events, promoted initiatives through communications, and shared valuable information and expertise with the public. However, following the suspension of funding in April 2024, all project-based work and public engagement activities have ceased. The team continues to carry out its statutory duties, but non-statutory events and campaigns are no longer supported.

Measure	Action	Progress
37	Continue to aspire to London's Cleaner Air Borough status award.	Scheme cancelled
38	Ensure that the good work and best practice we are delivering is publicised and disseminated to colleagues in the air quality industry.	The London Borough of Merton leads the pioneering Non-Road Mobile Machinery (NRMM) project and has secured continued funding from the Greater London Authority (GLA) to extend the initiative through to 2028. Operating under the "Cleaner Construction" banner, the project spans across London, promoting best practices in collaboration with key stakeholders, including other London boroughs, the GLA, and the construction industry. Insights gained from the non-road machinery sector are actively shared through Merton's membership and engagement with the Westminster Commission for Road Air Quality. The borough remains at the forefront of the zero-carbon transition, particularly through its involvement in hydrogen innovation. Merton's team regularly participates in industry events and was instrumental in the launch of the Westminster Commission's Hydrogen Working Party. In addition, the Air Quality Team publishes *Air Quality Matters*, a quarterly newsletter highlighting their work and progress. Distributed to both internal and external partners, the publication is consistently well received and helps drive awareness and collaboration in air quality improvements.
39	Work closely with our Public Health colleagues around joint health benefits.	The Health and Wellbeing Board identified a need to address indoor air quality in homes, especially regarding respiratory health mould and tobacco smoking. Many residents are unaware of how proper home ventilation and attention to pollution sources can improve their health and mitigate some symptoms experienced by those with long-term health conditions. The Air Quality Team were engaged by Public Health Merton in September 2024 to design and deliver a training package for professionals completing home visits. **Indoor Air Quality - A guide for professionals vising residents at home** The package included 6 webinars, printed and online collateral, delivering across London. Target audience; Adult Social Care, Asthma Nurses, PCT and NHS staff, care workers, MASCOT, London Fire Brigade, MPS Safer Neighbourhood Teams, Environmental Health Officers, Occupational Health Officers. The webinars were held in 2025, and associated materials will be hosted on the Love Clean Air website when Phase 1 of this project closes in Summer 2025.

Measure	Action	Progress
40	Establish a borough-wide air quality group.	Localised air quality actions such as nitrogen dioxide diffusion tube monitoring were delivered in 2023 and continued to early 2024 through citizen science groups. Funding was suspended in April 2024 and all project work ceased.
41	Establish an internal steering group within the local authority.	A cross-party working group was established in 2024 as part of the development of the new Air Quality Action Plan (AQAP). At the time of writing this report the new AQAP 2025-2030 is pending, seeking funding for actions prior to formal consultation.
42	Provide internal training sessions on air quality to internal partners and Councillors.	Not progressed in 2024 due to removal of funding.
43	Co-ordinate air quality funding and lobby national government to provide further financial and strategic support for local authorities to improve air quality.	Ongoing. We actively respond to all consultations and initiatives, locally, regionally, and nationally to raise the issues of air quality and the support needed for Local Authorities. In response to consultations the Air Quality Team liaises with the Association of Public Health Directors, London Councils, Local Government Association and has an established working relationship with the Greater London Authority.
44	Lobby Transport for London (TfL) for action on cleaner buses and taxis in our Air Quality Focus Areas.	This remains a top priority for the borough, actively addressed through ongoing partnership meetings with Transport for London (TfL). On 29th August 2023, the Ultra Low Emission Zone (ULEZ) was expanded to cover all London boroughs. The ULEZ regulations apply to cars, motorcycles, vans, specialist vehicles up to 3.5 tonnes, and minibuses up to 5 tonnes.
45	The Director of Public Health (DPH) to be kept fully updated on air quality status and initiatives.	The Air Quality Team regularly meets with working group Air Quality and Health Delivery Group to share Best Practice. Links to Action 39: Health and Wellbeing Board - air quality priority.
46	Public Health teams to support engagement and projects aimed at local stakeholders (businesses, schools, community groups and healthcare providers).	Public Health have worked closely with the Air Quality team on • developing and delivering a number of workshops that raise awareness of poor indoor air quality, with suggestions on mitigating issues that relate to damp and black mould

Measure	Action	Progress
		• partnership working to embed Love Clean Air and health and air quality alerts into health and care pathways
47	All air quality policies to be signed off by the Director of Public Health and to form close links to Public Health objectives.	Ongoing.
48	Make air quality part of The Health & Wellbeing Strategy / Joint Strategic Needs Assessment (JSNA) – the Director of Public Health to be retained as a member of the Air Quality steering group.	The Merton Story has a chapter on Place and Air Quality Microsoft Power BI and Healthy Place: Green Space, Climate Change & Air Quality The Merton Health and Wellbeing Strategy (2025 to 2030) includes a number of key 2030 outcomes, including reducing the number of deaths due to air pollution.
49	Review our procurement contracts for outsourced transport services and incorporate policies to establish the best and most cost-effective fleet possible.	The London Borough of Merton has made a commitment to decarbonise the council's vehicle fleet (including the waste collection fleet) by 2030. Develop Merton's Fleet Decarbonisation Strategy based on the options appraisal completed in 2024. The strategy encompasses the council's operational fleet and vehicles employed by key procured services such as recycling and waste collection. With reference to the council's outsourced service such as waste collection and street cleansing the current fleet is scheduled to be replaced in 2025. The London Borough of Merton's (LBM) new Procurement Strategy 2024-2026 focuses on measures to achieve the council's commitment to being a net-zero carbon council by 20230 and a net-zero carbon borough by 2050. To achieve these commitments, climate considerations must be embedded in all procurement decisions across the council. As well as delivering Carbon Literacy Training to increase climate awareness across the organisation, the council is piloting an assessment tool which provides prompts and guidance to help officers consider how their procurement or commissioning decision will reduce carbon emissions and adapt to the impacts of climate change. Criteria on carbon reduction, climate resilience and wider sustainability will be included as a Condition of Participation for relevant contracts, and working with the council's legal team, LBM will include carbon reduction commitments in their standard terms and

Measure	Action	Progress
		conditions for all new contracts as per the Government standard. LBM will require a minimum standard in their tenders from their suppliers to help achieve LBM net zero targets. The council will ensure that the key aims of the LBM Climate Strategy and Net Zero targets are embedded within our Social Value Charter. A mechanism will be developed for the decarbonisation of the council's procured services by 2030 (in line with Merton's Climate Strategy & Action Plan (2020) and annual Climate Delivery Plans). This will include baselining and monitoring Merton's existing supply chain emissions, identifying opportunities to reduce carbon emissions from existing contracts, and working with colleagues to adapt Merton's approach to procurement to embed carbon reduction and monitoring in all new contracts. For more information Merton Council's fleet and transport policies are set out in **Merton's climate strategy and action plan** on pages 22-25 in relation to the borough, and 28 and 29 in relation to actions to electrify the Council fleet.
50	Review our maintenance and servicing arrangements for our buildings to ensure that these are as energy efficient and cost effective as possible.	Replacement of the gas heating system in the civic centre with an electric system is underway. This should lower on site emissions at the civic centre. Expected to be finished February 2026. Surveys for similar upgrades on other buildings are underway. Solar Photovoltaic (PV) maintenance contract has been retendered. Improved maintenance of PV systems will decrease electricity consumption, contributing to lower carbon emissions at council buildings.
51	Ensure all new build and extensions within the council portfolio are to the highest, most efficient standards possible within the allocated budget.	See Action 50.
52	Encourage more walking, cycling and use of public transport for council business and review active travel plan for all staff.	The London Borough of Merton have a fleet of electric and non-electric bikes for staff and investment in new Brompton bikes that can be taken on public transport to move staff away from private vehicle use Merton also offer a business mileage scheme for cycling, to push staff towards cycling. Our Cleaner Construction project (NRMM) operates a Brompton bicycle loan scheme for staff to travel across London sustainably by public transport and bicycle. The London Borough of Merton participates in the Big Team Challenge Step Challenge, an initiative designed to encourage council employees to stay active by walking a virtual route set in various locations

Measure	Action	Progress
		around the world. Staff form teams of six and aim to accumulate as many steps as possible to complete the journey. As part of a partnership with Ecologi, a tree is planted for every five participants who take part in the challenge, supporting both personal wellbeing and environmental sustainability.
53	Review staff parking to reduce the use of personal vehicles.	In May 2024, a review of the travel plan and staff parking arrangements was underway to explore available options. The process included a robust assessment of the justification for personal vehicle use. There are no further updates at this stage.
54	Recruit an Air Quality Officer, funded by our Diesel Surcharge.	Completed 2018.
55	We will work closely with our Public Health colleagues to keep up to date with the latest research relating to air quality and health.	Ongoing. Regularly meet with the working group Air Quality and Health Delivery Group to share Best Practice. As the air quality team sit within the Regulatory Services Partnership formed of Merton, Wandsworth, and Richmond, there is the added benefit of sharing knowledge and expertise across all three partner boroughs.
56	We will work closely with Imperial College London*, the Greater London Authority and APRIL (Air Pollution Research in London – air quality expert group) to review the latest monitoring techniques. *Formerly King's College London.	The London Borough of Merton continues to work closely with Imperial College London through regular meetings and updates on the evolving Breathe London Project. Now entering a new phase, the project is being led by a consortium that includes Global Action Plan and Vodafone. Merton actively participates in the project's working group meetings, providing feedback and input on the development of the new website. The borough will retain its two Mayor-funded air quality sensors in 2025, ensuring continued local monitoring. Merton also leads the GLA-funded Non-Road Mobile Machinery (NRMM) project and maintains ongoing communication with the Greater London Authority regarding its progress. In addition, the Air Quality Team regularly attends national air quality conferences—valuable opportunities to engage with leading experts, explore innovative solutions, and deepen understanding of the challenges and strategies related to improving air quality.
57	Apply for grant schemes and incorporate new technologies and best practice.	Not possible due to the removal of air quality funding.

Measure	Action	Progress
58	Disseminate and publicise our ground-breaking work around schools and Non-Road Mobile Machinery (NRMM).	All school engagement activities including Air Quality Assessments, Workshops and Idling Action suspended in April 2024 due to the removal of funding. NRMM audits still ongoing.
59	Anti-idling to be adopted as an enforcement action in the borough with associated signage in problem areas.	Idling Action suspended in April 2024 due to the removal of funding. Between January and April 2024, Air Quality Officers (AQOs) conducted events targeting idling hotspots such as level crossings, schools, and locations identified through public complaints. At several events—especially those at level crossings, where traffic queues often cause significant idling—AQOs were supported by volunteers, including councillors and members of residents' associations. Additionally, students participated in school-based anti-idling campaigns, engaging directly with drivers to encourage them to switch off their engines. These events yielded positive outcomes, as direct conversations have proven to be one of the most effective methods for addressing vehicle idling. The benefits included a reduction in harmful emissions, which in turn helped lower localised air pollution—especially important in areas with vulnerable populations, such as children at schools. Prior to 2024, more than 200 'No Vehicle Idling' signs were installed across the borough at schools, level crossings, and taxi ranks. Following a thorough review of idling complaints received by the Pollution Team, an additional three signs were installed early in 2024. However, the installation of new signage ceased after April 2024 due to the withdrawal of funding.
60	Start partnership working with the GLA and surrounding boroughs on anti-idling campaigns.	Based on the success of the previous pan London Idling Action projects, Merton signed up to the Mayor of London's 4th round project. However, due to the suspension of air quality funding in April 2024 it was not possible to continue as a partner.
61	Work with neighbouring boroughs to consider tighter restrictions on bonfires.	Ongoing: Considering options and lobbying for greater powers. There is reluctance to introducing new bye laws to tackle bonfires. Merton are instead using lobbying powers for a new Clean Air Act to cover all domestic burning, both indoors and outdoors.

Measure	Action	Progress
62	Conduct campaigns relating to wood burning appliances and seek additional funding from DEFRA to carry out an impact assessment and explore further controls.	We continue to lobby for tighter regulations on wood burning appliances. Based on the success of the previous DEFRA funded London Wood Burning project, Merton signed up to the Mayor of London's funded project. However, due to the suspension of air quality funding and lack of staffing in April 2024 it was not possible to continue as a partner.
63	Deliver cleaner construction throughout London through our Non-Road Mobile Machinery (NRMM) project and extend this nationally.	The project has been represented at The Showman's Show, Plantworks, Fleet Vision International, and many other Industry events, enabling an understanding of innovations available, informing off-grid supply options especially. Running column in AMPS magazine and other trade articles. Mayors Air Quality Fund Round 4 enabled commencement of the Beyond Construction project, which is to operate until 2026/27. This activity is determining fleet profile baselines in Waste Transfer, Events and Street works, across the London area. National presentations to APSE members.
64	Assess and inspect newly installed CHPs (Combined Heat and Power) to ensure compliance with planning conditions.	Not progressed during 2024. There is no resource available to perform this function.
65	Maintain our ongoing commitment to school travel plans and the STARS review.	In 2024, we have been focusing on getting schools to maintain their accreditations. We have been working with schools that have attended Bikeability training and Junior Citizen to engage with the travel planning process. 13 Gold 1 Silver 5 Bronze
66	Carry out audits of schools in the most polluted areas of the borough and help provide a scheme of mitigation where necessary and possible.	The School Air Quality Audit programme was suspended in April 2024 following the withdrawal of funding. Between January and April 2024, one Air Quality Audit was completed.

Measure	Action	Progress
67	Review and assess annually the necessity for audits at schools and nurseries in areas subject to high levels of pollution.	This work stream continued in 2024.
68	Incorporate schools in areas of poor air quality into our monitoring network and regime.	Nitrogen dioxide was monitored by diffusion tubes SO1, S4B, S12, S36B, S49B, S51, S63, S67, S68, S69 at 10 schools. The data can be found in Table U.
69	Joint working arrangements with Public Health partners around schools to deliver joint health benefits.	The asthma project is working in this area and is mapping the air quality experiences of children with asthma. This is being led by CLCH school nursing and public health. The plan is to take air quality to the headteachers in academic year 2025-2026.
70	Work with and provide specialist advice and support to schools around air quality issues.	Prior to the suspension of funding in April 2024, the Air Quality Team actively supported schools by offering guidance on improving air quality and directing them to relevant information and funding opportunities. This support was most effectively delivered through tailored Air Quality Assessments, educational workshops, and Idling Action events—all of which were facilitated by the team before April 2024.
New Projects for 2024		**Project description and updates**
Indoor Air Quality Project – Training for Professionals		**Indoor Air Quality – A Guide for Professionals Visiting Residents at Home** The Air Quality Team developed a comprehensive training package aimed at professionals who conduct home visits, to raise awareness of indoor air pollution and its health impacts. The package included six webinars and supporting printed and digital materials, delivered across London. The target audience included Adult Social Care staff, asthma nurses, Primary Care Trust (PCT) and NHS personnel, care workers, MASCOT, the London Fire Brigade, Metropolitan Police Safer Neighbourhood Teams, Environmental Health Officers, and Occupational Health Officers.

Measure	Action	Progress
		The webinars were delivered in 2025, and the associated materials will be hosted on the Love Clean Air website upon the completion of Phase 1 of the project in Summer 2025. The training has been well received, with participants expressing gratitude for the increased awareness it provides around indoor air pollution. Positive feedback has been abundant, highlighting the value of the sessions.
Beyond Construction Project		The Mayor's Air Quality Fund Round 4 enabled commencement of the Beyond Construction project, led by the London Borough of Merton, with activities planned to continue through 2026/27. The project focuses on establishing baseline fleet profiles for Waste Transfer, Events, and Street Works across London.

3. Planning Update and Other New Sources of Emissions

Table K. Planning requirements met by planning applications in London Borough of Merton in 2024

Condition	Number
Number of planning applications where an air quality impact assessment was reviewed for air quality impacts	33
Number of planning applications required to undertake construction dust monitoring and reporting (Please specify how you get access to dust monitoring data i.e. online tool or CSV file)	5
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 as detailed in Air Quality Neutral LPG (london.gov.uk) point 3.1.5.	0
Number of developments required to install Ultra-Low NO_X boilers	12
Number of developments where an AQ Neutral building and/or transport assessments undertaken	31
Number of developments where the AQ Neutral building and/or transport assessments not meeting the benchmark and so required to include additional mitigation	6
Number of planning applications with S106 agreements including other requirements to improve air quality	2
Number of planning applications with CIL payments that include a contribution to improve air quality	Total planning contributions for air quality in 2024 was £33,759.
NRMM: Central Activity Zone, Canary Wharf and Opportunity Areas Number of planning applications with conditions related to NRMM included. Number of developments registered at www.nrmm.london. Number of audits (based on the pan-London project report and / or inhouse auditing programme) % of sites unregistered prior to audit % of sites compliant with Stage IV of the Directive and/or exemptions to the policy.	Opportunity London Merton N/A
NRMM: Greater London (excluding Central Activity Zone, Canary Wharf and Opportunity Areas) Number of planning applications with conditions related to NRMM included. Number of developments registered at www.nrmm.london. Number of audits (based on the pan-London project report and / or inhouse auditing programme)% of sites unregistered prior to audit % of sites compliant with Stage IIIB of the Directive and/or exemptions to the policy.	NRMM conditions recommended to be attached to all planning applications where construction and demolition is proposed (33). Cleaner Construction for London (CCfL) undertook 20 site audits in the London Borough of Merton in 2024.

Condition	Number
	19 London Borough of Merton developments registered at www.nrmm.london Nine sites, accounting for 45% of the total, were unregistered prior to audit. Nineteen out of twenty sites, representing 95%, were compliant following the audit. The single non-compliant site was due to a registration issue. In 2024, 5 sites achieved Self-Compliant status, meaning they met or exceeded emission standards and had all machinery correctly registered prior to the audit. In 2024, 11 sites worked towards and successfully achieved Compliance. These sites were initially non-compliant but met the required emission and administrative standards by implementing all recommendations provided by CCfL officers. 3 sites reported no Non-Road Mobile Machinery (NRMM) within the 37–560 kW scope currently in use. 45% of the audited sites were cold engaged - that is, initially unregistered sites identified during on-site visits and subsequently engaged.

Condition	Number
	55% of the audited sites were not cold engaged, meaning they were already registered on the NRMM website before the audit took place.

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 Merton Fleet

As part of its Climate Action Plan, London Borough of Merton has made a commitment to decarbonise the Council's vehicle fleet (including the waste collection fleet) by 2030. A Decarbonisation Strategy for the Council's vehicle fleet has now been developed. This work has encompassed the council's operational fleet and vehicles employed by key procured services such as recycling and waste collection - Issue details - Decarbonisation of Vehicle Fleet - Merton Council

In 2024, London Borough of Merton Worked with the Energy Savings Trust to undertake an options appraisal to inform Merton's approach to decarbonising its fleet and supporting EV Charging infrastructure needs.

In 2023, 7.4% of the borough's fleet was composed of zero emission and zero emission capable vehicles. The zero-emission fleet included 1 electric vehicle, 1 hybrid vehicle and 4 electric bikes.

As of now, the London Borough of Merton fleet includes 10 zero-emission vehicles and 3 hybrid vehicles, representing approximately 10% of the total fleet.

4.2 Planning Enforcement

The Pollution Team are statutory consultees on all major developments. Consultation requests are received by a case management system.

All relevant national, Mayoral and Merton local policies are applied by the Pollution Team to all relevant planning consultations.

All sites with NRMM registered are audited by Cleaner Construction London.

Complaints relating to construction are investigated by the Pollution Team and referred to Planning Enforcement as required.

4.3 Pan-London NRMM Auditing Project

NRMM condition recommended to be attached to all planning applications where construction and demolition is proposed. NRMM is a standard planning condition applied to all major developments.

NRMM Condition applied to the Decision Notice:

All Non-Road Mobile Machinery (NRMM) of net power of 37kW and up to and including 560kW used during the course of the demolition, site preparation and construction phases shall comply with the emission standards set out in chapter 7 of the GLA's supplementary planning guidance "Control of Dust and Emissions During Construction and Demolition" dated July 2014 (SPG), or subsequent guidance. Unless it complies with the standards set out in the SPG, no NRMM shall be on site, at any time, whether in use or not, without the prior written consent of the local planning authority. The developer shall keep an up-to-date list of all NRMM used during the demolition, site preparation and construction phases of the development on the online register at https://nrmm.london/

4.4 Air Quality Alerts

The London Borough of Merton continues to support airTEXT (https://www.airtext.info/).

Merton will review how the mayor's air quality alert messaging is cascaded in 2025/26.

4.5 Air Quality Positive

Nothing to report.

Appendix A Details of Monitoring Site Quality QA/QC

A.1 Automatic Monitoring Sites

All data undergo rigorous quality assurance and quality control (QA/QC) procedures to ensure the highest standards of accuracy and reliability. Continuous automatic monitoring was conducted throughout the entire 12-month period in 2024.

NO_2 Monitoring

The NO_2 chemiluminescent continuous analyser is checked regularly online by Imperial College London and calibrated by the newly appointed contractor, We Care 4 Air (WC4A), (appointed on 1st April 2024) employed by London Borough of Merton for Local Support Officer (LSO) and Service and Maintenance visits during 2024. Regular 4 weekly calibration visits were maintained throughout 2024. There is a need for frequent calibration adjustments as the gradual build-up of dirt within the analyser reduces the response rate. This fall off in response needs appropriate correction, to ensure the recording of the true concentrations.

Calibration involves comparing the analyser's readings against a known concentration of span gas. The span gas used is nitric oxide, certified to an accuracy of ±5%. Both the automatic overnight calibrations and manual calibrations use this same certified span gas—avoiding the less precise permeation tube method.

Additionally, the NO_2 continuous analyser is serviced biannually by WC4A and audited every six months by the Ricardo. These activities are part of the London Air Quality Network (LAQN) quality assurance and quality control (QA/QC) procedures, managed by the Environmental Research Group (ERG) at Imperial College London, to maintain high data quality standards.

PM_{10} Monitoring Adjustment

Particulate matter is continuously monitored using a Beta Attenuation Monitor (BAM). To ensure accurate reporting, automatic scaling is applied to measurements from PM_{10} instruments, adjusting 'base' dust readings to align with EU reference-

equivalent PM_{10} values before dissemination. The scaling process is specific to the instrument type. For PM_{10} BAMs, standard correction factors are used according to the slope correction outlined in their reference equivalence certification, with adjustments made based on whether the inlet is heated or unheated.

A.2 Diffusion Tubes

Directive 2008/50/EC of the European Parliament and Council on ambient air quality and cleaner air for Europe (EC, 2008) establishes air quality standards for NO_2, along with other pollutants. Under this directive, annual mean NO_2 concentration data obtained from diffusion tube measurements must meet an accuracy requirement of ±25% to be comparable with the NO_2 air quality objectives.

To ensure high-quality NO_2 concentration data, it is essential to meet stringent performance criteria through comprehensive quality assurance (QA) and quality control (QC) procedures. Several factors influence the performance of NO_2 diffusion tubes, including the laboratory conducting the analysis and the method used to prepare the tubes (AEA, 2008). As such, QA and QC procedures are a fundamental part of any monitoring programme, minimizing data uncertainties and ensuring the most accurate estimate of true concentrations.

Our NO_2 diffusion tubes are analysed by Gradko, using the 50% TEA in acetone preparation method. Gradko actively contributes to the development of rigorous QA and QC procedures to maintain the highest level of confidence in their laboratory measurements. They played a key role in the creation of the Harmonisation Practical Guidance for NO_2 diffusion tubes (AEA, 2008) and have adhered to these guidelines since January 2009. Additionally, since April 2014, Gradko has participated in the AIR-PT scheme, which combines two long-established proficiency testing schemes: the LGC Standards STACKS PT scheme and the HSL WASP PT scheme.

This section contains details of Gradko International Ltd.'s Results of laboratory precision.

- Performance in Air NO_2 PT Scheme (February 2023 to February 2025)
- Summary of Precision Scores for 2023-2025
- United Kingdom Accreditation Service (UKAS) schedule of accreditation (December 2024)

Gradko International Ltd is a UKAS-accredited laboratory that actively participates in laboratory performance and proficiency testing schemes. These schemes establish rigorous performance standards for participating laboratories, ensuring that the reported NO_2 concentrations are of the highest quality.

Summary of Laboratory Performance in AIR NO_2 Proficiency Testing Scheme (February 2023 to February 2025)

Gradko participates in the AIR-PT scheme for NO_2 diffusion tube analysis, which involves the quarterly testing of laboratory performance using artificially spiked diffusion tubes. This scheme is designed to help laboratories meet the requirements of the European Standard. In 2024, Gradko demonstrated **satisfactory** performance for the 50% TEA in acetone preparation method.

The laboratory adheres to the procedures outlined in the *Harmonisation Practical Guidance* and is an active participant in the AIR-PT proficiency testing scheme. Prior to AIR-PT, Gradko took part in the Workplace Analysis Scheme for Proficiency (WASP) for NO_2 diffusion tube analysis. DEFRA and the Devolved Administrations recommend that diffusion tubes used for Local Air Quality Management (LAQM) should be sourced from laboratories that have shown consistent, satisfactory performance in the AIR-PT scheme.

Gradko's laboratory performance is further evaluated by the National Physical Laboratory (NPL), which assesses results from the AIR-PT scheme in conjunction with data from the monthly NPL Field Inter-Comparison Exercise, conducted at Marylebone Road in central London. Laboratories are assigned a 'z' score, where a

score of ±2 or less indicates satisfactory performance. Gradko International Ltd.'s performance in 2024 is covered under AIR-PT rounds AR062 to AR068.

Based on the latest available data, the five-round performance window used to evaluate Gradko's laboratory quality spans AIR-PT rounds AR055 to AR068.

During this time, 100% of the results submitted by Gradko were determined to be satisfactory other than the results for Jan-Feb 2025.

Table 1: Laboratory summary performance for AIR NO_2 PT rounds AR055, 56, 58, 59, 62, 63, 65, 66 and 68

The following table lists those UK laboratories undertaking LAQM activities that have participated in recent AIR NO_2 PT rounds and the percentage (%) of results submitted which were subsequently determined to be **satisfactory** based upon a z-score of ≤ ± 2 as defined above.

AIR PT Round	AIR PT AR055	AIR PT AR056	AIR PT AR058	AIR PT AR059	AIR PT AR062	AIR PT AR063	AIR PT AR065	AIR PT AR066	AIR PT AR068
Round conducted in the period	January – February 2023	May – June 2023	July – August 2023	September – October 2023	January – February 2024	April – June 2024	July – August 2024	September – October 2024	January – February 2025
Aberdeen Scientific Services	0 %	100 %	100 %	75 %	100 %	100 %	100 %	100 %	100 %
Cardiff Scientific Services	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]
Edinburgh Scientific Services	100 %	75 %	100 %	50 %	100 %	100 %	100 %	100 %	100 %
SOCOTEC	100 % [1]	100 % [1]	100 % [1]	100 % [1]	100 % [1]	100 % [1]	100 % [1]	100 % [1]	87.5 % [1]
Exova (formerly Clyde Analytical)	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]
Glasgow Scientific Services	100 %	100 %	100 %	100 %	75 %	100 %	100 %	100 %	100 %
Gradko International	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	50 %
Kent Scientific Services	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]
Kirklees MBC	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]
Lambeth Scientific Services	0 %	75 %	50 %	0 %	50 %	50 %	50 %	50 %	100 %
Milton Keynes Council	50 %	75 %	100 %	100 %	100 %	NR [2]	50 %	100 %	100 %
Northampton Borough Council	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]
Somerset Scientific Services	100 %	75 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
South Yorkshire Air Quality Samplers	NR [2]	NR [2]	NR [2]	NR [2]	NR [2]	NR [2]	NR [2]	NR [2]	NR [2]
Staffordshire County Council, Scientific Services	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Tayside Scientific Services (formerly Dundee CC)	NR [2]	100 %	NR [2]	NR [2]	NR [2]	NR [2]	100 %	NR [2]	NR [2]
West Yorkshire Analytical Services	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]

[1] Participant subscribed to two sets of test results (2 x 4 test samples) in each AIR PT round.
[2] NR, No results reported.
[3] Cardiff Scientific Services, Exova (formerly Clyde Analytical), Kent Scientific Services, Kirklees MBC, Northampton Borough Council and West Yorkshire Analytical Services; no longer carry out NO2 diffusion tube monitoring and therefore did not submit results.

Precision Summary Results

The summary of diffusion tube precision results is provided below, outlining the total number of good and bad precision results over the past three years for laboratories currently conducting diffusion tube analysis.

2022 - 2024 Summary of Precision Results for Nitrogen Dioxide Diffusion Tube Collocation Studies UK Laboratories including for Gradko Laboratory 50% TEA in Acetone

Precision Summary Table

Diffusion Tube Preparation Method	2022 Good	2022 Bad	2023 Good	2023 Bad	2024 Good	2024 Bad
Gradko, 50% TEA in Acetone	16	0	16	0	11	0
Gradko, 20% TEA in Water	33	0	25	0	26	0
ESG Didcot / SOCOTEC, 50% TEA in Acetone	29	0	33	2	30	3
ESG Didcot / SOCOTEC, 20% TEA in Water	11	0	8	0	1	0
Staffordshire Scientific Services	13	0	12	0	16	0
Glasgow Scientific Services	3	3	1	0	1	0
Edinburgh Scientific Services	1	0	4	2	1	1
Milton Keynes Council	1	0	1	0	1	0
Tayside Scientific Services	1	0	1	0	1	0
Lambeth Scientific Services	6	4	10	1	2	0
Aberdeen Scientific Services	7	0	7	0	6	0
ESG Glasgow, 50% TEA in Acetone	1	0	1	0	1	0
ESG Glasgow, 20% TEA in Water	1	0	1	0	1	0
Somerset County Council	14	0	12	0	4	0

Numerical results for this data are contained in the National Bias Adjustment Spreadsheet version 04/25

Numerical results for this data are contained in the National Bias Adjustment Spreadsheet version 04/25. In 2024, the tube precision for NO_2 Annual Field Inter-Comparison for Gradko International using the 50% TEA in acetone method was 'good' for the results of 11/12 participating local authorities, no participating local authorities were deemed to be 'bad'.

Analysed By	Method	Year	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) ($\mu g/m^3$)	Automatic Monitor Mean Conc. (Cm) ($\mu g/m^3$)	Bias (B)	Tube Precision	Bias Adjustment Factor (A) (Cm/Dm)
Gradko	50% TEA in Acetone	2024	UB	City Of London Corporation	10	26	21	26.8%	G	**0.79**
Gradko	50% TEA in Acetone	2024	R	City Of London Corporation	12	34	30	12.1%	G	**0.89**
Gradko	50% TEA in Acetone	2024	UB	Falkirk Council	11	13	13	-1.6%	G	**1.02**
Gradko	50% TEA in acetone	2024	SU	Redcar And Cleveland Borough Council	12	12	9	35.4%	G	**0.74**
Gradko	50% TEA in acetone	2024	KS	Marylebone Road Intercomparison	11	43	36	20.8%	G	**0.83**
Gradko	50% TEA in acetone	2024	R	Sandwell Mbc	12	30	25	24.2%	G	**0.81**
Gradko	50% TEA in acetone	2024	UB	Sandwell Mbc	12	19	17	8.0%	G	**0.93**
Gradko	50% TEA in acetone	2024	R	Sandwell Mbc	12	20	20	-2.6%	S	**1.03**
Gradko	50% TEA in Acetone	2024	R	London Borough Of Merton	12	27	22	25.7%	G	**0.80**
Gradko	50% TEA in acetone	2024	UB	London Borough Of Wandsworth	10	19	14	31.7%	G	**0.76**
Gradko	50% TEA in acetone	2024	R	London Borough Of Richmond Upon Thames	12	18	19	-9.1%	G	**1.10**
Gradko	50% TEA in acetone	2024	B	London Borough Of Richmond Upon Thames	12	13	13	5.0%	G	**0.95**
Gradko	50% TEA in acetone	2024		**Overall Factor[3] (12 studies)**				**Use**		**0.88**

Schedule of Accreditation issued by United Kingdom Accreditation Service (UKAS)

Gradko is UKAS-accredited for the analysis of NO_2 diffusion tubes, utilising ultra-violet spectrophotometry for the analysis of exposed tubes. The relevant test is outlined in the UKAS Schedule of Accreditation, issued on 23 December 2024 which is provided on the next page.

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

2187

Accredited to ISO/IEC 17025:2017

Gradko International Ltd (Trading as Gradko Environmental)

Issue No: 027 **Issue date:** 23 December 2024

St Martins House
77 Wales Street
Winchester
Hampshire
SO23 0RH

Contact: Mr A Poole
Tel: +44 (0)1962 860331
Fax: +44 (0)1962 841339
E-Mail: diffusion@gradko.co.uk
Website: www.gradko.co.uk

Testing performed at the above address only

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
ATMOSPHERIC POLLUTANTS Collected on diffusion (sorbent) tubes and monitors	Chemical Tests	Documented In-House Methods
	Ammonia as ammonium (NH_4^+)	GLM 8 by Ion Chromatography
	Benzene Toluene Ethyl benzene Xylene	GLM 4 by Thermal Desorption/ FID Gas Chromatography
	Hydrogen chloride as chloride (Cl^-) Nitrogen dioxide as nitrite (NO_2^-) Sulphur dioxide as sulphate (SO_4^{2-}) Hydrogen fluoride as fluoride (F^-)	GLM 3 by Ion Chromatography
	Hydrogen sulphide	GLM 5 by Colorimetric determination (UV Spectrophotometry)
	Ozone as nitrate (NO_3^-)	GLM 2 by Ion Chromatography
	Nitrogen Dioxide as nitrite (NO_2^-)	GLM 7 by Colorimetric determination (UV Spectrophotometry)
	Sulphur dioxide as sulphate (SO_4^{2-})	GLM 1 by Ion Chromatography
	Formaldehyde as formaldehyde-DNPH	GLM 18 by HPLC
	Volatile Organic Compounds including: Benzene Toluene Ethylbenzene p-Xylene o-Xylene	GLM 13 by Thermal Desorption GC-Mass Spectrometry

UKAS TESTING 2187 Accredited to ISO/IEC 17025:2017	**Schedule of Accreditation** issued by **United Kingdom Accreditation Service** 2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK **Gradko International Ltd** **(Trading as Gradko Environmental)** **Issue No:** 027 **Issue date:** 23 December 2024
Testing performed at main address only	

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
ATMOSPHERIC POLLUTANTS Collected on diffusion (sorbent) tubes and monitors (cont'd)	Chemical Tests (cont'd)	
	Qualitative Analysis and Estimation of Volatile Organic Compounds on diffusion (sorbent) tubes and monitors	GLM 13 by Thermal Desorption GC-Mass Spectrometry with estimations in accordance with ISO standard 16000-6
	Naphthalene Tetrachloroethylene Trichloroethylene Styrene 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene Chlorobenzene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene	GLM 13-1 by Thermal Desorption GC-Mass Spectrometry
	1,3-Butadiene	GLM 13-6 by Thermal Desorption GC-Mass Spectrometry
	Carbon Disulphide	GLM 13-7 by Thermal Desorption GC-Mass Spectrometry
	Flexible scope for quantitative analysis of Volatile Organic Compounds on diffusion (sorbent) tubes and monitors in accordance with methods developed and validated by in-house procedure LWI 47	LWI 47 by Thermal Desorption GC-Mass Spectrometry
END		

NO_2 diffusion tube analysis method

NO_2 diffusion tubes are passive monitoring devices composed of a Perspex cylinder, two stainless steel mesh discs, and a polythene cap sealed onto one end of the tube. The discs are coated with a triethanolamine (TEA) absorbent. These tubes operate on the principle of molecular diffusion, where gas molecules move from an area of higher concentration (the open end of the tube) to an area of lower concentration (the absorbent end of the tube) (AEA, 2008). NO_2 diffuses into the tube due to the concentration gradient and is absorbed by the TEA coating on the discs at the sealed end of the tube.

All the London Borough of Merton's NO_2 diffusion tubes are prepared by Gradko using a 50% v/v solution of TEA in acetone as the absorbent. To prevent premature absorption, an opaque polythene cap is placed over the end of the diffusion tube opposite the TEA-coated discs before and after sampling. The tubes are labelled and stored in plastic bags, refrigerated, both prior to and after exposure.

In the laboratory, the steel mesh is removed and washed with distilled water, which is then analysed. The concentration of nitrogen dioxide is determined by passing ultraviolet (UV) light through the water sample. The amount of light absorbed correlates to the concentration of nitrogen dioxide present in the air during the monitoring period.

Factor from Local Co-location Studies

In 2024, the London Borough of Merton conducted a co-location study by placing three NO_2 diffusion tubes (Site IDs 47, 47/2, 47/3) alongside the continuous NO_2 monitoring equipment at the Civic Centre Morden (ME9) roadside site. The co-location study data were submitted to the National Physical Laboratory (NPL) through the questionnaire, allowing the inclusion of our data in the database of bias adjustment factors.

Diffusion Tube Bias Adjustment Factors from Local Co-location Studies

In 2024, the London Borough of Merton conducted a co-location study at one continuous NO_2 monitoring site, using triplicate NO_2 diffusion tubes at the following location: Morden Civic Centre, a roadside site. The annual mean for the Civic Centre diffusion tubes (sites 47, 47/2, 47/3) was 23.9 µg/m³, while the mean for the continuous monitoring station (ME9) was 21.3 µg/m³. The national bias adjustment factor (0.88) was selected to adjust the data.

All data from the London Borough of Merton was submitted on time for the co-location questionnaire and is included in the database of bias adjustment factors (version 04/25).

Discussion of Choice of Factor to Use

The choice of bias adjustment factor was carefully considered. Both local and national bias adjustment factors were available for 2024. The national bias adjustment factor of 0.88 was chosen to correct the diffusion tube data, as it is considered more representative, being based on a larger number of studies (12). Additionally, the national factor is more conservative than the local factor of 0.80.

Table O below shows a history of adjustment factors used in the London borough of Merton from 2017-2024.

Table L. Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	National	04/25	0.88
2023	Local	03/24	0.84
2022	National	03/23	0.82
2021	National	03/22	0.83
2020	National	03/21	0.82
2019	Local	03/20	0.89
2018	National	03/19	0.92
2017	National	03/18	0.97

A.3 Adjustments to the Ratified Monitoring Data

Short-term to Long-term Data Adjustment

It is not always possible to collect data for an entire year to calculate an annual mean for a pollutant. Instrument malfunctions or data quality issues can sometimes result in missing data, preventing the completion of a full year of measurements. For monitoring sites with data capture between 25% and 75% of a full calendar year (i.e., between 3 and 9 months), the mean of the 'raw' concentrations is "annualised" in accordance with Box 4.3 of the LLAQM Technical Guidance (TG19) before being compared to annual mean objectives. However, this was not necessary for any of the London Borough of Merton's non-automatic (diffusion tube) site in 2024, as data capture was sufficiently high to calculate the annual mean directly.

Annualisation was not necessary for the NO_2 automatic monitoring data from the continuous monitor ME9 (Morden Civic Centre), as the data capture was sufficiently high at 99.1%.

Due to equipment failure, the Merton Road PM_{10} continuous monitoring station achieved a data capture rate of 73.1%. As this fell below the 75% threshold, the data was annualised on the LAQN website by selecting three compliant nearby automatic sites for PM_{10}. The output results and corresponding site locations are listed in Table R below. The tool allows this process for any LondonAir measurement site: users can select the measurement site and period to annualise and then choose between two and four nearby background measurement sites to serve as reference points. The tool matches the available data from the site being annualised with measurements from each background site to generate a ratio.

The TG19 guidelines specify the selection of reference sites for annualisation: "Identify two to four nearby, long-term, continuous monitoring sites with a data capture of at least 85%. These sites should be background (Urban Background, Suburban, or Rural) to avoid local effects from Urban Centre, Roadside, or Kerbside sites, and should ideally be within a 50-mile radius." This annualisation tool exclusively selects background sites with at least 85% data capture for the relevant year.

Distance Adjustment

When an exceedance is recorded at a monitoring site that is not representative of public exposure, the procedure outlined in LLAQM.TG(19) to estimate the concentration at the nearest receptor has been applied. Distance correction was performed for four locations where the annual mean exceeded 36 µg/m³. After applying the distance correction, none of the locations exceeded 36 µg/m³ at the receptor, with all four sites falling below 36 µg/m³, within 10% of the Air Quality Standard (AQS).

The results are provided in Table T.

NO_2 diffusion tube results have been adjusted to reflect exposure at the nearest building façade, as required by DEFRA. The concentration at the nearest receptor has been estimated using the LAQM NO_2 Fall-off with Distance Calculator (Version 4.2), following the procedure outlined in LLAQM.TG (19). This methodology involves comparing the monitored annual mean NO_2 concentrations at a specific location with established relationships between NO_2 concentrations and the distance from a road source. The annual mean values used in the calculation are derived from the background diffusion tube site ID31, Charminster Avenue, in accordance with LLAQM (TG19) guidance.

Table M. Automatic PM_{10} Monitoring Data Adjustment

Background Site	Annual Data Capture (%)	Annual Mean (A_m)	ME2		-		-		-	
			Period Mean (P_m)	Ratio (A_m / P_m)	Period Mean (P_m)	Ratio (A_m / P_m)	Period Mean (P_m)	Ratio (A_m / P_m)	Period Mean (P_m)	Ratio (A_m / P_m)
IS6 – Islington Arsenal	93.0	15.3	15.5	0.984	-	-	-	-	-	-
WA9 – Wandsworth Putney	94.6	13.9	14.0	0.992	-	-	-	-	-	-
RI1 – Richmond Castlenau	99.2	15.8	15.9	0.996	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
Average (R_a)			0.991		-		-		-	
Raw Data Annual Mean (M)			21.0		-		-		-	
Annualised Annual Mean (M x R_a)			20.8		-		-		-	

Table N. 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
18	0.3	2.9	41.7	11.7	30.7	
22	2.0	6.2	39.0	11.7	31.8	
29	0.7	3.3	37.4	11.7	29.9	
54	2.4	4.4	36.3	11.7	32.6	

Appendix B Full Monthly Diffusion Tube Results for 2024

Table O. NO_2 2024 Diffusion Tube Results (µg m^{-3})

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 (0.88)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
1	523139	169056	39.0	32.7	34.3	24.2		25.3	28.2	18.2	29.1	32.2	33.3	24.6	29.2	25.7		
2	524489	166637	27.4	17.0	23.3	14.5	17.5	14.1	18.0			21.0	29.6	18.9	20.1	17.7		
4	523315	168048	25.7	18.1	22.3	16.0	17.9	16.9	19.4	13.3	23.5	22.6	29.2	19.5	20.4	17.9		
5	522501	168235	34.7	29.4	28.2	23.0	25.7	22.9	24.1	18.9	28.1	27.5	33.6	21.6	26.5	23.3		
6	523207	169195	36.9	28.4	33.5	21.6	23.4	20.5	23.7	16.1	23.6	27.8	32.3	22.2	25.8	22.7		
7	524401	169351	30.4	25.9	29.3		25.4	20.5			28.1	25.4	30.2	24.3	26.6	23.4		
8	523246	169333	33.7	26.4	29.4	28.8	35.0	30.2	33.8	27.0	38.7	36.9	**41.8**	28.2	32.5	28.6		
9	523203	169369	37.6	31.7	36.1	26.1	34.2	26.5	32.6	24.8	37.6	38.8	39.7	24.7	32.5	28.6		
11	525602	170042	31.6	20.9	18.1	15.3	21.5	16.0	18.8	14.1	22.6	27.0	28.5	18.6	21.1	18.6		
13	523181	170264	29.1	20.3	30.3	22.3	26.5	20.7	25.8	22.3	25.4	36.1	35.7	23.2	26.5	23.3		
14	524111	170879	28.3	21.2	26.4	24.0	31.6	26.5	31.8	23.8	36.1	27.2	35.4	26.9	28.3	24.9		
16	524067	171074	29.1	22.2	30.1	20.3	30.0	20.6	29.3	17.2	25.2	29.3	34.0	20.7	25.7	22.6		
18	524696	170725	**51.6**	**43.1**	**52.7**	**45.2**	**49.7**	**46.2**	**52.9**	38.4	**57.2**	**44.9**		39.9	**47.4**	**41.7**	30.7	
19	524770	170645	37.5	30.2	39.6	30.9	36.3	28.5			37.7	38.1		28.2	34.1	30.0		
20	524867	170500		30.3	35.8	22.6	36.9	28.2	36.4	22.9	35.8	38.7		27.9	31.6	27.8		
21	525798	170081	**44.7**		**50.0**	37.1	**43.5**	35.3	39.6	25.9	**44.2**	39.9	**42.7**	30.7	39.4	34.7		
22	527756	168993	**50.9**	**49.2**	**49.8**	**50.6**	**46.2**	37.8	**45.9**	37.6	39.3	**45.5**	**43.0**	36.3	**44.3**	39.0	31.8	
23	525156	169935	**44.4**	34.8	**40.5**	34.4	31.0	28.8	33.5	23.3	36.8	33.3	37.9	31.7	34.2	30.1		
24	524994	170329	25.0	20.2	22.3	16.8	20.2	16.6	18.1	10.6	21.6	23.8	29.7	21.9	20.6	18.1		
25	525104	171125	32.5	24.1	26.8	25.7	29.2		27.5	20.5		28.4	34.8	26.7	27.6	24.3		
26	525708	171413	33.8	28.7	31.1	23.6	30.1	21.0	29.5	22.1	30.1	31.5	32.9	26.9	28.4	25.0		
27	526035	171472	28.9	31.7	26.9	26.2	28.4	26.4	30.1	23.4	32.1	29.7	26.7	25.2	28.0	24.6		

28	526158	170167	34.1	26.9	38.3	26.8	35.5	25.7	31.4	22.5	36.9	36.2	38.1	28.1	31.7	27.9		
29	526792	170376	**49.1**	39.6	**47.8**		**46.8**	35.7			**44.1**	39.4	**46.0**	34.2	**42.5**	37.4	29.9	
30	526791	170087	**40.9**	35.1	**40.5**		34.0	30.3	35.8	26.0	36.6	34.1	38.4	30.3	34.7	30.6		
31	525452	169137	16.9	10.8	14.0	8.4	11.8	8.0	10.1	7.2	12.5	15.4	22.8	22.3	13.3	11.7		
32	526138	169825	33.8	26.4	30.4	26.2	30.5	26.1		18.5	32.5	27.6	33.2	29.4	28.6	25.2		
33	525803	169467	36.1	29.5	30.0		30.7			19.0	29.2	32.0	35.9	25.5	29.8	26.2		
34	526840	169694			38.7	29.4	30.7	27.0	32.7	24.5	28.2	32.8		29.5	30.4	26.7		
35	527621	169646	25.1	17.6	21.2	18.7	18.9	14.3	15.9	13.0	23.2	22.5	27.1	21.4	19.9	17.5		
36	527915	170518	28.2	27.1	26.8	25.4	30.0	20.8	27.8	20.6	27.3	17.3	34.0	25.0	25.8	22.7		
37	527935	169502	**43.6**	31.2	**42.2**	30.8	25.5	29.5	**41.1**	26.2	38.0	38.5	**41.2**	32.3	35.0	30.8		
38	527738	168863	**40.7**	33.5	36.6	34.8	**40.4**	36.1		31.1	**42.0**	35.5	**42.8**	30.5	36.7	32.3		
39	527158	168646	36.1	23.8	32.6	31.3	32.6	28.3	35.7	25.8	38.0	37.1	**40.3**	27.2	32.4	28.5		
40	527370	168312	39.1	28.1	31.9	31.8	29.6	28.0	34.1	23.3	36.0	34.1	**42.1**	27.4	32.1	28.3		
41	526395	168172	33.2	24.3	26.1	24.7	24.9	22.1	28.1	20.5	32.5	30.8	32.9		27.3	24.0		
42	526210	167683	34.8	23.9	30.5	24.2	30.9	23.7	25.2	15.3				17.4	25.1	22.1		
43	526151	168293	39.4	25.6	36.1	29.1	38.0	25.3	30.7	19.6	31.9	29.0	36.3	22.0	30.2	26.6		
44	525817	168643	38.3	33.1	**42.7**	28.2	32.9	26.7	37.5	25.5	32.5	35.5	33.7	31.9	33.2	29.2		
45	525778	169824	34.4	22.2	23.0	23.9	30.3	23.9	26.1	17.0	29.0	27.8	33.0	25.6	26.3	23.2		
46	525435	168499	32.3	29.4	31.6	26.2		23.8	32.1	20.8	30.3	32.6	33.9	25.4	28.9	25.5		
47	525588	168498	31.2	23.8	27.0	18.7	28.1	25.9	29.9	22.6	27.9	30.7	34.2	20.8	-	-		Triplicate Site with 47, 47/2 and 47/3 - Annual data provided for 47/3 only
47/2	525588	168498		25.7	28.4		26.8	23.3	33.7	21.5	24.1				-	-		Triplicate Site with 47, 47/2 and 47/3 - Annual data provided for 47/3 only
47/3	525588	168498		29.8	31.2		32.5	21.9	31.9	19.8	29.8	32.5	34.5	23.2	27.2	23.9		Triplicate Site with 47, 47/2 and 47/3 - Annual data provided for 47/3 only
48	525757	168509	29.4	23.1	26.7	19.5	27.6	20.6	24.2	15.4	26.7	23.9	31.5	21.9	24.2	21.3		
49	525500	168470	23.5	20.7	22.2	17.5	22.8		21.6	13.4	22.5	25.3	30.0	19.1	21.7	19.1		
50	525638	168616	33.0	20.1	25.7		25.3	17.7	24.2	14.6	23.8	24.6	32.9	27.1	24.5	21.5		
51	528219	169782	35.1		28.6	22.4		21.7	27.8		29.3	30.4	32.0	24.5	28.0	24.6		
52	522749	168500	25.2	24.5	27.0	19.4	22.7	20.5	23.3	15.4	23.5	27.4	29.6	22.2	23.4	20.6		
53	524621	166786		25.0	29.3	20.7	22.2	21.0	24.2		24.7	28.6	31.3	22.2	24.9	21.9		
54	527890	168920	**42.4**	40.0	**42.0**	**50.6**		37.9	**43.4**	30.5	**48.8**	**40.9**	**45.6**	31.4	**41.2**	36.3	32.6	

55	529661	168839	40.0	33.1		36.0	36.9			30.7	**47.3**	35.1	**46.5**	34.3	37.8	33.2		
56	525875	171682	23.6	22.3	23.2	15.2	21.2	16.0	20.1	12.6	21.1	25.6	32.5	13.8	20.6	18.1		
57	525396	172558	32.2	19.3	25.4	19.1	25.6	17.4	22.8	14.1	25.7	29.4	32.2	19.9	23.6	20.8		
S01	525941	169866		18.6	18.0	13.7	15.9	12.1	13.4	12.3	16.2	7.7	25.7	19.3	15.7	13.8		
S4B	526136	170328	33.8	26.7	36.5		30.1	25.7	30.5	26.5	34.7	35.6		28.2	30.8	27.1		
S12	527639	168362	34.8			17.8	23.7	22.1	19.8		27.8	29.7	29.6	17.7	24.8	21.8		
S36B	525815	169235	27.1	25.1	26.0	23.4	25.0	25.3	24.2	21.0	29.1	26.6	33.3	23.7	25.8	22.7		
S49B	522509	168640	36.5	36.9	33.6	29.7	30.9	28.2	29.4	25.5	33.0		31.4	25.0	30.9	27.2		
S51	525093	167325	26.5	19.2	20.9	14.0	16.9	14.8	14.7	14.5	20.5	22.7	27.3	16.4	19.0	16.7		
S63	524505	170891	36.9	29.8	35.2	30.7	37.5	34.6	39.1	31.7	35.5	24.9	36.6	31.2	33.6	29.6		
S67	527552	169099	34.6	31.6	33.3	26.2	29.7	20.9	24.7	17.1		31.8	31.1	27.9	28.1	24.7		
S68	527831	169253	**44.1**	37.0	37.6	34.1	31.9	30.2	33.3	29.1	39.3	36.0	**41.7**	31.0	35.5	31.2		
S69	527947	168855	**40.8**	30.4	32.2	36.6	35.6	31.8	27.5	25.8	34.5	34.1	38.1	33.0	33.4	29.4		

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

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

☐ **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 Merton confirm that all 2024 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System**.

Notes:

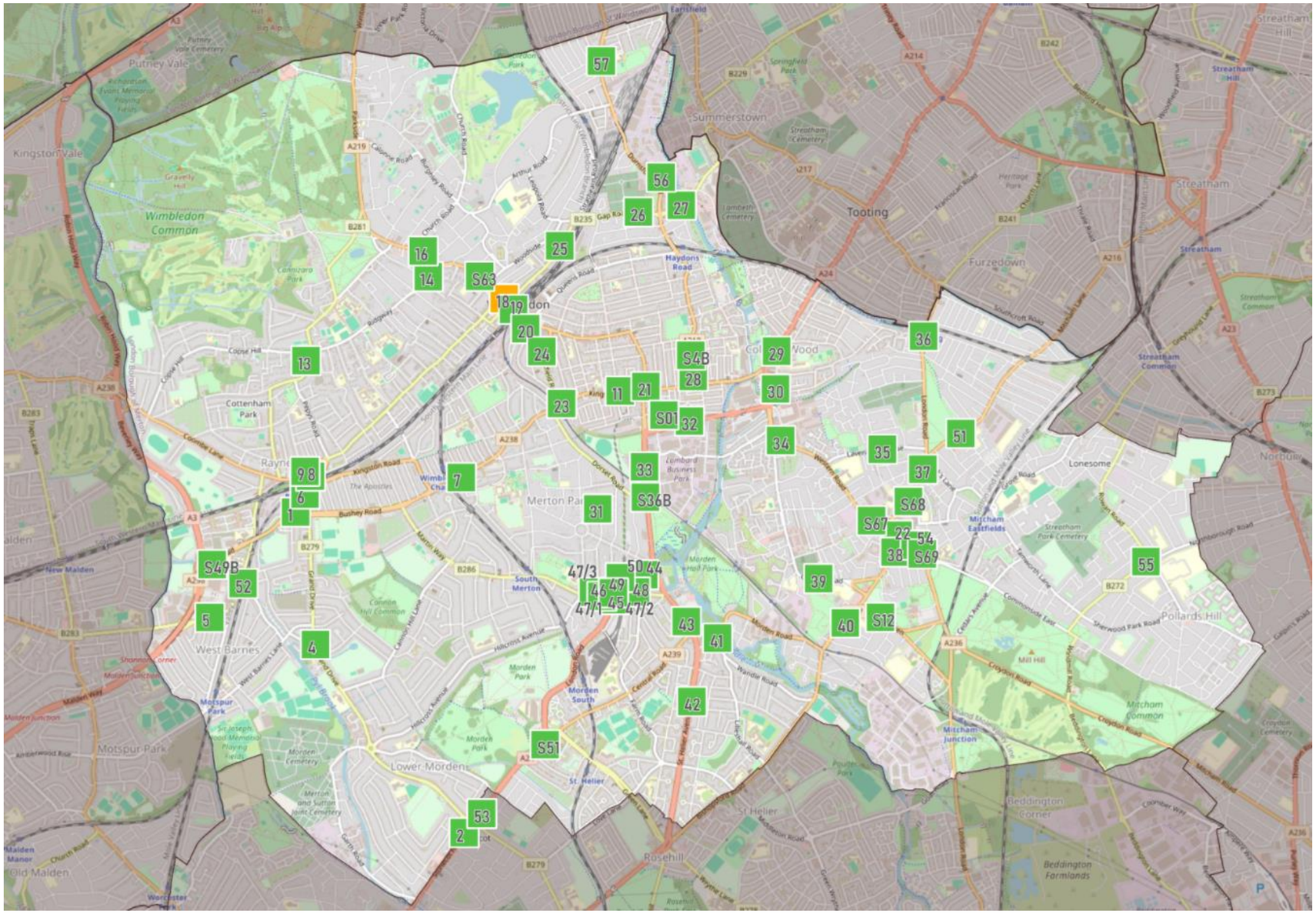
Exceedances of the NO_2 annual mean objective of 40µg m^{-3} are shown in **bold**.

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**.

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) in London Borough of Merton 2024



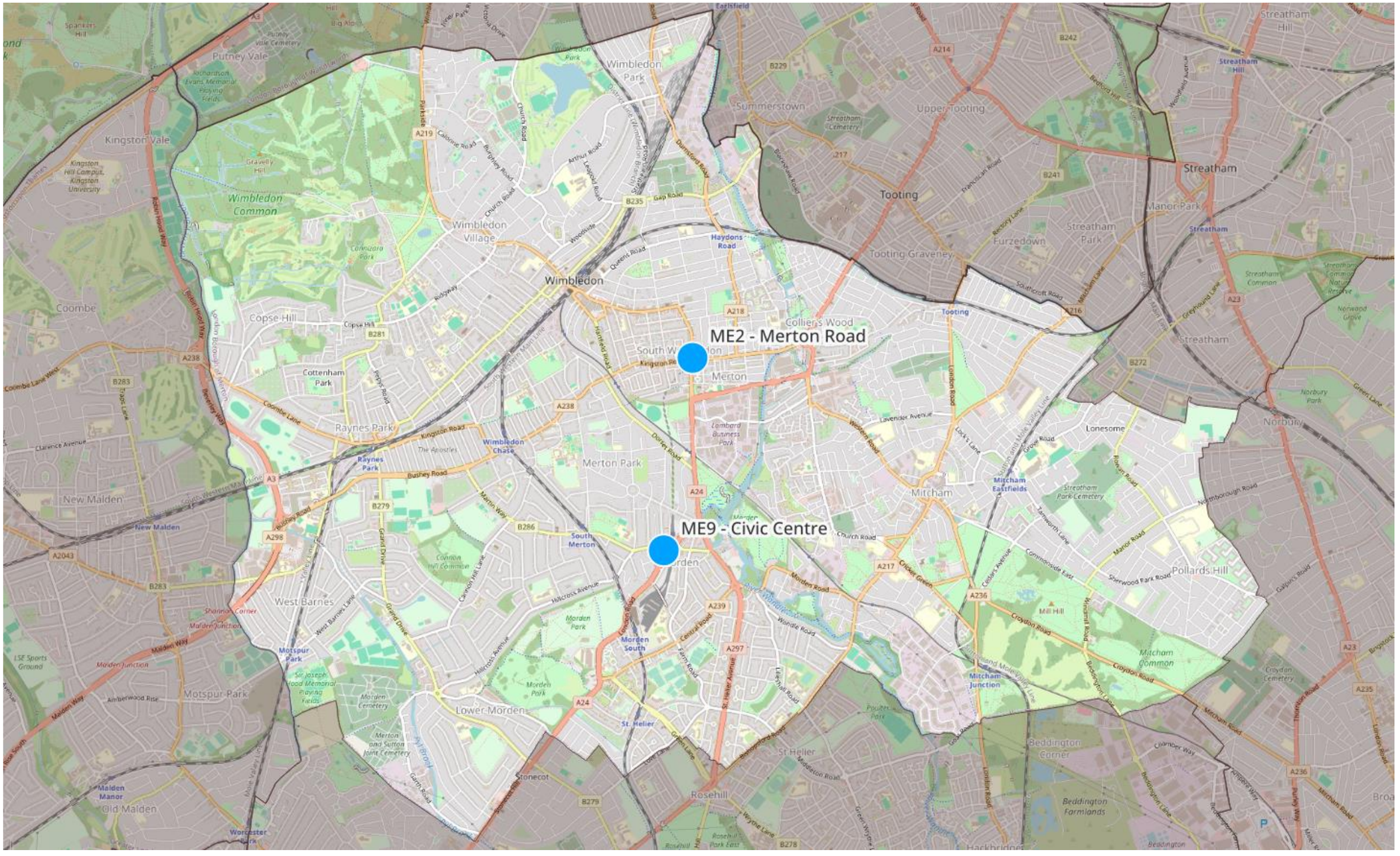
Legend

Compliant site:
Annual mean NO_2 below 40 µg/m^3

Non-compliant site:
Annual mean NO_2 above 40 µg/m^3 but below 60 µg/m^3

The following link is to the interactive maps displaying annual mean NO_2 diffusion tube monitoring data from 2017 to 2024 https://swlonrsp.github.io/LBM_Map_NO2_2017_2024_DT_BL.html

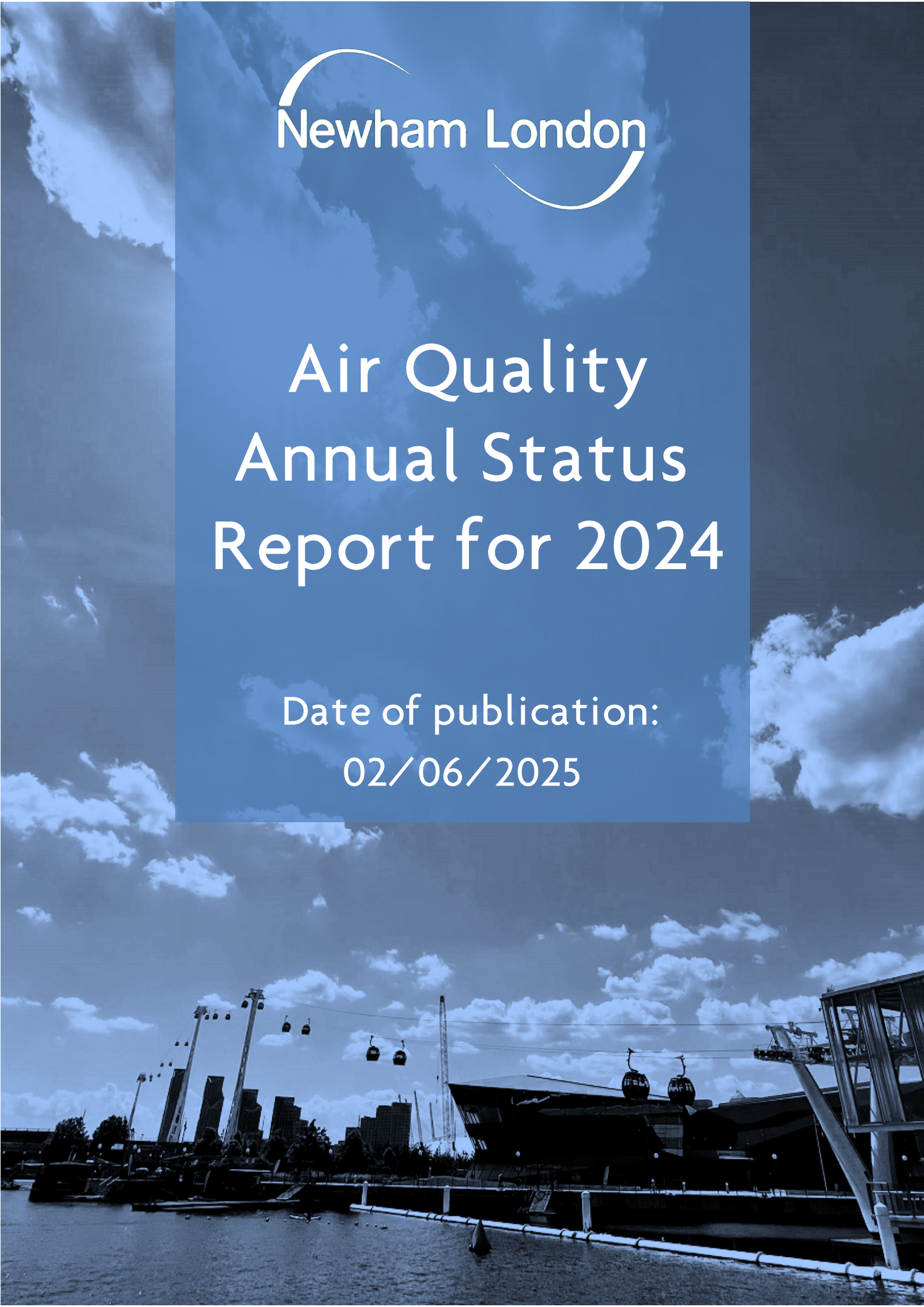
Figure B. Map of Automatic Monitoring Site(s) in London Borough Merton 2024



Newham London

Air Quality Annual Status Report for 2024

Date of publication:
02/06/2025



This report provides a detailed overview of air quality in Newham during 2024. It has been produced to meet the requirements of the London Local Air Quality Management (LLAQM) statutory process[1].

Contact details:

- Pollution Control Team Pollution.Enquiry@newham.gov.uk
- [redacted]@newham.gov.uk
- [redacted]@newham.gov.uk
- [redacted]@newham.gov.uk
- [redacted]@Newham.gov.uk

[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
	40 µg m^{-3}	Annual mean	31 Dec 2005
	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
	WHO AQG[2]: 45 µg m^{-3} not to be exceeded more than 3-4 times a year	24-hour mean	-
	40 µg m^{-3}	Annual mean	31 Dec 2004
	WHO AQG[2]: 15 µg m^{-3}	Annual mean	-
Particles ($PM_{2.5}$)	20 µg m^{-3}	Annual mean	2020
	London Mayoral Objective[3]: 10 µg m^{-3}	Annual mean	2030
	WHO AQG[2]: 5 µg m^{-3}	Annual mean	-
	Target of 15% reduction in concentration at urban background locations	3-year mean	Between 2010 and 2021
	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

1.1 Locations

Table B. Details of Automatic Monitoring Sites for 2024

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	AQMA	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
NM2	Cam Rd	Roadside	538661	183969	NO_2, $PM_{2.}$, PM_{10}	AQMA No.2	T200 Chemi-luminescent, BAM	25	9	3.0
NM3	Wren Close	Urban Background	539889	181469	NO_2, $PM_{2.5}$, PM_{10}	AQMA No.2	T200 Chemi-luminescent, BAM	14	190 (A13)	3.0
TL5	Hoola Tower	Roadside	539934	180810	NO_2	AQMA No.2	Chemi-luminescence	15	3	1.5
TL6	Britannia Gate	Roadside	540324	180253	$PM_{2.5}$	AQMA No.2	Chemi-luminescence, BAM	13	7	1.4
NM4	East Ham Town Hall	Roadside	542637	183573	NO_2, $PM_{2.5}$	AQMA No.2	T200 Chemi-luminescent, BAM	25	5	1.5
BLN1	Alma Street	Roadside	538745	184982	NO_2, $PM_{2.5}$	AQMA No.2	Electro chemical, light scatter	0	6	2.5
BLN2	Ellen Wilkinson	Urban Background	542024	181692	NO_2, $PM_{2.5}$	AQMA No.2	Electro chemical, light scatter	8	13	2.5
BLN3	Central Park	Roadside	542168	183159	NO_2, $PM_{2.5}$	AQMA No.2	Electro chemical, light scatter	2	0.2	2
BLN4	Newham University	Roadside	541202	182442	NO_2, $PM_{2.5}$	AQMA No.2	Electro chemical, light scatter	16	70	4
BLN5	Silvertown	Roadside	539512	181359	NO_2, $PM_{2.5}$	AQMA No.2	Electro chemical, light scatter	18	0.2	3
ND	Newham Dockside	Urban Background	542298	180709	NO_2	AQMA No.2	M200E TAPI Chemi-luminescence	413	N/A	1.2
KGV	King George V House	Urban Background	542950	180215	NO_2, $PM_{2.5}$, PM_{10}	AQMA No.2	T200 Chemi-luminescent, Palas FIDAS 200	80	N/A	1.2

Notes: 0m if the monitoring site is at location of exposure (e.g. installed on the façade of a residential property). N/A not applicable

Table C. Details of Non-Automatic Monitoring Sites for 2024

Site ID	Site Name	Site Type	X (m)	Y (m)	Pollutants monitored	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)
NHM-1	Temple Mill Lane	Urban Background	538280	185359	NO_2	Newham AQMA no 2	60.0	0.3	N	2.3
NHM-2	o/s Salisbury School, Romford Rd	Urban Background	539570	184659	NO_2	Newham AQMA no 2	0.0	12.0	N	1.8
NHM-3	Fire Station Romford Rd	Roadside	539572	184659	NO_2	Newham AQMA no 2	1.0	5.0	N	2.6
NHM-4	Wellington Rd/ Barking Rd Junct	Roadside	542831	183618	NO_2	Newham AQMA no 2	0.0	5.0	N	2.3
NHM-6	230B Grange Rd	Urban background	539859	182655	NO_2	Newham AQMA no 2	0.0	30.0	N	1.5
NHM-7	General Hospital, Glen Rd	Urban background	541492	182332	NO_2	Newham AQMA no 2	6.0	2.0	N	1.5
NHM-8	High St South East Ham Mortuary	Urban Background	542688	183202	NO_2	Newham AQMA no 2	0.0	15.0	N	1.5
NHM-10	Tant Avenue	Urban background	539747	181477	NO_2	Newham AQMA no 2	0.0	32.0	N	1.5
NHM-11	Hallsville Rd	Kerbside	539623	181230	NO_2	Newham AQMA no 2	3.0	1.0	N	3.0
NHM-12	Galleons Roundabout	Urban background	543762	180784	NO_2	Newham AQMA no 2	0.0	12.0	N	2.8
NHM-13	290-292 Green Street	Kerbside	541134	184098	NO_2	Newham AQMA no 2	5.0	1.0	N	2
NHM-16	Opposite 99 Leytonstone Rd	Kerbside	539164	185158	NO_2	Newham AQMA no 2	2.0	0.5	N	2.5
NHM-17	44 Browning Rd	Kerbside	542729	185047	NO_2	Newham AQMA no 2	1.0	2.0	N	3.5
NHM-19	Beckton Arms, Newham Way	Kerbside	539906	18170	NO_2	Newham AQMA no 2	6.0	1.0	N	2.4

Site ID	Site Name	Site Type	X (m)	Y (m)	Pollutants monitored	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)
NHM-20	Canning Town Roundabout	Roadside	539456	181499	NO_2	Newham AQMA no 2	16.0	8.0	N	1.5
NHM-21	Cam Rd	Roadside	538657	183973	NO_2	Newham AQMA no 2	0.0	12.0	Y	3
NHM-24	Plashet School North	Roadside	542242	184354	NO_2	Newham AQMA no 2	1.0	2.5	N	2
NHM-25	Plashet School South	Roadside	542242	184354	NO_2	Newham AQMA no 2	5.0	2.5	N	1
NHM-26	Major Road, E15	Kerbside	538478	185444	NO_2	Newham AQMA no 2	3.0	0.5	N	3
LCA01	Parker Road	Urban Background	542154	180286	NO_2	Newham AQMA no 2	12	N/A	N	2
LCA02	Camel Road	Roadside	541941	180303	NO_2	Newham AQMA no 2	3	1	N	2
LCA04	Newham Dockside east	Urban Background	542267	180710	NO_2	Newham AQMA no 2	430	N/A	N	1.2
LCA05	Strait Road	Roadside	542928	180911	NO_2	Newham AQMA no 2	6	1	N	2.8
LCA06	Gallions Way	Roadside	543724	180867	NO_2	Newham AQMA no 2	7	12	N	2.6
LCA07	Landing Lights	Other	543667	180461	NO_2	Newham AQMA no 2	183	N/A	N	
LCA09	City Aviation House	Roadside	542520	180190	NO_2	Newham AQMA no 2	40	N/A	Y	20
LCA10	Jet Centre	Other	541760	180424	NO_2	Newham AQMA no 2	220	N/A	N	
LCA11	University of East London	Urban Background	543570	180690	NO_2	Newham AQMA no 2	25	N/A	N	2.4

Site ID	Site Name	Site Type	X (m)	Y (m)	Pollutants monitored	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)
LCA12	North side of runway	Other	542192	180562	NO_2	Newham AQMA no 2	265	N/A	N	
LCA13	Newham Dockside NW	Urban Background	542274	180768	NO_2	Newham AQMA no 2	355	N/A	N	2.9
LCA14	Newham Dockside W	Urban Background	542066	180716	NO_2	Newham AQMA no 2	340	N/A	N	1.9
LCA15	Royal Albert Way	Roadside	542300	180862	NO_2	Newham AQMA no 2	200	N/A	N	1.9
LCA18	Newham Dockside triplicate	Urban Background	542267	180710	NO_2	Newham AQMA no 2	430	N/A	Y	1.2
LCA20	Silvertown Quay	Roadside	541634	180365	NO_2	Newham AQMA no 2	225	N/A	N	1.9
LCA21	Lamp post on Brixham Street	Roadside	543100	180132	NO_2	Newham AQMA no 2		N/A	N	
NHM-S 1	Salisbury Primary School	Roadside	542089	185416	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 2	Avenue Primary School	Urban background	542319	185428	NO_2	Newham AQMA no 2	10.0	1.0	N	2.5
NHM-S 3	Sir John Heron Primary School	Urban background	542564	185642	NO_2	Newham AQMA no 2	0.0	11.0	N	2.5
NHM-S 4	Sheringham Primary School	Urban Background	542922	185830	NO_2	Newham AQMA no 2	3.0	1.0	N	2.5
NHM-S 5	Susan Lawrence Nursery	Urban Background	543086	185713	NO_2	Newham AQMA no 2	3.0	1.0	N	2.5
NHM-S 6	Dersingham Primary School	Urban background	543086	185713	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 7	St Winefride's RC Primary School	Kerbside	542880	185321	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5

Site ID	Site Name	Site Type	X (m)	Y (m)	Pollutants monitored	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)
NHM-S 8	Little Ilford School	Kerbside	542734	185179	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 9	Essex Primary School	Urban background	542549	185070	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 10	Kensington Primary School	Urban Background	542701	184632	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 11	Plashet School	Kerbside	542277	184357	NO_2	Newham AQMA no 2	4.0	1.0	N	2.5
NHM-S 12	William Davies Primary School	Urban background	541681	184582	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 13	Monega Primary School	Urban Background	541797	184904	NO_2	Newham AQMA no 2	3.0	1.0	N	2.5
NHM-S 14	Shrewsbury Nursery	Urban background	541562	185194	NO_2	Newham AQMA no 2	1.0	3.0	N	2.5
NHM-S 15	Sandringham Primary School	Urban Background	541172	185041	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 16	Shaftesbury Primary School	Urban Background	541368	184294	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 17	St Stephen's Nursery School	Urban background	541543	184112	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 18	Cleves Primary School	Urban background	541828	183772	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 19	Hartley Primary School	Urban Background	542253	183708	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 20	Lathom Junior School	Urban background	542492	184111	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 21	Altmore Infant School	Urban background	542831	183954	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5

Site ID	Site Name	Site Type	X (m)	Y (m)	Pollutants monitored	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)
NHM-S 22	Langdon Academy	Urban background	543501	183538	NO_2	Newham AQMA no 2	0.0	5.0	N	2.5
NHM-S 23	Nelson Primary School	Urban background	543143	183468	NO_2	Newham AQMA no 2	1.0	2.5	N	2.5
NHM-S 24	St Michael's Catholic Primary School	Urban Background	542827	183286	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 25	Oliver Thomas Children's Centre	Urban Background	543279	183097	NO_2	Newham AQMA no 2	2.5	1.0	N	2.5
NHM-S 26	Vicarage Primary School	Urban background	542858	182778	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 27	Roman Road Primary School	Urban background	542858	182778	NO_2	Newham AQMA no 2	1.0	2.5	N	2.5
NHM-S 28	Brampton Manor Academy	Urban Background	541628	182342	NO_2	Newham AQMA no 2	6.0	1.0	N	2.5
NHM-S 29	Central Park Primary School	Roadside	541919	183099	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 30	St Edward's Catholic Primary School	Roadside	541384	183505	NO_2	Newham AQMA no 2	3.0	1.0	N	2.5
NHM-S 31	Selwyn Primary School	Urban background	540494	183908	NO_2	Newham AQMA no 2	-5.0	9.0	N	2.5
NHM-S 32	Upton Cross Primary School	Urban Background	540915	183744	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 33	St Antony's Catholic Primary School	Urban Background	540502	184400	NO_2	Newham AQMA no 2	0.0	2.0	N	2.5
NHM-S 34	Stratford School Academy	Roadside	540391	184416	NO_2	Newham AQMA no 2	1.0	2.5	N	2.5
NHM-S 35	Elmhurst Primary School	Urban Background	540811	184261	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5

Site ID	Site Name	Site Type	X (m)	Y (m)	Pollutants monitored	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)
NHM-S 36	St Bonaventure's RC School	Urban background	540592	184162	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 37	St Angela's Ursuline School	Urban background	540665	184510	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 38	Park Primary School	Urban Background	539849	184421	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 39	Earlham Primary School	Urban Background	540001	185106	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 40	Kay Rowe Nursery School	Urban background	540595	185247	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 41	Woodgrange Infant School	Urban background	540764	185503	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 42	Godwin Junior School	Urban background	540838	185646	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 43	Forest Gate Community School	Urban background	540359	185338	NO_2	Newham AQMA no 2	3.0	1.0	N	2.5
NHM-S 44	Odessa Infant School	Urban background	540099	185343	NO_2	Newham AQMA no 2	1.0	2.5	N	2.5
NHM-S 45	St James' C of E Junior School	Urban Background	540011	185274	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 46	Maryland Primary School	Urban Background	539326	185305	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 47	Colegrave Primary School	Urban background	538857	185210	NO_2	Newham AQMA no 2	1.0	2.5	N	2.5
NHM-S 48	Education Links	Urban background	538856	185408	NO_2	Newham AQMA no 2	55.0	2.0	N	2.5
NHM-S 49	Ronald Openshaw Nursery School	Urban Background	538715	185203	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5

Site ID	Site Name	Site Type	X (m)	Y (m)	Pollutants monitored	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)
NHM-S 50	Chobham Academy	Urban background	538263	185253	NO_2	Newham AQMA no 2	0.0	32.0	N	2.5
NHM-S 51	Bobby Moore Academy (primary)	Urban background	537439	184122	NO_2	Newham AQMA no 2	5.0	2.0	N	2.5
NHM-S 52	Bobby Moore Academy (secondary)	Urban background	537836	183828	NO_2	Newham AQMA no 2	1.0	1.0	N	2.5
NHM-S 53	John F Kennedy Special School	Urban background	538984	184024	NO_2	Newham AQMA no 2	6.0	1.0	N	2.5
NHM-S 54	School 21	Urban Background	538964	184062	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 55	Sarah Bonnell School	Urban background	539379	184683	NO_2	Newham AQMA no 2	1.0	2.5	N	2.5
NHM-S 56	West Ham Church Primary School	Kerbside	539469	183937	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 57	Portway Primary School	Urban Background	539955	183624	NO_2	Newham AQMA no 2	4.0	1.0	N	2.5
NHM-S 58	Ranelagh Primary School	Urban Background	539444	183264	NO_2	Newham AQMA no 2	2.5	1.0	N	2.5
NHM-S 59	Manor Primary School	Urban Background	539265	183375	NO_2	Newham AQMA no 2	2.5	1.0	N	2.5
NHM-S 60	East London Science School	Urban background	538336	182808	NO_2	Newham AQMA no 2	2.5	112.0	N	2.5
NHM-S 61	Abbey Lane Children's Centre	Roadside	538373	183461	NO_2	Newham AQMA no 2	4.5	1.0	N	2.5
NHM-S 62	Carpenters Primary School	Roadside	538455	183877	NO_2	Newham AQMA no 2	3.0	5.0	N	2.5
NHM-S 63	Curwen Primary School	Urban Background	540193	183176	NO_2	Newham AQMA no 2	5.0	1.0	N	2.5

Site ID	Site Name	Site Type	X (m)	Y (m)	Pollutants monitored	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)
NHM-S 64	Eleanor Smith School	Urban background	540581	183217	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 65	Lister Community School	Urban background	540793	183493	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 66	Plaistow Primary School	Urban background	540813	183333	NO_2	Newham AQMA no 2	0.0	8.0	N	2.5
NHM-S 67	Southern Road Primary School	Urban Background	540944	183245	NO_2	Newham AQMA no 2	1.0	3.0	N	2.5
NHM-S 68	Tollgate Primary School	Urban background	541216	182059	NO_2	Newham AQMA no 2	1.0	2.0	N	2.5
NHM-S 69	The Cumberland School	Urban Background	541272	182349	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 70	Brampton Primary School	Urban background	541989	182568	NO_2	Newham AQMA no 2	1.0	2.5	N	2.5
NHM-S 71	New City Primary School	Urban background	541501	182588	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 72	Tunmarsh School	Urban background	541094	182694	NO_2	Newham AQMA no 2	3.0	1.0	N	2.5
NHM-S 73	Gainsborough Primary School	Urban Background	539258	182560	NO_2	Newham AQMA no 2	2.5	1.0	N	2.5
NHM-S 74	Star Primary School	Urban background	539315	182104	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 75	Eastlea Community School	Urban background	539561	182374	NO_2	Newham AQMA no 2	5.0	3.0	N	2.5
NHM-S 76	Grange Primary School	Urban background	539983	182470	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 77	St Helen's Catholic Primary School	Urban Background	540108	182314	NO_2	Newham AQMA no 2	1.5	1.0	N	2.5

Site ID	Site Name	Site Type	X (m)	Y (m)	Pollutants monitored	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)
NHM-S 78	Kaizen Primary School	Urban Background	540701	182157	NO_2	Newham AQMA no 2	7.0	2.5	N	2.5
NHM-S 79	Ravenscroft Primary School	Urban Background	540443	182132	NO_2	Newham AQMA no 2	2.5	1.0	N	2.5
NHM-S 80	Rokeby School	Roadside	539893	181888	NO_2	Newham AQMA no 2	0.0	8.0	N	2.5
NHM-S 81	St Luke's Primary School	Urban background	539842	181328	NO_2	Newham AQMA no 2	0.0	2.5	N	2.5
NHM-S 82	Hallsville Primary School	Urban Background	540113	181170	NO_2	Newham AQMA no 2	1.0	2.0	N	2.5
NHM-S 83	Keir Hardie Primary School	Urban background	540275	181638	NO_2	Newham AQMA no 2	3.0	1.0	N	2.5
NHM-S 84	Rosetta Primary School	Urban background	540855	181595	NO_2	Newham AQMA no 2	0.0	115.0	N	2.5
NHM-S 85	Edith Kerrison Nursery School	Urban Background	540742	181507	NO_2	Newham AQMA no 2	1.0	2.0	N	2.5
NHM-S 86	St Joachim's Catholic Primary School	Urban background	540961	181074	NO_2	Newham AQMA no 2	0.0	3.0	N	2.5
NHM-S 87	Britannia Village Primary	Urban background	540676	180279	NO_2	Newham AQMA no 2	1.0	3.0	N	2.5
NHM-S 88	New Directions	Urban Background	543536	180065	NO_2	Newham AQMA no 2	2.5	1.0	N	2.5
NHM-S 89	Oasis Academy Silvertown	Urban background	543202	180069	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 90	Drew Primary School	Urban background	542197	180233	NO_2	Newham AQMA no 2	0.0	2.5	N	2.5
NHM-S 91	Royal Docks Academy	Urban background	541233	181069	NO_2	Newham AQMA no 2	5.0	0.5	N	2.5

Site ID	Site Name	Site Type	X (m)	Y (m)	Pollutants monitored	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)
NHM-S 92	Calverton Primary School	Urban Background	541712	181187	NO_2	Newham AQMA no 2	1.0	1.0	N	2.5
NHM-S 93	Scott Wilkie Primary School	Urban Background	541504	181370	NO_2	Newham AQMA no 2	0.0	60.0	N	2.5
NHM-S 94	Ellen Wilkinson Primary School	Urban background	542061	181645	NO_2	Newham AQMA no 2	3.0	2.0	N	2.5
NHM-S 95	Beckton & Royal Docks Children's Ctr.	Urban background	541928	181706	NO_2	Newham AQMA no 2	2.0	1.0	N	2.5
NHM-S 96	Kingsford Community School	Urban Background	542603	181523	NO_2	Newham AQMA no 2	0.0	20.0	N	2.5
NHM-S 97	North Beckton Primary School	Urban background	542805	181812	NO_2	Newham AQMA no 2	3.5	1.0	N	2.5
NHM-S 98	Gallions Primary School	Urban background	543635	181422	NO_2	Newham AQMA no 2	30.0	2.0	N	2.5
NHM-S 99	Winsor Primary School	Urban background	543208	181147	NO_2	Newham AQMA no 2	5.5	1.0	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

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period %(a)	Valid data capture 2024 %(b)	2018	2019	2020	2021	2022	2023	2024
NM2	538661	183969	Roadside	99.2	99.2	29	29	24	23	24	21	20.2
NM3	539889	181469	Urban Background	97.6	97.6	28	28	20	21	22	20	16.7
NM4	542637	183573	Roadside	98.7	98.7						33	30.5
TL5	539934	180810	Roadside	83.7	81.9				22	23	21	18.6
TL6	540324	180253	Roadside	75.4	75.4				26	25	22	20.6
BLN1	538745	184982	Roadside	99.5	99.5				20	18	17	15.7
BLN2	542024	181692	Urban Background	100.0	100.0						23	23.4
BLN3	542168	183159	Roadside	97.4	97.4						35	35.3
BLN4	541202	182442	Roadside	100.0	95.0				23	22	20	18.3
BLN5	539512	181359	Roadside	100.0	95.0				32	28	24	22.4
ND	542298	180709	Urban Background	95.0	95.0	25	27	20	21	22	17	14.8
KGV	542950	180215	Urban Background	83.8	83.8						17	15.6

Notes:

The annual mean concentrations are presented as µg m^{-3}. Exceedances of the annual mean AQO of 40 µg m^{-3} are shown in **bold**. Annual means in excess of 60 µg m^{-3}, indicating a potential exceedance of the 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_2 Monitoring Results: Non-Automatic Monitoring (µg m^{-3})

Diffusion Tube ID	X (m)	Y (m)	Site Type	Valid Data Capture for Monitoring Period (%)(1)	Valid Data Capture 2024 (%)(2)	2018	2019	2020	2021	2022	2023	2024
NHM-1	538280	185359	Urban Background	N/A	N/A	**43**	33.4	27.3	25.2	27.4	25.7	
NHM-2	539570	184659	Urban Background	91.9	91.9	34	32.1	24.9	22.4	22.2	20.8	17.9
NHM-3	539572	184659	Roadside	99.2	99.2	35	34.6	27.4	23.0	22.4	21.8	23.0
NHM-4	542831	183618	Roadside	89.8	89.8	33	31.6	34.7	28.8	26.2	26.9	23.6
NHM-6	539859	182655	Urban background	99.2	99.2	25	22.7	18.1	16.7	16.6	14.7	14.6
NHM-7	541492	182332	Urban background	99.2	99.2	34	30.0	35.8	22.5	23.8	23.0	21.9
NHM-8	542688	183202	Urban Background	42.6	42.6	27	26.5	22.7	22.0	19.8	16.9	13.7
NHM-10	539747	181477	Urban background	91.9	91.9	27	24.4	20.4	16.1	20.1	17.5	17.3
NHM-11	539623	181230	Kerbside	84.4	84.4	31	30.7	24.9	33.6	29.6	29.6	25.7
NHM-12	543762	180784	Urban background	90.0	90.0	33	30.8	24.2	24.2	21.1	19.8	18.6
NHM-13	541134	184098	Kerbside	80.9	80.9	35	36.6	**42.5**	38.4	37.7	34.2	31.8
NHM-16	539164	185158	Kerbside	84.4	84.4	**51**	36.6	36.8	31.7	29.5	27.7	28.5
NHM-17	542729	185047	Kerbside	99.2	99.2	38	**42.3**	32.8	27.1	28.6	22.2	20.5
NHM-19	539906	18170	Kerbside	99.2	99.2	**47**	35.5	**46.3**	39.7	36.6	32.7	31.5
NHM-20	539456	181499	Roadside	99.2	99.2	**58**	35.3	32.7	28.8	33.4	27.2	27.4
NHM-21-23	538657	183973	Roadside	99.2	99.2	34	29.8	24.5	23.2	22.8	20.0	20.5
NHM-24	542242	184354	Roadside	57.7	57.7							27.3
NHM-25	542242	184354	Roadside	67.1	67.1							30.7

Diffusion Tube ID	X (m)	Y (m)	Site Type	Valid Data Capture for Monitoring Period (%)(1)	Valid Data Capture 2024 (%)(2)	2018	2019	2020	2021	2022	2023	2024
NHM-26	538478	185444	Kerbside	90.3	90.3							26.7
LCA01	542154	180286	Urban Background	91.7	91.7	28	28	21	23	22	17.1	16.5
LCA02	541941	180303	Roadside	91.7	91.7	29	31	22	22	23	17.7	17.6
LCA04	542267	180710	Urban Background	83.3	83.3	26	28	23	25	24	18.5	16.8
LCA05	542928	180911	Roadside	100	100	24	26	21	22	21	17.4	14.0
LCA06	543724	180867	Roadside	83.3	83.3	27	27	24	23	20	15.5	14.1
LCA07	543667	180461	Other	100	100	31	32	22	21	24	19.0	18.4
LCA09	542520	180190	Roadside	N/A	N/A	29	29	22	23			
LCA10	541760	180424	Other	100	100	33	33	23	25	26	20.3	19.4
LCA11	543570	180690	Urban Background	100	100	30	32	25	26	26	19.5	16.7
LCA12	542192	180562	Other	100	100	24	29	22	22	23	17.3	17.2
LCA13	542274	180768	Urban Background	91.7	91.7	30	26	24	26	23	18.6	16.6
LCA14	542066	180716	Urban Background	91.7	91.7	31	33	26	28	27	19.3	17.3
LCA15	542300	180862	Roadside	100	100	28	28	21	24	22	16.6	16.0
LCA18	542267	180710	Urban Background	100	100	25	26	20	22	22	15.3	14.7
LCA20	541634	180365	Roadside	91.7	91.7	27	35	25	27	25	20.6	22.2
LCA21	543100	180132	Roadside	100	100				20	19	13.8	13.4
NHM-S 1	542089	185416	Roadside	0*	0*		29.0	24.3	26.7	23.8	28.0	
NHM-S 2	542319	185428	Urban background	0*	0*		24.0	19.5	19.1	17.7	18.2	

Diffusion Tube ID	X (m)	Y (m)	Site Type	Valid Data Capture for Monitoring Period (%)(1)	Valid Data Capture 2024 (%)(2)	2018	2019	2020	2021	2022	2023	2024
NHM-S 3	542564	185642	Urban background	0*	0*		27.0	20.5	19.5	18.1	19.6	
NHM-S 4	542922	185830	Urban Background	0*	0*		29.0	21.6	21.1	20.0	20.4	
NHM-S 5	543086	185713	Urban Background	0*	0*		28.0	21.2	21.1	18.0	20.1	
NHM-S 6	543086	185713	Urban background	0*	0*		32.0	26.3	28.3	24.6	24.8	
NHM-S 7	542880	185321	Kerbside	0*	0*		**42.0**	32.7	32.2	30.3	32.1	
NHM-S 8	542734	185179	Kerbside	0*	0*		33.0	25.5	24.5	24.8	25.9	
NHM-S 9	542549	185070	Urban background	0*	0*		26.0	20.6	19.3	18.6	18.8	
NHM-S 10	542701	184632	Urban Background	0*	0*		27.0	22.0	24.7	20.1	21.1	
NHM-S 11	542277	184357	Kerbside	0*	0*		35.0	28.5	38.4	**53.2**	**53.8**	
NHM-S 12	541681	184582	Urban background	0*	0*		26.0	19.5	17.2	17.5	17.9	
NHM-S 13	541797	184904	Urban Background	0*	0*		29.0	21.9	19.8	18.9	20.1	
NHM-S 14	541562	185194	Urban background	0*	0*		28.0	24.3	23.4	21.5	23.7	
NHM-S 15	541172	185041	Urban Background	0*	0*		27.0	22.5	20.7	20.4	20.9	
NHM-S 16	541368	184294	Urban Background	0*	0*		28.0	23.5	20.9	20.5	23.5	
NHM-S 17	541543	184112	Urban background	0*	0*		25.0	18.7	17.9	17.8	20.1	
NHM-S 18	541828	183772	Urban background	0*	0*		25.0	19.3	18.9	18.6	20.0	
NHM-S 19	542253	183708	Urban Background	0*	0*		28.0	22.5	22.6	21.0	20.1	
NHM-S 20	542492	184111	Urban background	0*	0*		32.0	25.6	23.2	23.6	25.1	
NHM-S 21	542831	183954	Urban background	0*	0*		31.0	23.2	20.7	21.0	24.9	

Diffusion Tube ID	X (m)	Y (m)	Site Type	Valid Data Capture for Monitoring Period (%)(1)	Valid Data Capture 2024 (%)(2)	2018	2019	2020	2021	2022	2023	2024
NHM-S 22	543501	183538	Urban background	0*	0*		28.0	21.7	20.7	20.4	21.6	
NHM-S 23	543143	183468	Urban background	0*	0*		26.0	21.3	18.3	18.2	18.3	
NHM-S 24	542827	183286	Urban Background	0*	0*		26.0	21.6	20.7	19.0	20.6	
NHM-S 25	543279	183097	Urban Background	0*	0*		25.0	19.2	19.7	17.7	19.3	
NHM-S 26	542858	182778	Urban background	0*	0*		33.0	24.9	23.5	20.5	20.7	
NHM-S 27	542858	182778	Urban background	0*	0*		31.0	22.4	21.6	19.9	20.0	
NHM-S 28	541628	182342	Urban Background	0*	0*		23.0	21.1	20.2	21.0	22.6	
NHM-S 29	541919	183099	Roadside	0*	0*		31.0	22.5	20.5	18.7	21.8	
NHM-S 30	541384	183505	Roadside	0*	0*		36.0	30.1	28.3	29.6	32.2	
NHM-S 31	540494	183908	Urban background	0*	0*		29.0	24.1	24.4	24.3	23.9	
NHM-S 32	540915	183744	Urban Background	0*	0*		23.0	18.6	18.2	17.1	17.6	
NHM-S 33	540502	184400	Urban Background	0*	0*		26.0	17.8	18.8	17.8	17.8	
NHM-S 34	540391	184416	Roadside	0*	0*		30.0	24.1	22.1	19.9	22.1	
NHM-S 35	540811	184261	Urban Background	0*	0*		28.0	20.3	20.6	19.9	21.9	
NHM-S 36	540592	184162	Urban background	0*	0*		29.0	19.2	18.6	18.7	19.0	
NHM-S 37	540665	184510	Urban background	0*	0*		28.0	23.6	19.9	21.0	21.5	
NHM-S 38	539849	184421	Urban Background	0*	0*		26.0	20.9	20.2	17.3	17.4	
NHM-S 39	540001	185106	Urban Background	0*	0*		25.0	20.2	19.1	18.0	18.9	
NHM-S 40	540595	185247	Urban background	0*	0*		28.0	23.3	20.6	19.5	19.8	

Diffusion Tube ID	X (m)	Y (m)	Site Type	Valid Data Capture for Monitoring Period (%)(1)	Valid Data Capture 2024 (%)(2)	2018	2019	2020	2021	2022	2023	2024
NHM-S 41	540764	185503	Urban background	0*	0*		30.0	21.7	18.5	17.9	19.7	
NHM-S 42	540838	185646	Urban background	0*	0*		21.0	18.5	16.2	20.6	19.2	
NHM-S 43	540359	185338	Urban background	0*	0*		32.0	24.0	23.9	23.8	25.2	
NHM-S 44	540099	185343	Urban background	0*	0*		25.0	19.5	17.7	18.4	17.0	
NHM-S 45	540011	185274	Urban Background	0*	0*		23.0	19.9	17.7	19.1	20.6	
NHM-S 46	539326	185305	Urban Background	0*	0*		26.0	20.1	19.9	18.9	19.1	
NHM-S 47	538857	185210	Urban background	0*	0*		28.0	20.4	20.3	20.5	21.0	
NHM-S 48	538856	185408	Urban background	0*	0*		27.0	19.9	18.5	20.6	20.4	
NHM-S 49	538715	185203	Urban Background	0*	0*		28.0	23.1	19.8	20.7	21.4	
NHM-S 50	538263	185253	Urban background	0*	0*		28.0	22.9	21.9	20.3	22.1	
NHM-S 51	537439	184122	Urban background	0*	0*		33.0	21.8	21.1	18.1	20.9	
NHM-S 52	537836	183828	Urban background	0*	0*		27.0	20.0	19.2	19.8	19.9	
NHM-S 53	538984	184024	Urban background	0*	0*		27.0	21.8	20.6	18.0	20.1	
NHM-S 54	538964	184062	Urban Background	0*	0*		29.0	20.6	19.7	19.1	20.2	
NHM-S 55	539379	184683	Urban background	0*	0*		31.0	26.0	25.4	24.8	21.7	
NHM-S 56	539469	183937	Kerbside	0*	0*		34.0	30.4	30.6	36.1	28.2	
NHM-S 57	539955	183624	Urban Background	0*	0*		27.0	19.4	19.6	18.4	20.5	
NHM-S 58	539444	183264	Urban Background	0*	0*		27.0	19.6	18.3	17.0	17.4	
NHM-S 59	539265	183375	Urban Background	0*	0*		27.0	20.3	20.6	19.5	18.5	

Diffusion Tube ID	X (m)	Y (m)	Site Type	Valid Data Capture for Monitoring Period (%)(1)	Valid Data Capture 2024 (%)(2)	2018	2019	2020	2021	2022	2023	2024
NHM-S 60	538336	182808	Urban background	0*	0*		29.0	23.9	23.1	20.0	19.7	
NHM-S 61	538373	183461	Roadside	0*	0*		31.0	24.3	20.4	19.9	21.2	
NHM-S 62	538455	183877	Roadside	0*	0*		31.0	24.0	24.6	24.0	24.9	
NHM-S 63	540193	183176	Urban Background	0*	0*		29.0	20.1	19.9	19.0	20.1	
NHM-S 64	540581	183217	Urban background	0*	0*		25.0	19.1	18.7	17.6	18.9	
NHM-S 65	540793	183493	Urban background	0*	0*		28.0	22.6	19.4	18.2	19.4	
NHM-S 66	540813	183333	Urban background	0*	0*		27.0	21.9	21.8	18.3	20.0	
NHM-S 67	540944	183245	Urban Background	0*	0*		31.0	19.4	18.6	17.7	18.0	
NHM-S 68	541216	182059	Urban background	0*	0*		31.0	25.2	23.3	22.7	21.0	
NHM-S 69	541272	182349	Urban Background	0*	0*		32.0	24.7	24.6	21.9	25.8	
NHM-S 70	541989	182568	Urban background	0*	0*		28.0	21.0	20.6	19.7	19.7	
NHM-S 71	541501	182588	Urban background	0*	0*		31.0	25.4	22.4	20.6	21.8	
NHM-S 72	541094	182694	Urban background	0*	0*		22.0	23.3	23.2	21.0	22.6	
NHM-S 73	539258	182560	Urban Background	0*	0*		28.0	22.4	22.6	21.0	21.1	
NHM-S 74	539315	182104	Urban background	0*	0*		30.0	24.3	25.4	24.2	23.8	
NHM-S 75	539561	182374	Urban background	0*	0*		31.0	19.0	20.9	20.1	18.4	
NHM-S 76	539983	182470	Urban background	0*	0*		24.0	21.3	18.3	18.3	16.3	
NHM-S 77	540108	182314	Urban Background	0*	0*		32.0	25.0	22.2	20.9	18.7	
NHM-S 78	540701	182157	Urban Background	0*	0*		30.0	22.7	23.0	23.6	25.1	

Diffusion Tube ID	X (m)	Y (m)	Site Type	Valid Data Capture for Monitoring Period (%)(1)	Valid Data Capture 2024 (%)(2)	2018	2019	2020	2021	2022	2023	2024
NHM-S 79	540443	182132	Urban Background	0*	0*		29.0	22.1	21.1	21.2	20.7	
NHM-S 80	539893	181888	Roadside	0*	0*		36.0	32.6	27.1	27.0	26.7	
NHM-S 81	539842	181328	Urban background	0*	0*		30.0	24.4	22.9	20.4	20.8	
NHM-S 82	540113	181170	Urban Background	0*	0*		28.0	23.7	21.3	24.6	24.8	
NHM-S 83	540275	181638	Urban background	0*	0*		26.0	22.0	21.0	21.3	22.1	
NHM-S 84	540855	181595	Urban background	0*	0*		26.0	21.1	20.5	19.0	18.9	
NHM-S 85	540742	181507	Urban Background	0*	0*		27.0	20.2	19.2	19.0	17.6	
NHM-S 86	540961	181074	Urban background	0*	0*		26.0	19.7	18.6	19.3	20.6	
NHM-S 87	540676	180279	Urban background	0*	0*		24.0	20.4	19.8	20.2	21.1	
NHM-S 88	543536	180065	Urban Background	0*	0*		27.0	20.3	18.7	19.7	22.3	
NHM-S 89	543202	180069	Urban background	0*	0*		30.0	24.5	20.2	20.1	23.7	
NHM-S 90	542197	180233	Urban background	0*	0*		29.0	21.7	19.5	21.1	22.0	
NHM-S 91	541233	181069	Urban background	0*	0*		38.0	27.0	27.2	32.1	27.6	
NHM-S 92	541712	181187	Urban Background	0*	0*		24.0	19.2	17.9	18.5	18.6	
NHM-S 93	541504	181370	Urban Background	0*	0*		24.0	21.8	18.4	17.1	17.4	
NHM-S 94	542061	181645	Urban background	0*	0*		24.0	23.1	19.9	18.7	17.7	
NHM-S 95	541928	181706	Urban background	0*	0*		38.0	23.0	22.2	23.4	24.3	
NHM-S 96	542603	181523	Urban Background	0*	0*		25.0	19.1	16.7	17.3	18.4	
NHM-S 97	542805	181812	Urban background	0*	0*		21.0	19.7	18.6	17.1	19.5	

Diffusion Tube ID	X (m)	Y (m)	Site Type	Valid Data Capture for Monitoring Period (%)(1)	Valid Data Capture 2024 (%)(2)	2018	2019	2020	2021	2022	2023	2024
NHM-S 98	543635	181422	Urban background	0*	0*		29.0	22.6	20.7	20.2	19.5	
NHM-S 99	543208	181147	Urban background	0*	0*		27.0	22.2	20.2	19.5	16.0	

☒ **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 µg m^{-3}. 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%).

***0% data capture for the non-automatic schools (NHM-S 1 – NHM-S 99) in 2024**

The 2024 data capture for non-automatic monitoring at schools was 0% due to a contractual issue. This has now been resolved and the council now has a robust checking system in place to ensure these sites will continue in the 2025 ASR. Data capture for two new sites at Plashet School was good and not impacted by this issue. This was the only school above the AQO in the 2023 ASR and so additional monitoring was introduced as part of the council's internal programme (sites NHM-24 and NHM-25).

Table F. NO_2 Automatic Monitoring Results: Comparison with 1-hour Mean Objective, No. of 1-Hour Means > 200 µg m^{-3}

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period %(a)	Valid data capture 2024 %(b)	2018	2019	2020	2021	2022	2023	2024
NM2	538661	183969	Roadside	99.2	99.2	0	0	0	0	0	0	0
NM3	539889	181469	Urban Background	97.6	97.6	0	0	0	0	0	0	0
NM4	542637	183573	Roadside	98.7	98.7						0	0
TL5	539934	180810	Roadside	83.7	81.9				0	0	0	0
TL6	540324	180253	Roadside	75.4	75.4				0	0	0	0
BLN1	538745	184982	Roadside	99.5	99.5				0	0	0	0
BLN2	542024	181692	Urban Background	100.0	100.0						0	0
BLN3	542168	183159	Roadside	97.4	97.4						0	0
BLN4	541202	182442	Roadside	100.0	95.0				0	0	0	0
BLN5	539512	181359	Roadside	100.0	95.0				0	0	0	0
ND	542298	180709	Urban Background	95.0	95.0						0	0
KGV	542950	180215	Urban Background	83.8	83.8						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 G. Annual Mean PM_{10} Automatic Monitoring Results (µg m^{-3})

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period %[a]	Valid data capture 2024 %[b]	2018	2019	2020	2021	2022	2023	2024
NM2	538661	183969	Roadside	99.8	99.8	18	18	18	17	16	14	14.3
NM3	539889	181469	Urban Background	96.7	96.7	19	18	20	18	18	15	14.6
KGV	542950	180215	Urban Background	100.0	100.0						13	11.9

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%).

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	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period %(a)	Valid data capture 2024 %(b)	2018	2019	2020	2021	2022	2023	2024
NM2	538661	183969	Roadside	99.8	99.8	1	3	6	0	4	0	0
NM3	539889	181469	Urban Background	96.7	96.7	2	4	6	2	4	0	0
KGV	542950	180215	Urban Background	100.0	100.0						2	0

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%).

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period %(a)	Valid data capture 2024 %(b)	2018	2019	2020	2021	2022	2023	2024
NM2	538661	183969	Roadside	98.2	98.2			11	13	10	7	8.3
NM3	539889	181469	Urban Background	97.9	97.9			12	14	11	9	9.1
NM4	542637	183573	Roadside	97.3	96.4						11	10.1
TL6	540324	180253	Roadside	59.1	59.1				12	12	9	11.4
BLN1	538745	184982	Roadside	99.5	99.5				9	10	9	8.7
BLN2	542024	181692	Urban Background	100.0	100.0						7	6.4
BLN3	542168	183159	Roadside	97.4	97.4						8	8.0
BLN4	541202	182442	Roadside	100.0	95.0				10	9	8	7.5
BLN5	539512	181359	Roadside	100.0	95.0				12	11	9	7.5
KGV	542950	180215	Urban Background	100.0	100.0						8	7.6

Notes:

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

Exceedances of the $PM_{2.5}$ annual mean AQO of 20 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%).

Table J. 2024 SO_2 Automatic Monitoring Results: Comparison with Objectives (not applicable to Newham)

This table is intentionally missing.

Newham has not declared an AQMA for SO2; monitoring was discontinued after objectives were met for many years and were well below objective values.

Table K. Other Pollutants (not applicable to Newham)

This table is intentionally missing.

Authorities in England are not required to report on other pollutants such as Benzene, 1,3- Butadiene, Carbon Monoxide and Lead, unless there is a local issue that needs to be addressed.

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, maintained, and provide dates by which measures will be carried out.

The London Borough of Newham first declared an Air Quality Management Area in 2002 which focused on a smaller selection of 'A' and 'B' roads. A new borough wide AQMA was declared in 2019. Table L. presents a description of the currently designated AQMA. Appendix C provides maps of the air quality monitoring locations inside the borough wide AQMA.

The air quality objectives pertinent to the current AQMA designation(s) are as follows: NO_2 40µg/m^3 annual mean, 200µg/m^3 1-hour mean (18 exceedances permitted). PM_{10} 40µg/m^3 annual mean, 50µg/m^3 24-hour mean (35 exceedances permitted).

Table L. 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
Newham AQMA no 2	5/12/2019	NO2 Annual Mean	Whole of Newham	NO	57	47†	Uncompliant	AQAP for AQMA 2, November 2019 Air Quality Action Plan 2019 - 2024	Ar Quality Action Plan 2019 - 2024
		PM10 24-Hour Mean			49*	43†	Uncompliant		

*LAEI 2019 sensitive exposure from A13 (grid ref: X:539792 Y:181668) †LAEI 2025 forecast sensitive exposure from A13 (grid ref: X:539792 Y:181668)

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

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

2.2 Air Quality Action Plan Progress

The current AQAP was adopted at the end of 2019. Work is underway on a new AQAP which it is hoped will be adopted in 2025

Table M provides a brief summary of Newham's progress against the Air Quality Action Plan, showing progress made this year.

Table M. Delivery of Air Quality Action Plan Measures

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
1.1	Monitoring and other core statutory duties	Maintain & expand an appropriate AQ monitoring network (currently 165 diffusion tube sites (NO2), 5 automatic monitoring sites (PM10, 2.5 & NOx), 1 NO2 diffusion tube co-location study & 25 small sensors)) so that AQ impacts within the Borough can be properly understood	Ongoing	Pollution Control	25 small sensor monitors have been deployed by a selection of suppliers operating on different networks. Some are being used to support the Council's Low Traffic Neighbourhoods and School streets. This data has already been used in justifying traffic reduction schemes, such as the Browning Bridge Closure and Heathy School Streets. There are currently 3 Breathe London monitors and 22 Earthsense monitors deployed in Newham. As part of a planning agreement with London City Airport, three real-time monitors (2 NO2 & 1 PM10 & PM2.5), together with 17 NO2 diffusion tubes are deployed around the airport. Data is available from London City Airport https://www.londoncityairport.com/corporate/corporate-info/reports-and-publications 99 of our NO2 diffusion tubes have been deployed outside the boroughs schools and 20 tubes in key locations around the borough. TfL have set up two real time monitors to assess the impact of the Silvertown Tunnel (currently under construction) Real time data is available at London Air Quality Network :: Welcome to the London Air Quality Network » Statistics Maps

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
1.2	Monitoring & core statutory duties	Declaring Smoke Control Areas & ensuring they are fully promoted & enforced.	Renew SCA in 2025	Pollution Control	In 2022 the Council took the decision to replace multiple SCAs with a single borough-wide SCA. This was delayed, awaiting clarification on the requirements of houseboats once a borough-wide SCA is in place. It is still the intention to carry out this consultation alongside the AQAP refresh consultation later in 2025.
2.1	Emissions from developments and buildings	Ensuring emissions from construction are minimised.	Ongoing	Pollution Control	Pollution Control review all major applications for air quality related issues.
2.2		Minor applications where NRMM is likely to be used have a condition requiring compliance with GLA SPG. Newham contribute to the pan-London Non-Road Mobile Machinery scheme.	Ongoing	Pollution Control	Minor applications where NRMM is likely to be used have a condition requiring compliance with GLA SPG. Newham contribute to the pan-London Non-Road Mobile Machinery scheme. 29 new sites were registered on the NRMM web site 24 audits of building sites made. Of these only 2 were non-compliant.
2.3		Reducing emissions from combined heat & power (CHP).	Ongoing	Pollution Control	No new applications for CHP plants received in 2024

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
2.4		Air Quality Neutral development – as per London Plan & Local Plan, all new development should be at least AQ neutral (as per GLA definition). Additionally, seek to implement the AQ positive provisions of the new London Plan (applying to all EIA-applicable development).	Ongoing	Pollution Control	The Pollution Control Team reviews all major applications for air quality issues. Newham's current local plan newham-local-plan-2018-pdf- and Planning Application Requirements newham-par-april-2024 requires compliance with air quality neutral for all developments. Major Applications and applications in the GLA's 'Air Quality Focus Areas' require an air quality assessment. Newham's Local Plan is being refreshed to include more pollution and climate-friendly objectives. The Pollution Control Team is working on an air quality Supplementary Planning Guidance note which it is hoped will be adopted in 2025

2.5	Emissions from developments and buildings	Promoting & delivering energy efficiency & energy supply retrofit projects in workplaces & homes through EFL retrofit programmes such as RE:FIT, RE:NEW & through Borough carbon offset funds.	Ongoing	Private Sector Housing Newham Homes Sustainability	Four of our building refurbishment have received £1.3 million in Carbon Offset Fund as part of the Area Regeneration Neighbourhood Investment Programme. This includes Alice Billing House, Stock Street, Will Thorne Pavilion, and Tate Institute. The Tate Institute refurbishment will help deliver a net-zero carbon operation, achieved through the installation of solar panels and air source heat pumps. This will ensure long-term energy efficiency and operational affordability for community use. The retrofit also serves as a showcase for using natural and reclaimed materials in line with circular economy principles. The first phase of the project is set for completion in summer 2025. The Canning Town Old Library has received £250k in Public Sector Decarbonisation Funding to support its refurbishment. Embedded energy efficiency into the Private Sector Housing team's activities by updating the enforcement schedule to encourage landlords to improve their properties to EPC C, following PAS2035 retrofit best practices, and by providing training to enforcement officers on Newham's Just Transition plan and on low-carbon heating technologies, non-typical heating and insulation, equipping them to better advise landlords. Conducted LEA (Local Energy Accelerator) feasibility study for rooftop prioritisation, identifying 50MW of solar potential in the borough and created a business plan for Repowering Communities/Community Energy Newham, providing a business and legal structure to develop, scale and finance community energy in LBN and other boroughs. Work has begun to deliver ECO4 energy efficiency improvements to low-income and vulnerable residents, working with both homeowners and private landlords and in partnership with Repowering London and local installers. We are also finalising a contract with Bid Connect to deliver energy-saving measures to 132 eligible social housing properties. Secured funding to conduct heat decarbonisation plans for some maintained schools in the borough. Delivering the Stay Warm in Newham scheme alongside Cadent foundation, Groundwork and the Renewal Programme. The scheme provides help and support to Newham residents struggling with the high

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
					energy cost through warm bank/haven sessions, home visits, telephone support, and training local energy experts in the community. Prioritisation of social housing properties to retrofit is underway, with a pilot of environmental sensor technologies, Aico and Switchee, having taken place in two identical blocks (Bassett and David Lee Point), each with 123 units, to enable retrofit impact assessment capability and align repairs for damp and mould compliance with retrofit.

3.1	Public health and awareness raising	Public Health department taking shared responsibility for Borough AQ issues & implementation of Air Quality Action Plans	2024	Pollution Control Public Health Sustainability	Newham Community Pharmacy AQ and asthma pilot: NHS North-East London and Newham Training Hub are working with Newham Community Pharmacies to provide information on the impacts of air pollution on health, to children with asthma and their families, when they pick up their asthma medication. This project has been funded by DEFRA, with Project Lead time being funded by the Newham Training Hub. Newham identified as area of highest need for this work as worst affected by air pollution AND highest case- load of high-risk asthma patients (Eclipse data) Ask of pharmacists: • To have quality conversations with children and their families, around asthma care and the impacts of air pollution on their health, and what simple steps they can do to help reduce their exposure. Aim: • Improve patient and family understanding of impacts of AP on asthma and how to mitigate these risk • Improve asthma care • Reduce reliever inhaler over-use • Reduce primary care carbon footprint (over prescribing/low carbon inhaler alternatives) Progress • Over 370 children have attended the service so far (we have funding for 740 consultations) • 13 community pharmacies currently providing the service. • Participating pharmacies displaying posters outlining 5 key actions to take to reduce exposure to air pollution and linking to the NEL HCP Air Pollution webpage using a QR code. • Participating pharmacies distributing the Air Pollution and You flyer to all patients for whom they are dispensing inhalers. • In addition, they are providing these patients with a sticker with details for the Digital Health Passport.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
					• 11 participating pharmacies are displaying electronic tablets provided by DEFRA. These screens are being used by patients to access the DEFRA webtool whilst collecting their medications and using pharmacy services. We have engaged staff at each of the 6 GP practices, a member of staff from each of the practices has attended one of our drop-in webinars • Referral pathway from these practices is up and running, referrals being received into the service. • Ongoing engagement with practices to increase referrals: • Both in-person and Teams meetings with staff • Assistance with performing searches to identify and proactively refer eligible patients to the service • Ongoing engagement with pharmacies to increase opportunistic patient recruitment to the service • Launched a Climate Action newsletter to increase comms with our residents, stakeholders, academic partners and share how people can get involved in the Council's and wider communities' climate and energy efficiency-related activities.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
3.2	Public health and awareness raising	Supporting a direct alert service such as airTEXT, & promotion & sharing of high pollution alert services.	2024	Pollution Control Public Health	The boroughs of Newham, Hackney and Tower Hamlets have launched an online tool, known as Air Aware to enable residents to check live air pollution levels in the area: Air Aware (air-aware.co.uk) Air Aware shows live particulate matter and nitrogen dioxide levels, helping people make informed choices about their exposure to air quality. It also features a chat function that can provide verified advice in direct response to users' questions, which can help people better protect themselves from the impact of air pollution. Air Aware uses a web-based platform that can be viewed on a mobile device, laptop, or computer. The councils have worked with a developer and local residents to design a tool that is accessible to all, including features such as translation and text-to-speech.
3.3	Public health and awareness raising	Encourage schools to join the TfL STARS accredited travel planning program to reduce congestion, improve road safety & improve health & wellbeing of our schoolchildren	Ongoing	Highways	Academic year 2023 – 24: 27 Gold, 2 silver, 14 bronze and 15 engaged schools in the borough. 10 Campaigns & Events run / promoted, 26 teachers attended STP workshops * Overall reduction in car journeys to school

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
3.4	Public health and awareness raising	Air quality in & around schools & extend the school audits GLA framework to all polluted schools.	Ongoing	Highways Pollution Control	The borough has successfully expanded its "Healthy School Streets" programme to 38 zones encompassing 51 schools. Roads are closed to non-residents during peak hours to reduce motorised traffic. - 5 permanent school streets in Phase 1 - 6 permanent school streets in Phase 2 - 5 permanent school streets in Phase 3 - 4 experimental school streets in Phase 4 - 8 experimental school streets in Phase 5.1 - 10 experimental school streets in Phase 5.2 Existing Healthy School Streets – Healthy School Streets – Newham Council 13 schools joined the scheme in the 2023 – 2024 academic year, and 15 more schools participating in the 2024-2025 academic year. The cost per school is £480 per year, which will cover: • Training and welcome sessions for teachers • 26 expert-designed climate education sessions, including three outdoor sessions • Calculation of school carbon footprint • Two teacher training sessions to support the further inclusion of climate education in school lessons and life • Awareness-raising activities • Monitoring and evaluation. Over 80% of participating schools are located in areas with the top 30% of the Indices of Multiple Deprivation, ensuring that more young people from disadvantaged backgrounds can access climate education. The Council's Climate Action Team has funded the scheme for the 2024-2025 academic year.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
3.5	Public health and awareness raising		2025	Public Health	BetterPoints, an app-based programme and dedicated website, aimed at encouraging users to walk, wheel, cycle or run, in order to improve their health and wellbeing was commissioned in January 2024. Once users start moving, activity is automatically recorded. Users then start to receive BetterPoints rewards, a digital currency which can be exchanged for shopping vouchers at local businesses, or alternatively, a charity donation. The first year of the BetterPoints Newham Challenge has been funded by Westfield East Bank Creative Futures Fund, supported by Westfield Stratford City and Foundation for Future London. https://www.newham.gov.uk/betterpointslaunch
3.6	Public health and awareness raising	Advice given to event organisers to make use of public transport and sustainable travel for their events, at the planning stage. Also work with major venues in the Olympic Park such as London Stadium and Abba Arena who are all public transport destinations as required by their planning permissions.	2024	The Safety Advisory Group	125 events licenced in 2024

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
4.1	Delivery servicing & Freight	Reducing emissions from deliveries to local businesses & residents.	2025	Sustainability	Launched the Excess Materials Exchange platform - digital marketplace for the reuse of construction materials - to reduce the emissions associated with material use in new development and refurbishment of buildings, and this has been promoted to developers and contractors in the borough. Significant work has been done to initiate and develop the idea of a physical construction materials hub in Silvertown, working with the Royal Docks team to bring together stakeholders and funding to deliver this.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
5.1	Borough fleet	Borough fleet Reducing emissions from council fleets, including a switch to zero emission vehicles	Ongoing	Fleet	Plan to either electrify our vehicle fleet or move away from diesel as a fuel by 2030 The Council's Fleet now consists of 70 fully electric vehicles. Further vehicle procurements are being carried out with an initial review of whether electric vehicles are fit for purpose and practically possible. Replaced our existing van fleet with 137 mild hybrid vehicles & operate all our vehicle fleet on gas-to-liquid fuel (not conventional diesel). Replacing our existing refuse fleet vehicles & although they are not fully electric, they will have fully electric bin lifting equipment. Installed additional charging units in our Folkestone Road Depot. Note: due to a lack of a suitable power supply and no funding to get additional power installed the move to more electric vehicles is currently on hold. Our Green Fleet Management will identify and rectify driver behaviour. Areas such as carbon footprints, idling and speeding will be monitored for all council vehicles. This will be achieved through a telematics system for all new vehicles. Fleet services have been accredited 'Clean Van Commitment' and pledged to Engines Off. Fleet has obtained "Truck excellence accreditation" What the council is doing? – Energy and sustainability – Newham Council

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
6.1	Localised solutions	Maximising the AQ benefits of Green Infrastructure (GI) in new development.	Ongoing	Pollution Control Sustainability	This will be delivered through implementation of the new Local Plan, in line with the new London Plan 2020. Phase 3 to 6 of the Thameside West under development will see one of the last derelict docklands sites in the Royal Docks regenerated with expansive new parkland. Bidder Street Data Centre: In October 2024, Newham Council approved plans for a 77MW hyper scale data centre in Canning Town. The £750 million investment is expected to create numerous jobs and regenerate the Cody Triangle area. The facility will have the capacity to export recycled heat to approximately 13,000 homes and businesses and will open part of the River Lea path, enhancing connectivity between Canning Town and Stratford

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
6.2	Localised solutions	Localised solutions Green infrastructure delivery (GI). Beyond the promotion and protection of GI through the planning regime, LBN can seek to deliver GI through its other responsibilities.	Ongoing	Pollution Control Sustainability	Alongside SUGi, we have planted seven 'pocket forests' in schools and community spaces, planting 14,460 trees of 22 different native species varieties across 4,820 square metres, making Newham more resilient, greener, and vibrant while engaging with children and young people. https://www.sugiproject.com/partners/newham Beckton Meadows: In March 2023, Newham Council secured £38,500 from the Mayor of London's Rewild London Fund to develop Beckton Meadows. This project involves creating a 3,000-square-metre wildflower meadow in Beckton District Park, aiming to boost biodiversity and provide educational opportunities for the community. Urban Pocket Forests: In June 2023, the council announced a £500,000 investment to establish biodiverse "pocket forests" in schools and communities. These small urban forests are designed to improve air quality, reduce urban heat effects, and enhance access to green spaces. So far seven 'pocket forests' have been planted in schools and community spaces. Planting 14,460 trees of 22 different native species varieties across 4,820 square metres, making Newham more climate resilient, greener, and vibrant while engaging with children and young people. Westfield Avenue Public Realm Improvement: In February 2024, Newham Council, in partnership with the London Legacy Development Corporation and supported by the Mayor of London, initiated a £12 million project to transform Westfield Avenue. The scheme includes wider pavements, segregated cycle tracks, improved crossings, and the planting of 60 new trees, 31 rain gardens, and 15 planting beds. This project is part of Newham's Just Transition plan, aiming to establish Stratford as London's first Green Zone by 2026.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
6.2	Localised solutions	Update of Procurement policies to reduce pollution from logistics & servicing.	2025	Procurement	There has been a major reorganisation in Procurement in Newham and the lack of policies around social value (including air quality) in the Council's procedures has been recognised. It is the intention to incorporate wider social values in the council's procurement policies in 2025
7.1	Cleaner transport	Reducing emissions from deliveries to local businesses & residents.	2025	Highways	8-month commission for Cargo Bikes for Business (MP Smarter Travel) 95 businesses across the borough engaged from various industries. £6k subsidy for acquiring a cargo bike or use of cargo bike Services. 5 cargo bike trials – 4 businesses have purchased bikes, and one has used a cargo bike-based service.
7.2	Cleaner transport	Low Emission Neighbourhoods (LENs) including low traffic schemes.	2024	Highways Pollution Control	To further promote sustainable and cleaner living environment, the council has increased the number of streets within LTNs by 10% to 44% in total from 2019 to 2024. Newham currently has 7 Low Traffic Neighbourhoods: 1. Maryland 2. Odessa 3. Manby 4. Atherton 5. Stratford Park 6. Woodgrange and Capel 7. West Ham Park The Pollution Control Team work closely with Highways to ensure interventions have a positive effect on air quality. Air quality monitoring and traffic count surveys are carried out before and after major healthy street initiatives to aid in public consultation and decision making. Low Traffic Neighbourhoods – Newham Council

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
7.3	Cleaner transport	Discouraging vehicle idling	2024	Highways Pollution Control	"No Idling" signs have been placed throughout the borough, particularly in areas identified as hotspots for vehicle idling such as schools and busy junctions to remind drivers to switch off their engines when parked. This was part of the council's efforts to improve air quality by participating in the "Engine Off. Every Stop" campaign.
7.3	Cleaner transport	Regular temporary Car Free Days & pedestrianisation schemes	2024	Highways Pollution Control	The West Ham park LTN will also be planning temporary street closures as part of their activation and engagement days.
7.4	Cleaner transport	Using parking policy to reduce pollution emissions.	2024-5	Highways	In December 2024 Cabinet agreed that in relation to diesel vehicles, a surcharge for diesel vehicles across all forms of parking in Newham in 2025. The intention is to expand the gap in charges between Newham's emissions-based charging bands, to strengthen the incentive for drivers of higher polluting vehicles to make greener choices, either by moving to a lower emitting vehicle, or opting for active travel, where their car is rarely used. The new charges, which are due to be introduced in summer 2025, will ensure that drivers of electric and low emission vehicles are rewarded for their choices through significantly lower charges, while making sure that those who choose to drive high polluting or diesel vehicles are properly incentivised to make the move to greener options.

Measure	LLAQM Action Matrix Theme	Action	Estimated / Actual Completion Date	Organisations Involved	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
7.5	Cleaner transport	Installation of Ultra-Low Emission Vehicle (ULEV) infrastructure (electric vehicle charging points, rapid electric vehicle charging point & hydrogen refuelling stations).	2024-5	Highways	With government phasing out combustion engines, TfL estimate that 60,000 electric chargers could be needed in London by 2030. The Council has been expanding the EV charging infrastructure to 238 on-street chargers to support cleaner vehicles. The majority of these are dual socket fast chargers with the ability of charging most cars and vans in less than two hours. The chargers are accompanied by dedicated electric vehicle bays to further encourage the switch from combustion. There is an intention to have a total of 3000 EV charging points by 2030 Note: there have been complaints about the loss of parking spaces The Council is supporting a TfL project for a high capacity charging point in Canning Town

7.6	Cleaner transport	Provision of infrastructure to support walking & cycling	2024-5	Highways	The North Woolwich Rd Corridor: interconnecting the emerging new neighbourhoods making active travel easier, safer and more convenient (completing 2025). Westfield Avenue Improvement scheme: London's first 'Green Zone' includes an attractive network of walking and cycling routes to new homes, businesses, and the Queen Elizabeth Olympic Park (completing 2025). The Prince Regent Lane improvement works: Enhanced traffic flow and pedestrian safety, including a dedicated bus priority scheme, widening footpaths, adding signalled pedestrian crossings, cycling improvements, and reconfiguring junctions to prioritise pedestrians and buses (completed 2024). Romford Road Public Realm Improvement Scheme: A healthy Streets approach to encourage active travel for residents, businesses, visitors (under construction). Over 1km of stepped cycle track, 9 new continuous footway (11 in total), 1 new bus stop bypass Over 1km improved footway, including trees and planting. The Stratford Station Business Plan is exploring significant improvements to the public realm, cycling, and walking routes around and through the station. This includes reviewing the operation of the lines running through Stratford to increase the number of journeys within the Borough and reduce car use. We are also working closely with the Stratford BID on public realm and wayfinding improvements to enhance walkability in the town centre. £2.5 million has been spent on public realm improvements in Forest Gate, Manor Park, Green Street, and Little Ilford as part of the 'Shape Newham' and 'Colours of Projects' programmes. These improvements include new seating, cycle hangars, and planting, all aimed at increasing biodiversity in these areas.

3. Planning Update and Other New Sources of Emissions

Table N. Planning requirements met by planning applications

Condition	Number
No. of planning applications with a reviewed air quality impact assessment	23
No. of planning applications required to monitor for construction dust	46
No. of CHPs/Biomass boilers refused on air quality grounds	0
No. of CHPs/Biomass boilers subject to GLA emissions limits/other restrictions	0
No. of developments required to install Ultra-Low NO_x boilers	0
No. of developments where an AQ Neutral assessments is undertaken	26
No. of developments where AQ Neutral assessment mitigation is required	2
No. of planning applications with S106 agreement to improve air quality	2
No. of planning applications with CIL contribution to improve air quality	0
NRMM: Central Activity Zone, Canary Wharf and Opportunity Areas	
No. of conditions related to NRMM included.	8
No. of developments registered at www.nrmm.london	14
No. of audits (pan London audits only)	10
% of sites unregistered prior to audit	2
% of sites compliant	90
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.	The information above has been collated from the GLA NRMM web site & '24 report
NRMM: Excluding Central Activity Zone, Canary Wharf and Opportunity Areas	
No. of conditions related to NRMM included.	38
No. of developments registered.	16 registered
No. of audits	14
% of sites unregistered prior to audit	0
% of sites compliant	100
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.	The information above has been collated from the GLA NRMM web site & '24 report.

Note: This table only includes planning applications submitted to the London Borough of Newham in 2024. Approximately a quarter of the borough's area was controlled by the London Legacy Development Corporation, which dealt with planning applications in the E15 and E20 postal districts.

3.1 New or significantly changed industrial or other sources

Silvertown Tunnel. This TfL sponsored project was opened to the public on the 7th April 2025. At the tunnel opening, significant increases in general traffic and HGV's in particular have been recorded. HGV's are unable to use the Blackwall Tunnel because of height restrictions. Emissions monitoring is currently underway along Silvertown Way and this will be reported further in next years ASR.

GPark Data Centre. This application was approved in 2024. It will incorporate 102 back-up diesel generators, with the capacity to deliver 30MW of electricity. The site does not meet the Air Quality Neutral benchmark and off-setting payments will be made on its phased opening

Bidder St Data Centre. This application was approved in 2024. It will incorporate 79 back-up diesel generators. The site does not meet the Air Quality Neutral benchmark and off-setting payments will be made on its phased opening

Beckton CHiP plant. Whilst not a 'new' process at the end of 2024, under the Medium Combustion Plant Directive, regulation of this plant was moved from Newham to the Environment Agency. The EA are revising its Permit to ensure compliance with the MCPD standards.

4. Additional Activities to Improve Air Quality

4.1 London Borough of Newham's Fleet

The Council's fleet consists of a total of 629 vehicles, the engine type of each is as follows:

Engine Type	Number of vehicles	Percentage
Fully Electric	70	11.1%
Diesel Hybrid	135	21.5%
Diesel	397	63.1%
Petrol	27	4.3%

4.2 Planning Enforcement

The London Development Corporation (LLDC) had planning and enforcement control over the largest redevelopment area in Newham (E15 & E20) until December 2024. For the remaining applications Newham's Pollution and Planning Enforcement Teams collaborate with the Pan-London 'Cleaner Construction for London' project where sites are audited for compliance. The compliance rate for sites is high and enforcement action has not been necessary.

4.3 Pan-London NRMM Auditing Project

The London Borough of Newham will continue to fund the NRMM Enforcement Project in 2025/6.

NRMM Planning Condition for Large Sites:

The development hereby permitted shall not commence unless and until a Construction Management Plan has been submitted to and approved in writing by the Local Planning Authority. The Construction Management Plan shall include details of:

- *air pollution control measures complaint with the GLA SPG on 'The Control of Dust and Emissions During Construction and Demolition'. Specifically:*
  - *an air quality and dust risk assessment*
  - *an 'air quality and dust management plan'*
  - *monitoring proposals*
  - *Non-road mobile machinery emissions including registration of the site at the GLA web site: https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/nrmm*
- *An assessment of all matters as are likely to cause nuisance to adjoining occupiers (including but not limited to; noise, vibration, dust, smoke, odour control) accompanied by mitigation measures addressing all matters relevant to the site.*
- *No burning shall be carried out on site.*

- *For the control of noise and vibration, reference shall be had to BS 5228 'Code of practice for noise and vibration control on construction and open sites'*
- *Hours of work on the site shall be 08:00-18:00 Monday to Friday; 08:00-13:00 Saturday and at no time on Sundays or Public Holidays.*
- *Community liaison to give clear information to residents and others in advance in writing about potential disturbances/disruptions from i.e. noise, dust, or disruption of traffic, incidents, etc*
- *Any other bespoke requirement [insert if required]*

The development shall be undertaken at all times in accordance with the approved Construction Management Plan.

Standard NRMM Planning Condition:

The demolition and construction approved by this planning consent shall be undertaken in accordance with the Greater London Authority 'Control of Dust and Emissions from Construction and Demolition' SPG.

- *Before work commences on site, the site must be registered under the NRMM Regulations which are explained in the SPG.*
- *https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/nrmm*
- *Hours of work on the site shall be 08:00-18:00 Monday to Friday; 08:00-13:00 Saturday and at no time on Sundays or Public Holidays.*
- *Best practice, as defined in BS 5228 'Code of practice for noise and vibration control on construction and open sites' shall be used for the control of noise.*
- *No burning shall be carried out on site.*

Application of NRMM Conditions

These conditions are applied when Development Control consult the Pollution Team on construction related planning applications. The London Legacy Development Corporation was wound up at the end of 2024. Newham is currently the local planning authority for the whole of its administrative area

4.4 Air Quality Alerts

The borough supports airTEXT (https://www.airtext.info/) and our communications team is signed up to and relays Air Quality Alerts where relevant to Newham residents on various online platforms. Newham also support a new community engagement air quality information service Air Aware (https://www.air-aware.co.uk/) along with the London boroughs of Hackney, Tower Hamlets and City of London

4.5 Air Quality Positive

No examples of innovative mitigation measures

Appendix A Details of Monitoring Site Quality QA/QC

A.1 Automatic Monitoring Sites

The five sites in Newham are representative of relevant exposure in the borough. The sites were connected to the Air Quality England Network with QA/QC undertaken by Ricardo Energy & Environment which follows the same standards of the government's AURN sites. Monthly calibrations are carried out by a Council Air Quality Officer, while independent audits were undertaken through the data management and QA/QC contract with Ricardo. TL5 and TL6 are operated by Transport for London (TfL).

PM_{10} Monitoring Adjustment

The TG16 guidance highlights that any PM_{10} monitoring undertaken must conform to criteria relating to the gravimetric European Reference Method or its approved equivalent. Newham deployed FDMS analysers at Wren Close and Cam Road until May 2018, which were found to be equivalent. The heated BAM 1020 analysers have been deployed at Wren Close and Cam Road since May 2018. East Ham Town Hall has one BAM measuring $PM_{2.5}$ which was installed in December 2022. The relevant correction factors are applied to BAM data by Ricardo.

A.2 Diffusion Tubes

The diffusion tubes were supplied and analysed by Gradko International Ltd, with a preparation method using 50% TEA in acetone. Gradko is a UKAS accredited laboratory and participates in the new AIR-PT Scheme (a continuation of the Workplace Analysis Scheme for Proficiency (WASP)) for NO_2 tube analysis and the Annual Field Inter-Comparison Exercise.

Factor from Local Co-Location Studies

Diffusion tubes are known to exhibit bias when compared to results from automatic analysers. Therefore, diffusion tube results need to be adjusted to account for this bias. The council has triplicate tubes located at its Cam Road (NM2) automatic monitoring station. The bias adjustment factors below are derived from this co-location study and validated alongside the National Diffusion Tube Bias Adjustment studies, using the same analytical method and laboratory.

A bias adjustment factor for 2024 of **0.81** (also 0.81 in 2023) was derived from the local co-location study, with 'good overall precision' and 'good overall data capture' for the 2024 monitoring period. The national spreadsheet correction factor for this type of study was **0.88** for 2024. The difference in the two factors is 8.6%.

Discussion of Choice of Factor to Use

A comparison with the local bias adjustment factors calculated from previous years shows a close comparison and this year's local bias adjustment compares closely with the national adjustment of 0.88**.** As such, the adjustment factors listed in Table O have been considered appropriate to use.

Table O. Bias Adjustment Factor

Year	Local or National	If Local, Version of National Spreadsheet	Adjustment Factor
2024	Local	04/25	0.81
2023	Local	03/24	0.81
2022	Local	04/23	0.80
2021	Local	03/22	0.80
2020	Local	06/21	0.85
2019	National	-	0.86
2018	National	-	0.89

A.3 Adjustments to the Ratified Monitoring Data

Short-term to Long-term Data Adjustment

Where data capture is less than 75% and greater than 25% of a full calendar year (between 3 and 9 months), the mean should be “annualised” – i.e. adjusted using the methodology outlined in LLAQM.TG(19) before being compared to annual mean objectives.

Table P has been completed to annualise the non-automatic NO_2 data for NHM 8, which had access issues in 2024 and NHM 24/25, which are new sites that only started in April at Plashet School.

Table S has been completed for TL6 (Britannia Gate) to annualise the $PM_{2.5}$ data which was not captured for over 4 months in the periods February-March 2024 and July-August 2024. There were some extended power outages to the station in this period due to major improvement works along the Royal Docks Corridor.

Distance Adjustment

If an exceedance is measured at a monitoring site which is not representative of public exposure, the procedure specified in LLAQM.TG(19) is used to estimate the concentration at the nearest receptor.

Table T has not been completed, as there were no sites in 2024 exceeding the annual NO_2 legal limit value at the source.

Table P. Non-Automatic Monitoring Data Adjustment

Site ID	Annualisation Factor Wren Close (Newham)	Annualisation Factor Dawlish Rd (Waltham Forest)	Annualisation Factor Ley Street (Redbridge)	Annualisation Factor Belvedere (Bexley)	Average Annualisation Factor	Raw Data Simple Annual Mean (µg/m³)	Annualised Data Simple Annual Mean (µg/m3)
NHM 08	0.8131	0.7366	0.7803	0.7912	0.7803	21.6	16.8
NHM 24	1.1485	1.1313	1.2153	1.1344	1.1574	29.0	33.5
NHM 25	1.0869	1.0523	1.1354	1.0577	1.0831	34.8	37.7

Table Q. Automatic NO_2 Monitoring Data Adjustment

This table is intentionally missing. Calculations are not required where the annual data capture for all sites are greater than 75%.

Table R. Automatic PM_{10} Monitoring Data Adjustment

This table is intentionally missing. Calculations are not required where the annual data capture for all sites are greater than 75%.

Table S. Automatic $PM_{2.5}$ Monitoring Data Adjustment

Background Site	Annual Data Capture (%)	Annual Mean (A_m)	TL6	
			Period Mean (P_m)	Ratio (A_m / P_m)
Wren Close (Newham)	97.89	9.10	8.7	1.04
Dawlish Rd (Waltham Forest)	99.16	9.41	9.1	1.04
Belvedere (Bexley)	96.05	7.31	7.1	1.01
Average (R_a)			1.04	
Raw Data Annual Mean (M)			11.0	
Annualised Annual Mean (M x R_a)			11.4	

Table T. NO_2 Fall off With Distance Calculations

This table is intentionally missing. Calculations are not required where there are no exceedances at source of the annual mean NO_2 objective of 40µg m^{-3} .

Appendix B Full Monthly Diffusion Tube Results for 2024

Table U. NO_2 2024 Diffusion Tube Results (µg m^{-3})

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 <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
NHM-2	539570	184659	30.3	29.3		13.2	15.9	17.3	18.7	18.9	21.9	27.3	27.3	21.9	22.0	17.9		
NHM-3	539572	184659	28.6	27.6	21.1	28.5	18.8	18.7	41.3	23.9	28.7	35.0	37.5	30.1	28.3	23.0		
NHM-4	542831	183618	39.4		31.1	28.6	27.4	23.7	24.4	25.3	29.9	27.4	33.5	29.1	29.1	23.6		
NHM-6	539859	182655	19.9	21.9	17.7	17.6	10.7	11.0	14.7	14.3	28.7	20.9	21.5	16.6	17.9	14.6		
NHM-7	541492	182332	32.7	30.9	28.9	23.7	23.9	17.4	23.7	22.0	27.9	29.0	33.5	29.2	26.9	21.9		
NHM-8	542688	183202	25.9	20.0								23.6	24.6	13.8	21.6	13.7		
NHM-10	539747	181477	27.1	24.3		22.1	17.6	17.5	16.3	16.7	20.5	21.6	27.8	23.2	21.3	17.3		
NHM-11	539623	181230	40.9	39.8		30.5	21.5	21.9	32.0	30.4		35.7	35.3	27.4	31.6	25.7		
NHM-12	543762	180784	26.8	22.0	22.8	22.0	17.5	21.0	18.0	22.0	22.3	27.6	29.5		22.9	18.6		
NHM-13	541134	184098	38.6	45.9	38.8	44.7	36.6		32.9		32.9	42.7	46.1	31.8	39.1	31.8		
NHM-16	539164	185158	39.4	37.5		36.2	31.2	29.3		30.6	29.1	41.4	42.1	33.9	35.1	28.5		
NHM-17	542729	185047	31.3	28.1	25.5	23.1	17.4	21.6	20.2	20.7	23.4	29.0	34.5	27.7	25.2	20.5		
NHM-19	539906	18170	40.1	45.4	39.5	34.8	23.3	27.2	25.7	39.2	47.2	46.9	50.7	45.4	38.8	31.5		
NHM-20	539456	181499	43.2	45.6	32.2	39.8	31.2	29.8	31.6	25.2	14.1	38.4	36.2	36.5	33.7	27.4		
NHM-21	538657	183973	34.7	26.9	26.5	25.2	22.7	21.1	18.6	17.1	23.9	30.2	30.8	24.6	25.2	20.5		
NHM-24	542242	184354				29.4		22.0	25.5	26.5	34.2		36.3	28.9	29.0	27.3		
NHM-25	542242	184354				34.5		28.8	29.0	34.9	48.4	45.6	30.2	27.3	34.8	30.7		
NHM-26	538478	185444	33.2	31.1	33.9	30.5	21.2		33.6	31.9	37.7	39.2	40.1	28.9	32.8	26.7		
LCA01	542154	180286	27.5	24.1	23.2	17.1	21.4	-	17.3	16.4	23.3	25.2	28.3	31.6	23.2	16.5		
LCA02	541941	180303	28.3	22.7	23.6	17.3	24.3	23.3	22.6	21.4	28.4	29.2	-	30.2	24.8	17.6		
LCA04	542267	180710	-	27.0	23.3	18.6	-	19.8	10.9	20.3	22.6	29.8	26.8	35.9	23.7	16.8		
LCA05	542928	180911	25.2	23.5	22.3	15.6	18.7	15.6	7.6	16.8	20.5	20.3	24.5	27.1	19.8	14.0		
LCA06	543724	180867	24.1	23.0	20.9	14.5	20.0	17.7	15.9	16.5	-	23.6	23.3	-	20.0	14.1		
LCA07	543667	180461	29.8	26.4	23.3	20.1	23.8	22.4	21.9	20.7	25.6	28.8	31.5	35.5	25.9	18.4		
LCA10	541760	180424	30.6	35.4	24.8	20.9	27.0	22.7	24.3	23.9	20.7	31.8	31.7	33.3	27.3	19.4		
LCA11	543570	180690	26.5	25.3	24.0	18.8	18.5	18.8	18.1	20.0	21.5	27.6	27.6	34.1	23.5	16.7		
LCA12	542192	180562	28.7	33.5	22.9	15.2	21.3	17.9	19.4	17.7	29.8	29.2	26.3	29.1	24.3	17.2		
LCA13	542274	180768	32.0	25.0	24.9	17.5	21.7	19.2	20.0	16.9	21.8	-	27.1	31.1	23.4	16.6		
LCA14	542066	180716	31.7	27.9	26.4	15.6	21.0	17.3	-	15.6	18.3	28.1	31.8	34.2	24.5	17.3		
LCA15	542300	180862	27.7	24.7	24.1	16.3	19.7	17.5	17.9	16.5	21.2	29.5	28.7	25.8	22.5	16.0		
LCA18	542267	180710	26.4	24.2	22.5	15.3	19.1	15.5	17.2	16.7	19.3	18.4	26.2	27.6	20.8	14.7		
LCA20	541634	180365	33.2	27.5	29.3	22.9	34.5	24.8	-	27.0	36.0	41.1	34.8	30.8	31.4	22.2		
LCA21	543100	180132	24.0	20.6	17.7	13.7	17.1	15.1	14.6	13.9	18.0	22.3	22.5	25.9	18.9	13.4		

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

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

☒ **National bias adjustment factor used.**

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

☒ **London Borough of Newham confirm that all 2024 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.**

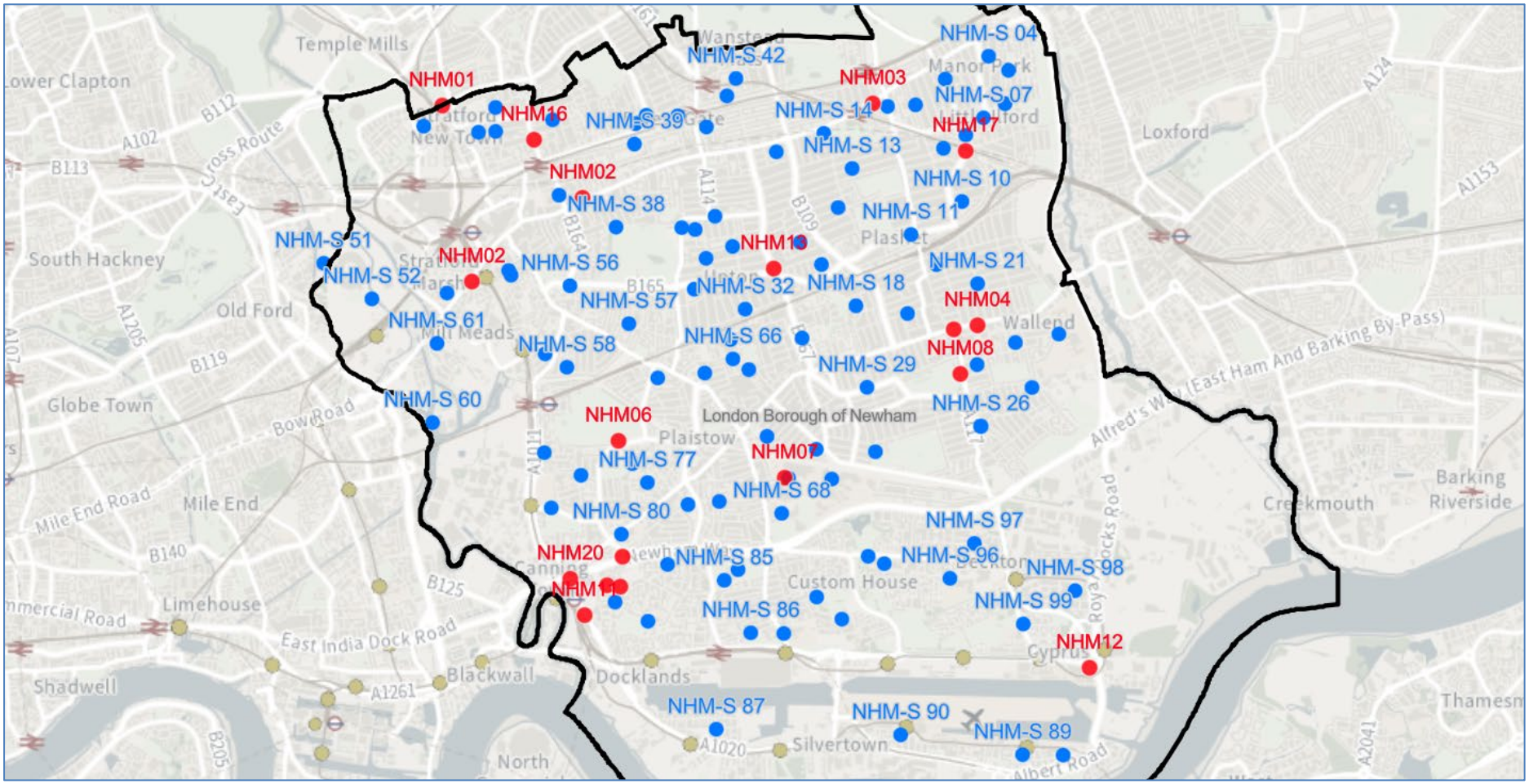
Notes: Exceedances of the NO_2 annual mean objective of 40µg m^{-3} are shown in **bold**.

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**.

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 Sites



Key: ●Long Term Non-Automatic Monitoring Sites (Founded 1997) ●Non-Automatic Monitoring Sites at schools (Founded 2019)

Figure B. **Map of Automatic Monitoring Sites**

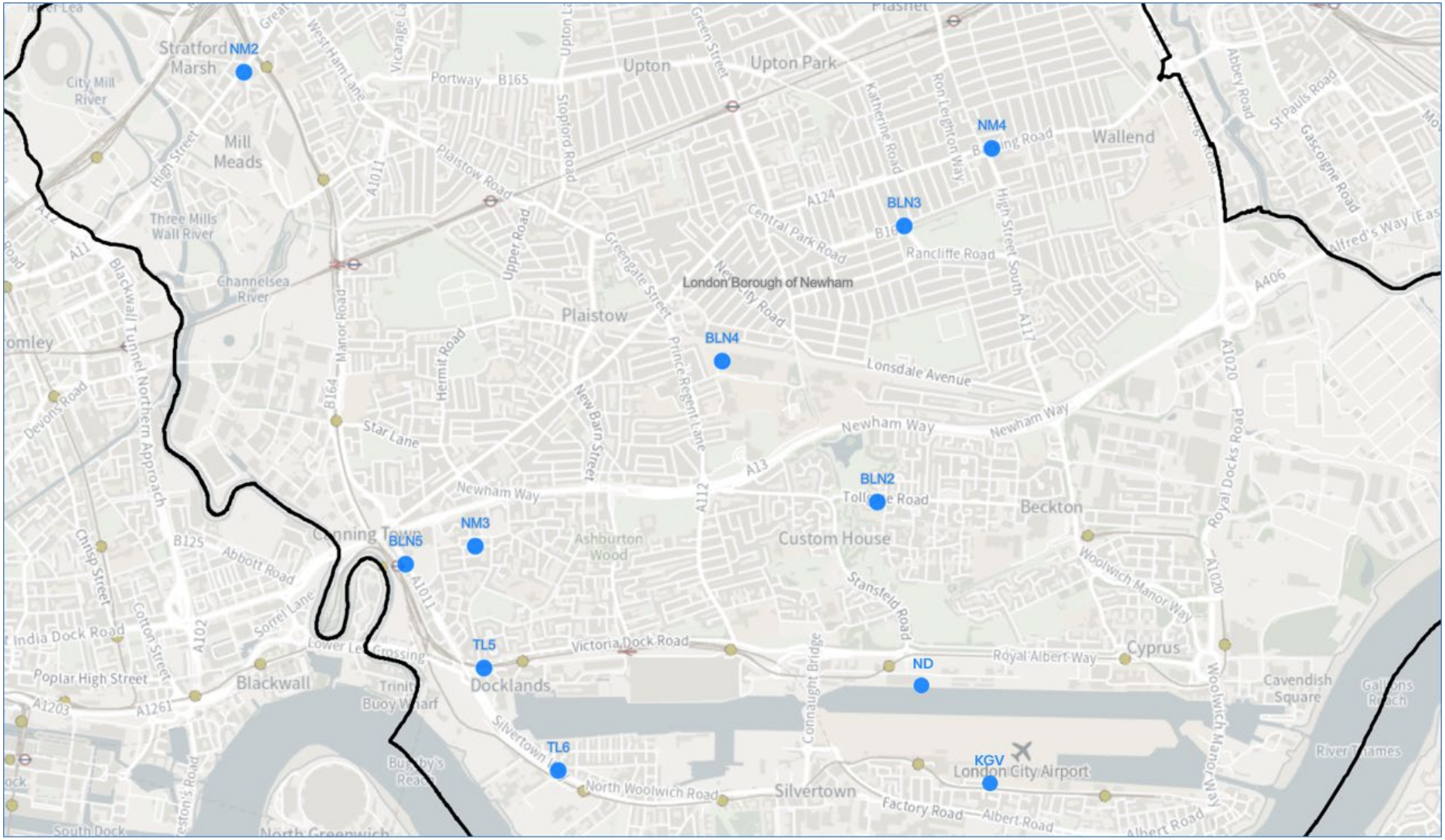
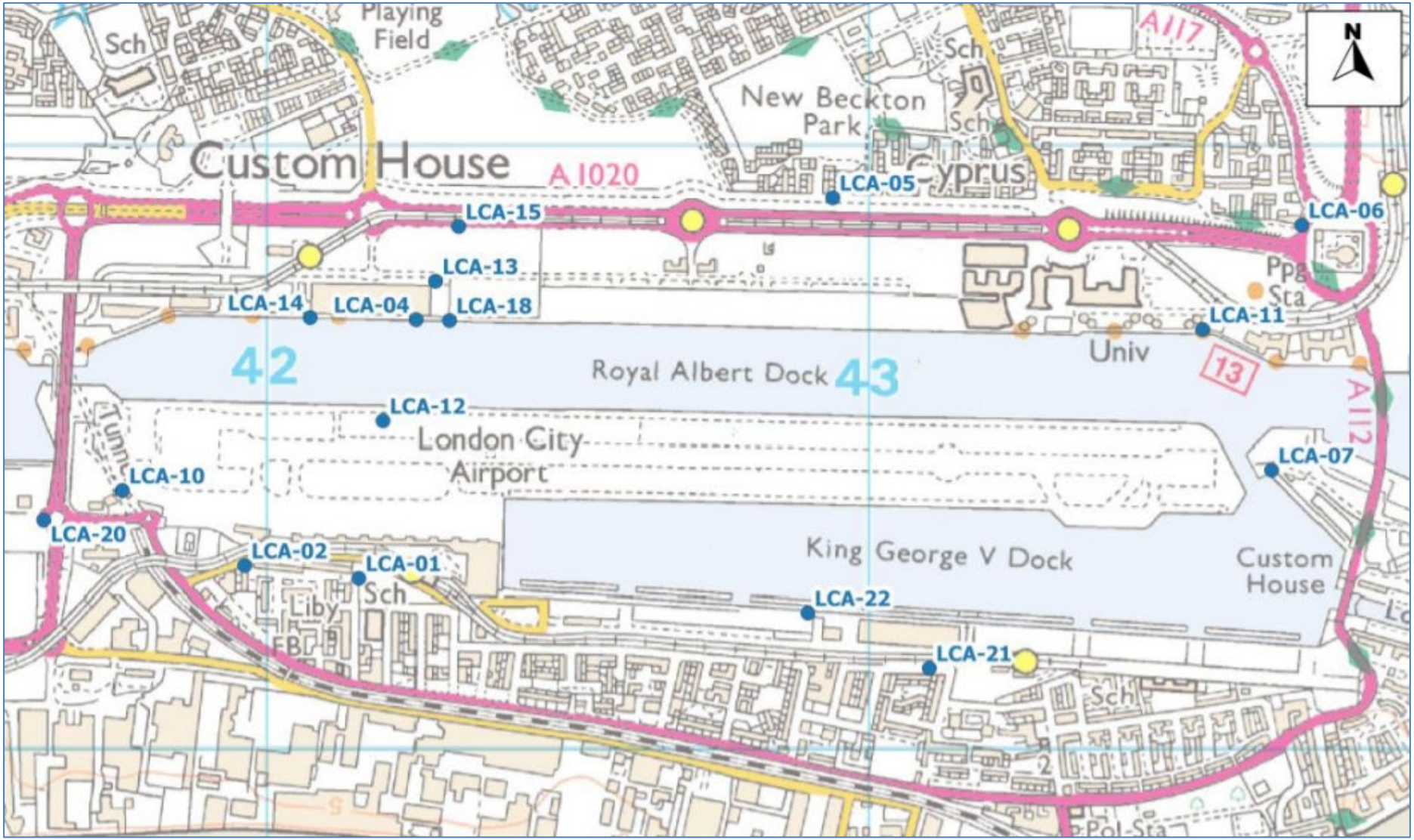


Figure C. **Map of Non-Automatic Monitoring Sites at London City Airport (LCY)**



Redbridge Air Quality Annual Status Report for 2024

Date of publication: July 2025

This report provides a detailed overview of air quality in Redbridge during 2024. It has been produced to meet the requirements of the London Local Air Quality Management (LLAQM) statutory process[1].

Contact details:

[redacted]

[redacted]@redbridge.gov.uk Lynton House (2ndFloor Front)

255-259 High Road, Ilford IG11NY

[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

1.1 Locations

Table B. Details of Automatic Monitoring Sites for 2024

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)	Inlet Height (m)
RB7	Redbridge 7 Ley Street	Urban background	544454.8	187681. 9	NO_2,PM_{10}	Y	Chemiluminescent; BAM	2.0	40.0	2.7
RB4	Redbridge 4 Gardner Close	Roadside	540828.3	188367. 9	NO_2,PM_{10}	Y	Chemiluminescent; BAM	11.0	4.2	2.

Note : In table B above, PM2.5 monitoring at RB4 is done by a PM2.5 unheated BAM instrument located at Gardner Close, and is not approved for measuring PM2.5 in the UK and, as stipulated under paragraph 7.169 within TG22. PM2.5 monitoring at RB4 is for **indicative** purposes only.

Table C. Details of Non-Automatic Monitoring Sites for 2024

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)
DT A	Mayfield School	Urban Background	547022.3	187232.3	NO2	Y	8.0	2.0	N	1.5
DT B	Ilford Lane	Roadside	543688.0	186139.6	NO2	Y	4.0	4.0	N	3.1
DT C	Ilford Lane BP	Roadside	544132.4	184945.6	NO2	Y	3.0	4.0	N	2.7
DT D	Ley Street	Urban Background	544454.8	187681.9	NO2	Y	2.0	40.0	Y	2.7

DT E	Gardner Close	Roadside	540828.3	188367.9	NO2	Y	11.0	4.2	Y	2.6
DT F	Fulwell Cross	Roadside	544560.7	190400.8	NO2	Y	11	1.0	N	1.7
DT G	Perth Road	Roadside	543421.7	188322.6	NO2	Y	3.0	4.0	N	2.8
DT H	West B Eastern Ave	Roadside	543450.6	188371.1	NO2	Y	1.0	4.0	N	2.4
DT I	Central Res	Roadside	543453.7	188384.4	NO2	Y	12.0	3.0	N	2.5
DT J	East B Eastern Ave	Kerbside	543442.0	1888400. 2	NO2	Y	6.0	3.0	N	2.7
DT K	Parham Drive	Near Road	543498.3	188427.6	NO2	Y	7.0	2.0	N	2.6
DT L	NCR North Royston Gardens	Roadside	541816.3	188161.3	NO2	Y	21.0	6.0	N	2.8
DT M	NCR South Wanstead Park	Roadside	541887.8	188136.2	NO2	Y	17.0	0.5	N	3.0
DT N	Ethal Davis School	Near Road	546675.6	188886.1	NO2	Y	2.0	0.0	N	2.8
DT O	Grove Road	Roadside	540025.7	190494.3	NO2	Y	20.0	1.0	N	2.7
DT P	High Road Woodford	Roadside	540076.0	190682.6	NO2	Y	14.0	0.5	N	2.6
DT Q	Chigwell Rd M11	Near Road	541992.1	191799.9	NO2	Y	3.0	3.0	N	2.4

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)
DT R	Winston Way Primary	Roadside	544364.1	186597.4	NO2	Y	0.0	6.0	N	2.8
DT S	Winston Way Gyratory	Kerbside	544360.4	186615.3	NO2	Y	3.0	1.0	N	2.6
DT T	Chadwell Heath Primary	Kerbside	547158.3	187699.4	NO2	Y	4.0	0.0	N	2.8
DT U	Goodmayes Primary	Roadside	546665.3	187046.3	NO2	Y	2.0	3.0	N	2.6
DT V	Isaac Newton Academy	Near Road	545030.2	186919.8	NO2	Y	4.0	0.5		2.6

DT W	Inside Winston Way Prim.	Near Road	544332.3	186571.3	NO2	Y	4.0	1		3.0

1.2 Comparison of Monitoring Results with AQOs

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period %[(a)]	Valid data capture 2024 %[(b)]	2018	2019	2020	2021	2022	2023	2024
RB7	544454.8	187681.9	Automatic Background (Ley Street)		94.5	30.4	30.6	30	21	25	21.5 annualised	15
RB4	540828.3	188367.9	Roadside (Gardner Close)		99.46	38.8	37.4	37	27	**26**	24	22

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%).

Comment data trends:

In general, the NO_2 concentrations monitored at all monitored locations have decreased. This can most likely be attributed to the London wide ULEZ expansion, the impact of EURO vehicle emissions improvements and uptake of ultra-low emission vehicles.

Similarly, RB4 (roadside) and RB7 (background) sites have decreased, are below the limit value and lower than 2023 concentrations at these sites. **Figures C, D, and E** below show in graphical form the NO2 trend decrease in automatic and diffusion tube data between 2018 and 2024.

Table E. Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring (µg 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 2024 (%)([2])	2018	2019	2020	2021	2022	2023	2024
DT A	547022.3	187232.3	Urban Background		100.0	24.9	25.1	20.4	18.6	17.7	17.6	15.9
DT B	543688	186139.6	Roadside		100.0	**45.6**	**43.0**	36.5	34.9	31.6	31.8	29.1
DT C	544132.4	184945.6	Roadside		100.0	**46.9**	**43.2**	34.4	34.7	31.5	31.9	29.1
DT D	544454.8	187681.9	Urban Background		100.0	25.2	25.0	20.7	21.0	19.0	17.8	14.9
DT E	540828.3	188367.9	Roadside		100.0	34.5	35.7	28.0	26.1	25.8	24.0	22.3
DT F	544560.7	190400.8	Roadside		100.0	37.6	37.4	29.4	30.2	27.6	27.6	28.2
DT G	543421.7	188322.6	Roadside		100.0	**51.5**	**42.2**	35.9	34.4	34.7	31.0	29.7
DT H	543450.6	188371.1	Roadside		100.0	**46.8**	**41.3**	37.2	32.5	29.8	31.4	26.3
DT I	543453.7	188384.4	Roadside		100.0	**47.2**	**47.5**	34.7	34.3	32.7	31.2	28.6
DT J	543442	188161.3	Kerbside		100.0	**43.4**	**41.4**	37.1	33.5	33.9	30.1	30.2
DT K	543498.3	188840.2	Near Road		100.0	**45.9**	**43.4**	31.9	34.0	29.7	29.9	27.8
DT L	541816.3	188161.3	Roadside		100.0	**42.2**	36.7	27.6	28.7	22.5	22.3	23.2
DT M	541887.8	188136.2	Roadside		100.0	**68.4**	**61.4**	**50.3**	**45.7**	**40.7**	39.6	38.1
DT N	546675.6	188886.1	Near Road		100.0	26.3	23.5	19.3	18.8	19.4	20.3	17.2
DT O	540025.7	190494.3	Roadside		100.0	**49.5**	**47.4**	**44.7**	**41.3**	28.4	26.8	24.2
DT P	540076	190682.6	Roadside		100.0	38.8	37.6	34.8	32.0	21.8	20.0	20.1
DT Q	541992.1	191799.9	Near Road		100.0	**42.1**	**43.9**	36.7	34.7	22.4	21.5	19.8
DT R	544364.1	186597.4	Roadside		100.0	**57.3**	**54.5**	**53.4**	**47.5**	39.2	39.0	36.3
DT S	544360.4	186615.3	Kerbside		100.0	**58.3**	**55.5**	**54.2**	**45.7**	38.0	38.9	36.2

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 2024 (%)([2])	2018	2019	2020	2021	2022	2023	2024
DT T	547158.3	187699.4	Kerbside		100.0	**47.8**	**43.3**	**44.8**	39.4	32.0	32.6	27.2
DT U	546665.3	187046.3	Roadside		100.0	37.6	36.1	36.5	32.6	25.8	26.9	23.6
DT V	545030.2	186919.8	Near Road		100.0	34.0	32.8	31.1	29.2	21.2	21.0	19.1
DT W	544332.3	186571.3	Near Road		100.0	38.1	35.8	37.1	30.4	23.0	24.0	20.1

☐ **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 µg m^{-3}.

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%).

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period %(a)	Valid data capture 2024 %(b)	2018	2019	2020	2021	2022	2023	2024
RB7	544454.8	187681.9	Automatic Background (Ley Street)		94.5	0	**1**	0	0	0	0	0
RB4	540828.3	188367.9	Roadside (Gardner Close)		99.46	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%)

Figure C: Long term NO2 trends 2018 to 2024 Automatic Station Gardner Close RB4

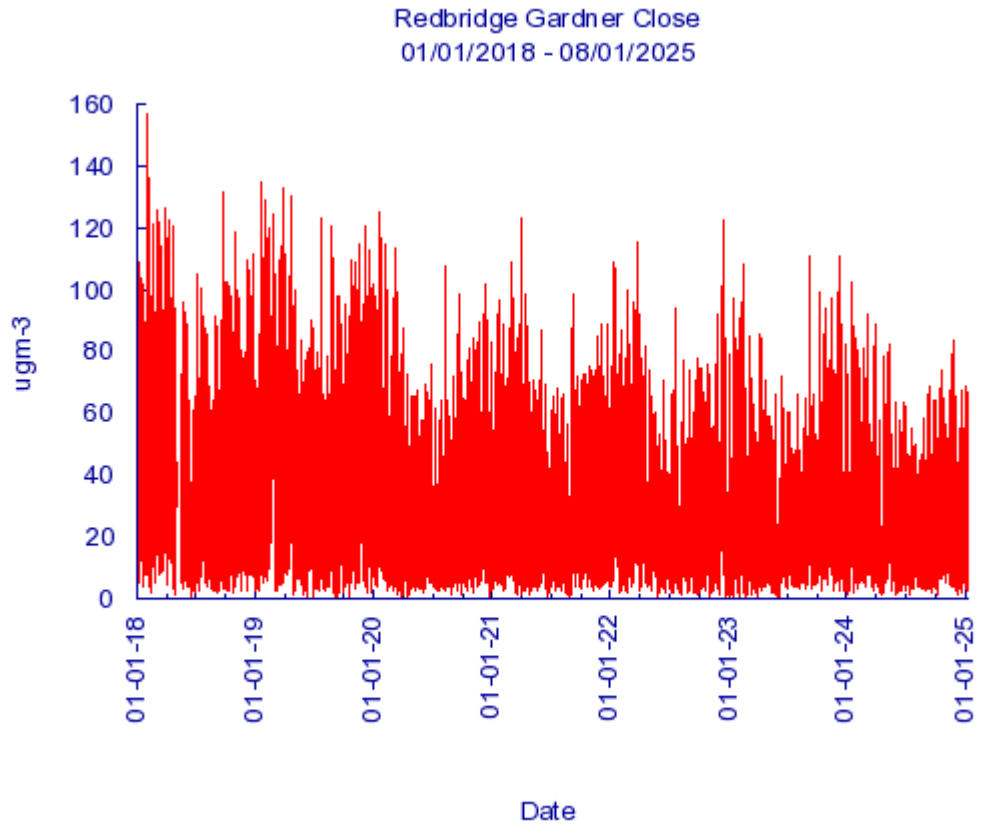


Figure D: Long term NO2 trends 2018 to 2024 Automatic Station Ley Street RB7

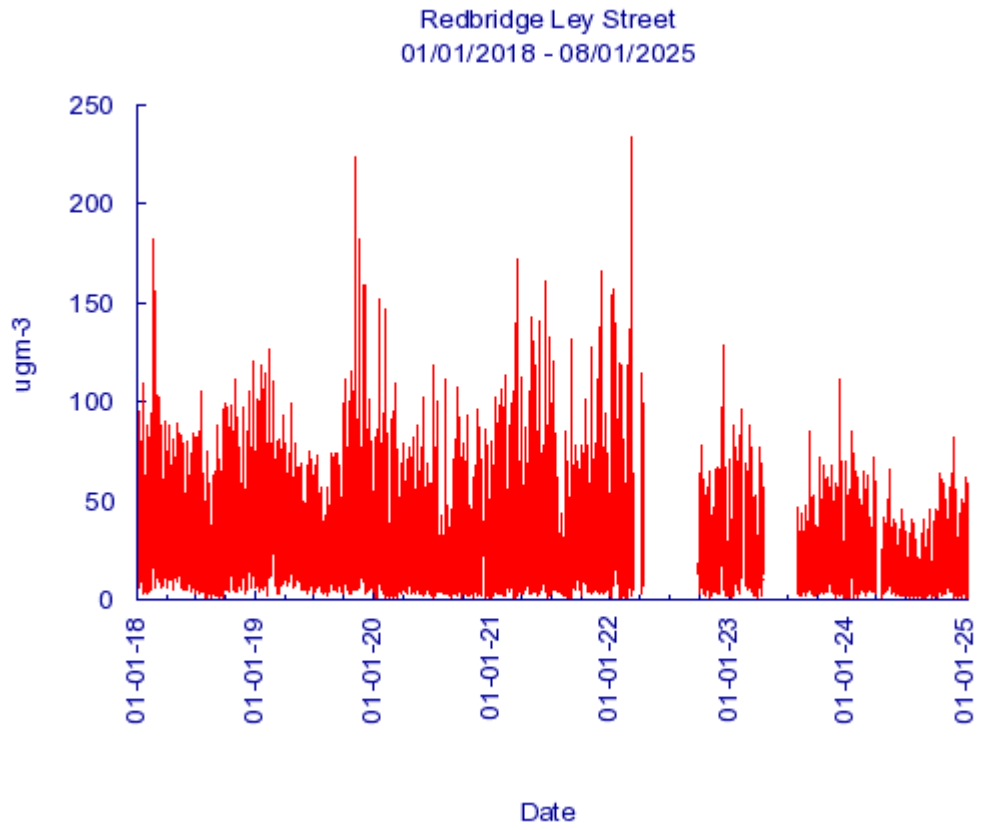


Figure E: Long term NO2 trends 2018 to 2024 Diffusion Tube NO2 annual mean concentrations

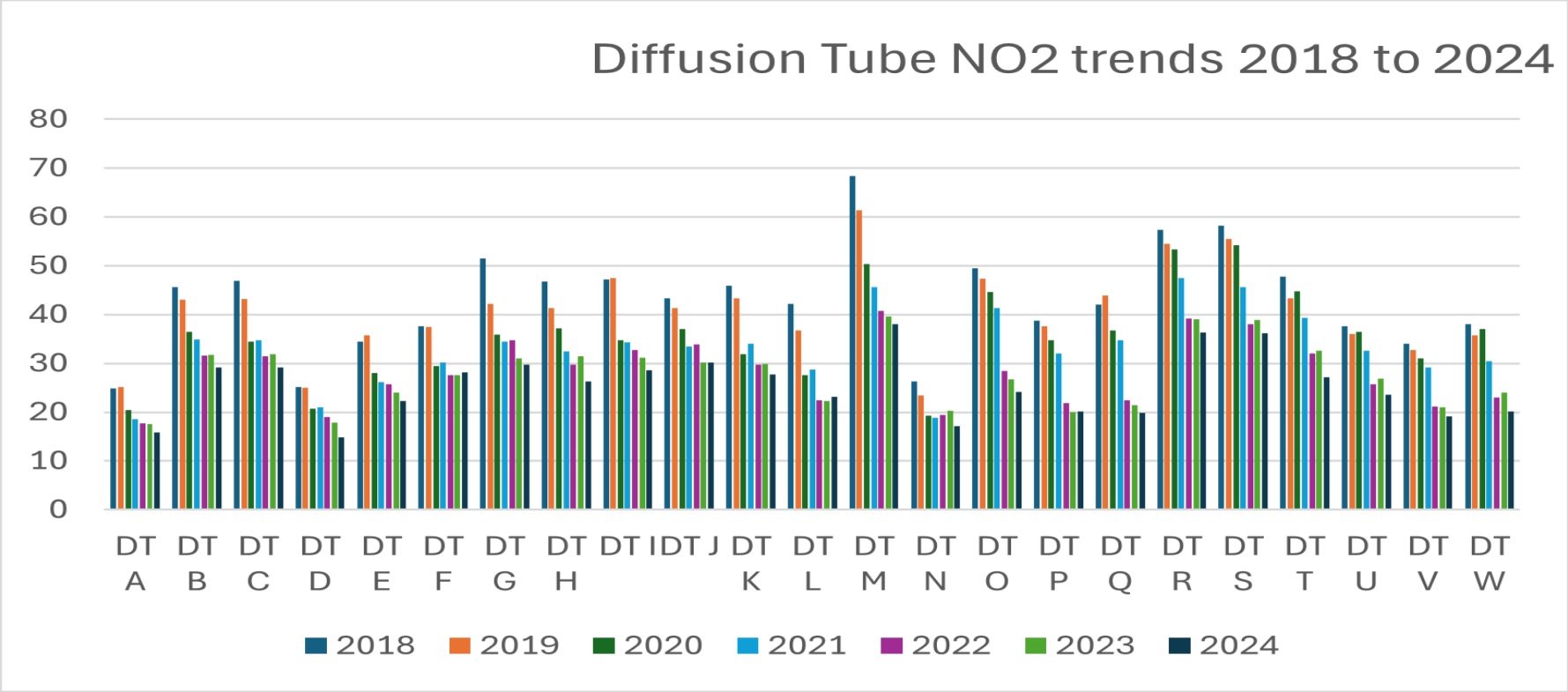


Table G. Annual Mean PM_{10} Automatic Monitoring Results (µg m^{-3})

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period %([a])	Valid data capture 2024 %([b])	2018	2019	2020	2021	2022	2023	2024
RB7	544454.8	187681.9	Automatic Background (Ley Street)		87.63	18	16	15	13.3 (annualised)	15	13	14
RB4	540828.3	188367.9	Roadside (Gardner Close)		90.31	18	19	17	16 (annualised)	-	16	14

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%).

.

RB7 and RB4 had no exceedances of the annual mean objective, and the trend is downwards. AQ objectives met at both sites

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	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period %[(a)]	Valid data capture 2024 %[(b)]	2018	2019	2020	2021	2022	2023	2024
RB7	544454.8	187681.9	Automatic Background (Ley Street)		87.63	1	2	1	- data capture 59%	0	0	0
RB4	540828.3	188367.9	Roadside (Gardner Close)		90.31	1	2	1	- data capture 70%	-	1	0

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%).

RB7 and RB4 had no exceedances of the hourly mean objective, and the trend is downwards. AQ objectives met at both sites

.

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period %[a]	Valid data capture 2024 %[b]	2018	2019	2020	2021	2022	2023	2024
RB7	544454.8	187681.9	Automatic Background (Ley Street)		82.5	12	11	13	10	9	7	6

Notes

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

Exceedances of the $PM_{2.5}$ annual mean AQO of 20 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%).

The 7 year trend of the PM2.5 annual mean at RB7 is decreasing. The 2024 annual mean for PM2.5 is 6 µg m^{-3} which is lower than the pandemic annual means (2020-2021). This result is significantly below the legal limit value of 20 µg m^{-3} and the 2028 target value of 12 µg m^{-3}

Table J. 2024 SO_2 Automatic Monitoring Results: Comparison with Objectives

SO2 is no longer monitored at the Gardner Close location

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

- NO_2 annual mean;
- PM_{10} 24-hour mean;

Table L. 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
Redbridge AQMA	31/12/2003,	Nitrogen dioxide NO_2- Annual Mean Particulate Matter	Borough wide AQMA	YES	NO2 : 55 PM 10: 59 days	None	6 years	AQAP 2020-2025	aqap-2020-to-2025.pdf

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
		PM_{10} - 24-Hour Mean							

☒ **Redbridge confirm the information on UK-Air regarding their AQMA(s) is up to date**

☒ **Redbridge confirm that all current AQAPs have been submitted to GLA**

2.2 Air Quality Action Plan Progress

Table M provides a summary of Redbridge progress against the current Quality Air Action Plan 2020-2025, showing progress made this year. The actions are now complete for the current plan. At the time of writing, Redbridge are in the process of writing a new Air Quality Action Plan for 2026 onwards. Once this has been completed, Redbridge will subsequently report on action progress in the next ASR for 2026. The AQAP progress will be scrutinised and monitored by the council's Air Quality Steering Group

Table M. Delivery of Air Quality Action Plan Measures

Measure	LLAQM Action Matrix Theme	Action	Progress
1	Monitoring and other core statutory duties	Maintenance of monitors, and target to install new monitors subject to available funding	Ongoing. Currently 26 Diffusion tube and 2 AMS sites are located across the borough. A network of Breathe London Nodes have been installed across the borough to monitor the effects of project work outside schools, the efficacy of the Business Low Emission Neighbourhood, and the effects of ULEZ extension.

2	Emissions from developments and buildings	Ensuring major sites have a dust management plan (DMP) and construction management plan (CMP) and appropriate real-time monitoring in accordance with the identified risk of the site	Ongoing. Refer to Table M.
3	Emissions from developments and buildings	Adoption of a Planning Obligations Supplementary Planning Document (SPD) and securing additional funding from developers through s.106 agreements to manage and enforce	Completed. The S106 SPD has been adopted by Redbridge.
4	Emissions from developments and buildings	Educate, raise awareness and enforce Non Road Mobile Machinery (NRMM) air quality policies. This includes compliance inspections as part of the pan-London NRMM project.	Ongoing. Refer to Table M.

5	Emissions from developments and buildings	Air Quality planning requirements met by planning applications Redbridge	Ongoing Refer to Table M.
6	Emissions from developments and buildings	Annual reporting on number of planning applications conditioned for CHP or biomass in line with SPG Guidance	Ongoing Refer to Table M.
7	Emissions from developments and buildings	Enforcing Air Quality Neutral and Air Quality Positive policies for new developments and require Air Quality Assessments	Ongoing, Refer to Table M.
8	Emissions from developments and buildings	Ensuring adequate, appropriate, and well located green space and infrastructure is included in new developments	Planning policy LP29 sets out amenity space for developments. Private amenity space is generally provided as balconies/terraces and is a small space ($5m^2$ for 2-person unit, increasing by $1m^2$ per additional person). Communal amenity space requires

			5m^2 per unit for all developments over 50 units (applied to 10+ unit schemes). Play space is required and often integrated.
9	Emissions from developments and buildings	Promoting and delivering in the Council's own stock energy efficiency retrofitting projects in workplaces and homes using RE:NEW and RE:FIT to replace polluting plant	Ongoing. Measured by the number of eligible buildings to benefit from these programmes and delivery date. Council signed up to Re-fit for the corporate estate. Programme no longer running; new climate policies in development.
10	Public health and awareness raising	Director fully briefed and debriefed annually and at AQ meetings/projects that require Public Health input. AQ included in JSNA and Health and Wellbeing Board priorities	Ongoing. Public Health team contributes to all MAQF school projects through awareness raising via GPs and schools.
11	Public health and awareness raising	Public Health are supporting engagement with local stakeholders	Ongoing. Monthly meetings with Public Health, gaining input into MAQF projects.

		(businesses, schools, community groups, healthcare providers)	
12	Public health and awareness raising	JSNA has up-to-date information on air quality impacts; revised Health & Well Being Strategy	Completed.
13	Public health and awareness raising	Strengthen coordination with Public Health by assigning AQ responsibilities to Consultant grade public health specialist	Completed. Public Health Consultant is the AQ lead.
14	Public health and awareness raising	Engagement with businesses: disseminate AQ information to GPs and pharmacies to reduce exposure	Ongoing. Collating contact details for GP surgeries and pharmacies.
15	Public health and awareness raising	Promotion of airTEXT and London air pollution forecast; track new airTEXT subscribers	Ongoing. Measured by increase in Redbridge users. Interim reports received from AirTEXT

16	Public health and awareness raising	Encourage school participation in TfL STARS and retain/improve rating through MAQF projects	Ongoing. 47% of schools signed up to TfL Travel for Life programme (formerly STARS).
17	Public health and awareness raising	Cleaner walking routes with supported mapping	Ongoing. Promoting sustainable travel and cleaner walking and cycle routes with mapping support. This is available on the Redbridge Council web site.
18	Public health and awareness raising	Reduce school area pollution via MAQF anti-idling, road closures. Extend Mayor's school audits	30 School Streets implemented across the borough as of 2 June 2025.
19	Delivery servicing and freight	Update procurement policies to require Bronze FORS accreditation for large fleet suppliers	Approval has been considered as part of the procurement process for larger fleet service provider contracts.
20	Delivery servicing and freight	Update procurement to prefer bidders delivering goods/services with low emissions	Procurement scoring assessment procedure in place.

21	Borough fleet	Investigate truck accreditation scheme equivalent to FORS for council fleet	Ongoing objective proposed to be included in new AQAP 2026–2031.
22	Borough fleet	Increase electric, hybrid, and cleaner vehicles in borough fleet	Redbridge fleet ULEZ compliant; expanding with ULEZ vehicles subject to funding.
23	Borough fleet	Increase Euro VI diesel vehicles in borough fleet	All but two vehicles are Euro VI diesel; remaining two will be replaced within 12 months.
24	Borough fleet	Smarter Driver Training for fleet drivers; regular retraining and starter programme	Vocational drivers receive LoCity training. Fleet efficiency improved with journey mapping tools.
25	Localised solutions	Expand and improve green infrastructure	Ilford arrival plan redeveloped spaces into green, pedestrian/cycle-friendly areas. 6,970 trees planted in 2024; 6,800 trees proposed for 2025. Includes replacements and new highway/park trees. In 2024 this included: • Redbridge removed and replaced 32 parking metres with new trees.

			• 100 replacement trees planted on LBR Housing Sites. • 6,000 trees in Forest Road Playing Field and Hainault Forest • 777 Replacement trees on the Streets • 12 new trees on the highway • 42 new trees in parks • 7 replacements in housing and schools (Does not include tree planted as part of development, however this is picked up as part of the planning application process for major developments) In 2025 the proposed tree planting: • 100 new/replacement housing trees • 6,000 new in open spaces • 700 Highway tree replacements
26	Localised solutions	Ilford Garden Junction	Ilford Garden Junction complete, Ley Street BLEN complete.
27	Cleaner transport	Discourage unnecessary idling through Pan London campaign and enforcement at schools	"We Care for our Air" campaign raised awareness and reduced idling outside schools (Loxford, Newbury Park, Goodmayes). Redbridge participates in the London-wide Idling Action campaign.

28	Cleaner transport	Promote Car Free Days and road closures	Delivered at Wanstead Festival; further events in discussion with its Leisure service partner Vision RCL for future events.
29	Cleaner transport	Promote free EV parking permit scheme	Completed. Note: as of 1 Feb 2025, no longer subsidised in council car parks.
30	Cleaner transport	Install rapid chargers for taxis/cabs/commercial vehicles with TfL/OLEV partnership	Installing chargers via grants from UBER, ORCS, LEVI Pilot and Capital. (numbers can be seen in additional AQ activities below):
31	Cleaner transport	Provide infrastructure for walking and cycling	Programmes of work have include:. • The Ilford arrival plan will improve connections between Ilford Town, the Roding valley and Western Gateway which will include new walking and cycling routes. • Gants Hill to Redbridge: rolling out segregated cycle lanes on Clarence Avenue, plus raised junctions and speed humps to slow vehicles and create safer, quieter cycle routes

			• Mandatory cycle lanes introduced in Wanstead (e.g., Blake Hall Rd, Aldersbrook Rd) along with widened lanes and safety upgrades designed to link high streets, stations, parks, and neighbouring boroughs redbridge.gov.uk. • Added over 100 cycle parking racks near major high streets (Green Lane, Ilford Lane, South Woodford, Wanstead, etc.) to support multi-modal journeys • Promoting the Roding Valley Way, a signed walking and cycling corridor from Woodford to Ilford • The council's Sustainable Transport Strategy (consultation ended recently) aims for two-thirds of journeys by public transport, walking, wheeling, cycling, or scooting by 2041
32	Cleaner transport	Introduce diesel surcharge for CPZ permits (below Euro 6)	Cancelled due to borough-wide ULEZ. Potential surcharge policy under review.
33	Cleaner transport	Reallocate/restrict road space around schools in high pollution areas	Implemented as part of School Streets.
34	Cleaner transport	Pollution School Superzones	Completed. Funded by GLA.

35	Cleaner transport	Solar panels on 26 minibuses, 15 nuscats, 5 vans	Completed. Dust carts and lorries will require future review.
36	Cleaner transport	Pilot electric dust cart	Pilot completed with Scania Renault and Electra. Council will not proceed with procurement at this point. Fleet Services to explore alternative options for cleaner dustcarts.

Top 3 Air Quality Actions:

Redbridge is currently in the process of drafting a new Air Quality Action Plan:

Our top 3 air quality actions will be focussed on:

1. To increase electric vehicles and charging facilities across the borough aligning with the Governments Net Zero policy.
2. To align more of our actions in with our Climate Strategy to reduce CO2 emissions as well as NOX and PM.
3. To be ambitious towards achieving further reductions that are closer to the WHO Standards. The actions for these ambitions will evolve in our new Air Quality Action Plan after they have been discussed with our cabinet member and Air Quality Action Steering Committee**.**

3. Planning Update and Other New Sources of Emissions

Table N. Planning requirements met by planning applications Redbridge in 2024

Condition	Number
Number of planning applications where an air quality impact assessment was reviewed for air quality impacts	95
Number of planning applications required to undertake construction dust monitoring and reporting (Please specify how you get access to dust monitoring data i.e. online tool or CSV file)	69
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 as detailed in Air Quality Neutral LPG (london.gov.uk) point 3.1.5.	0
Number of developments required to install Ultra-Low NO_x boilers	37
Number of developments where an AQ Neutral building and/or transport assessments undertaken	57
Number of developments where the AQ Neutral building and/or transport assessments not meeting the benchmark and so required to include additional mitigation	2
Number of planning applications with S106 agreements including other requirements to improve air quality	0
Number of planning applications with CIL payments that include a contribution to improve air quality	0
NRMM: Central Activity Zone, Canary Wharf and Opportunity Areas Number of planning applications with conditions related to NRMM included. Number of developments registered at www.nrmm.london. Number of audits (based on the pan-London project report and / or inhouse auditing program) % of sites unregistered prior to audit % of sites 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 planning applications with conditions related to NRMM included. Number of developments registered at www.nrmm.london. Number of audits (based on the pan-London project report and / or inhouse auditing program)% of sites unregistered prior to audit % of sites compliant with Stage IIIB of the Directive and/or exemptions to the policy.	NRMM Conditions 16 Number of Audits : 16 Self-compliant : 4 Non-compliant: 0 No NRMM: 2 Site Complete 1

4. Additional Activities to Improve Air Quality

4.1 London Borough of Redbridge Fleet

There are 285 vehicles in Redbridge's fleet 11 are electric and 5 are hybrid. Redbridge are seeking to increase the number of electric, hybrid and cleaner vehicles in the boroughs' fleet. Redbridge are compliant with the ULEZ standard.

The figures for number electric chargers installed up to 2025 are:

Slow (<7kW) 233

Fast (7-22kW) 230

Rapid (22-50kW) 4

Ultra-rapid (<50kW) 2

Total 469

4.2 Redbridge School Streets

The Council has introduced clean air zones, known as School Streets, around some Redbridge Schools as part of our plans to deliver a healthier, safer, greener and cleaner borough.

Redbridge School Streets aim to:

- Reduce air pollution around our schools, making the air children breathe cleaner;

- Protect children from the dangers of traffic at the school gate, preventing accidents and keeping children safe;
- Encourage families to walk and cycle to school, improving health and fitness.

Redbridge School Streets prevent non-residential vehicle traffic from outside the zone from entering School Street zones and travelling past schools during school start and finish times, during term time only.

Vehicles parked within the School Streets zone can exit the School Streets zone without penalty, at any time, even during the restricted period.

Residents and business located within the zone are entitled to a free vehicle exemption allowing them to enter the area during restricted times.

Across Redbridge there are currently twenty-six School Streets schemes in operation at twenty-six schools and results show they have been successful at reducing traffic at the school gate, making the area safer for children and encouraging them to walk, scoot and cycle to school.

4.3 We Care for Our Air Project

Redbridge Council was awarded funding from to help reduce air pollution to make the borough’s air cleaner and healthier for local people. The funding, announced on 9 February 2023 by the Department of Environment, Food and Rural Affairs (DEFRA), supported the Council's drive to improve air quality in the borough.

The project entitled **We Care for Our Air** delivered several initiatives, encouraging and supporting local people and businesses to take part in active travel schemes. The project also bolstered information and knowledge about Redbridge's air quality, focusing on children and vulnerable groups who are particularly susceptible to poor air quality.

Monitoring air pollution is crucial to understanding the risk that poor air quality poses. The project increased the number of Breathe London air quality monitors across the borough while enabling the Council to develop interactive air quality maps using data gathered by the community. The project also helped deliver cycle

training and additional school cycle storage for pupils and parents and contributed to a reduction in anti-idling across various locations in Redbridge through awareness raising actions.

4.4 Planning Enforcement

All major planning applications and developments where future occupants may be exposed to poor air quality are reviewed by planning and environmental. Where deemed appropriate they are conditioned accordingly to address the relevant air quality impacts and mitigation is proposed to control these impacts before planning permission is granted.

4.5 Pan-London NRMM Auditing Project

Redbridge is continuing to support the pan-London NRMM auditing project in 2025-2026.

The standard wording used by Redbridge Planning department for NRMM conditions is as follows:

(Non-Road Mobile Machinery): No NRMM shall be used on the site unless it is compliant with the NRMM Low Emission Zone requirements (or any superseding requirements) and until it has been registered for use on the site on the NRMM register (or any superseding register).

Reason: To ensure that air quality is not adversely affected by the development in line with London Plan policy SI 1 and the Mayor's SPG: The Control of Dust and Emissions during Construction and Demolition.

This is applied to all major planning applications.

4.6 Air Quality Alerts

Redbridge currently supports airTEXT (https://www.airtext.info/)

Redbridge also cascades the Mayor's air quality alert messaging.

Appendix A Details of Monitoring Site Quality QA/QC

A.1 Automatic Monitoring Sites

Air quality monitoring data provides a measure of actual concentrations and therefore exceedances of air quality objectives. Data also provides information on trends in air pollution and can provide the basis for verifying the various models used to predict future pollution levels.

In 2024 London Borough of Redbridge undertook automatic monitoring at the following two sites:

- CM7 - Redbridge 7 (Ley Street) located northeast of Ilford – an urban background site within the Ley Street Depot that is sited on Ley Street. The site monitored nitrogen dioxide, PM10 (by BAM), and ozone. Since 2016 this site began monitoring PM2.5 (by BAM). Redbridge 7 (Ley Street) was set up in 2014, and is also identified in this report as CM7.

- CM4 - Redbridge 4 (Wanstead) – an urban traffic site close to the A12 towards the southwest of the Borough. The site started operating in November 1999. The site monitors nitrogen dioxide, PM10 and PM2.5 (both by BAM). Until March 2012 it also monitored carbon monoxide and sulphur dioxide.

The sites represent relevant exposure within the Borough. The sites are part of the London Air Quality Network for 2023 and therefore the standards of QA/QC are similar to those of the government's AURN sites. Fortnightly local site operator (LSO) zero/span calibrations of the gas analysers are carried out by the local authority, with subsequent data collection, validation and ratification undertaken by Ricardo. In all cases the data are fully ratified unless reported otherwise. Details of the sites can be found at Air quality in England

UKCAS accredited independent site audits are carried out every 6 months by the National Physics Laboratory (NPL). Additional six monthly equipment service visits by Enviro Technology Services Plc.

The Council previously operated three other automatic monitoring stations in the Borough: Redbridge 2 - a roadside site on Ilford Broadway closed in 2003,

Redbridge 3 – a kerbside site at Fulwell Cross closed in 2012, and Redbridge 5 – a roadside site in South Woodford closed in2012

PM10 Monitoring Adjustment

The LLAQM.TG16 guidance highlights that Met-One PM10 Unheated BAM 1020 instruments conform to the equivalence criteria relating to the gravimetric European reference method. A correction using a factor of 1.2 is automatically applied to adjust for slope.

A.2 Diffusion Tubes

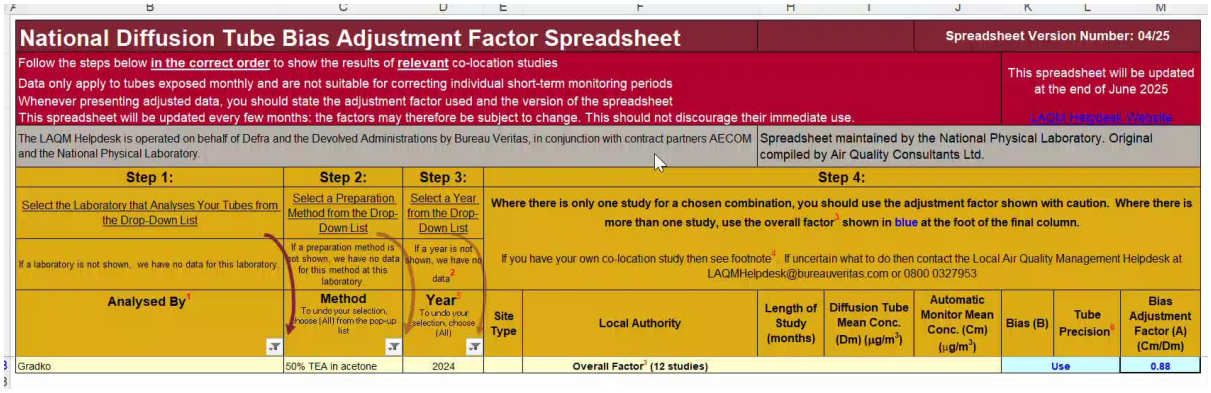
Diffusion Tubes are prepared and analysed by UKAS accredited Gradko International Ltd. • Diffusion Tubes are prepared using 50% triethanolamine with acetone method and analysed using UV spectrophotometry

▪ The lab follows the procedures set out in the Defra Technical Guidance for LAQM TG (22).

• For details attaining to 'results' – precision, bias adjustment factors; and reference methods are as follows: Results of laboratory precision (tube precision and WASP results): The LAQM website gives the following precision results for Gradko 50% TEA in acetone: 2024 Good (12 studies)

The laboratory performance of Gradko International was tested in July to August 2021 to July to August 2023 under AIR NO2 PT Rounds AR045, AR046, AR049, AR050 , AR052, AR053, AR055, AR056 and AR058. The performance was 100% in all rounds.

The version of the bias adjustment factor database used is: 04/25



National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 04/25

Follow the steps below **in the correct order** to show the results of **relevant** co-location studies
Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods
Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet
This spreadsheet will be updated every few months: the factors may therefore be subject to change. This should not discourage their immediate use.

This spreadsheet will be updated at the end of June 2025

LAQM Helpdesk Website

The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.

Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.

Step 1:	Step 2:	Step 3:	Step 4:
Select the Laboratory that Analyses Your Tubes from the Drop-Down List	Select a Preparation Method from the Drop-Down List	Select a Year from the Drop-Down List	Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor[3] shown in blue at the foot of the final column.
If a laboratory is not shown, we have no data for this laboratory	If a preparation method is not shown, we have no data for this method at this laboratory	If a year is not shown, we have no data[2]	If you have your own co-location study then see footnote[4]. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953

Analysed By[1]	Method (To undo your selection, choose (All) from the pop-up list)	Year[5] (To undo your selection, choose (All))	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m³)	Automatic Monitor Mean Conc. (Cm) (µg/m³)	Bias (B)	Tube Precision[6]	Bias Adjustment Factor (A) (Cm/Dm)
Gradko	50% TEA in acetone	2024		Overall Factor[3] (12 studies)				Use		0.88

Factor from Local Co-location Studies

Gardner Close local bias adjustment factor 0.86, good precision and good data capture.

Ley Street local bias adjustment factor 0.91, good precision and good data capture.

Using the Diffusion Tube Data ~Processing tool v5.4 2004, the combined local bias adjustment factor from Ley Street and Gardner Close was 0.88 with good overall precision and data capture.

Discussion of Choice of Factor to Use

The local bias adjustment factor is 0.88 and the national factor is 0.88. The national factor was derived from 12 studies, so this factor has been chosen.

Table O. Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	National	04/25	0.88
2023	National	06/24	0.83
2022	National	06/23	0.82
2021	National		0.82
2020	National		0.83
2019	National		0.89
2018	National	-	0.92
2017	National	-	0.97

A.3 Adjustments to the Ratified Monitoring Data

Short-term to Long-term Data Adjustment

N/A

Table T. 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
DT M	0.5	17.5	38.1	18.8	26	
DT S	1.0	4.0	36.2	17.3	30.9	

Appendix B Full Monthly Diffusion Tube Results for 2024

Table U. NO_2 2024 Diffusion Tube Results (µg m^{-3})

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 <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
DT A	547022	187232	21.5	20.3	18.2	17.4	15.3	13.4	14.0	15.8	14.0	25.0	24.4	15.7	17.9	15.9	-	
DT B	543688	186140	37.7	32.2	26.8	40.0	35.6	34.6	29.9	28.9	25.3	41.2	37.6	24.3	32.8	29.1	-	
DT C	544132	184946	40.7	30.1	31.1	34.7	30.7	36.0	32.6	29.5	28.5	41.0	36.1	23.5	32.9	29.1	-	
DT D	544455	187682	21.1	21.0	15.2	12.6	16.1	12.1	13.5	12.4	14.5	25.3	22.2	15.5	16.8	14.9	-	
DT E	540828	188368	32.8	25.2	27.1	23.4	22.4	24.7	20.8	23.4	16.4	37.0	29.6	20.3	25.2	22.3	-	
DT F	544561	190401	32.4	30.2	27.3	39.5	26.3	30.3	35.1	26.5	30.8	38.3	39.9	26.3	31.9	28.2	-	
DT G	543422	188323	45.8	36.3	33.7	22.3	31.2	35.2	33.1	20.3	27.8	53.3	24.1	39.9	33.6	29.7	-	
DT H	543451	188371	26.2	31.0	26.3	27.6	37.8	36.7	20.3	24.6	22.9	36.8	30.6	35.3	29.7	26.3	-	
DT I	543454	188384	36.1	46.9	25.7	37.6	40.0	33.7	24.8	24.3	26.4	34.8	27.7	29.2	32.3	28.6	-	
DT J	543442	188161	37.6	33.3	30.0	27.4	21.2	47.7	32.8	32.9	29.7	42.9	32.8	41.4	34.1	30.2	-	
DT K	543498	188840	34.8	28.6	20.1	39.0	20.9	35.0	28.9	31.9	28.3	48.0	26.3	34.9	31.4	27.8	-	
DT L	541816	188161	31.8	36.9	21.1	28.4	27.3	23.9	25.3	22.1	22.8	31.8	27.9	15.3	26.2	23.2	-	
DT M	541888	188136	49.1	37.7	39.1	52.1	43.6	46.0	40.7	42.4	33.8	51.3	45.9	35.5	43.1	38.1	26.0	
DT N	546676	188886	26.1	25.9	17.4	22.6	16.5	15.4	17.2	16.2	13.3	24.9	21.0	17.2	19.5	17.2	-	
DT O	540026	190494	35.6	19.6	29.1	32.4	23.8	28.4	24.9	17.2	20.9	40.2	33.0	22.5	27.3	24.2	-	
DT P	540076	190683	30.7	24.2	19.2	22.1	20.3	17.9	16.4	29.5	16.2	32.2	25.4	18.3	22.7	20.1	-	
DT Q	541992	191800	26.8	30.8	22.1	27.6	15.3	20.9	21.8	21.2	15.4	26.7	20.9	19.1	22.4	19.8	-	
DT R	544364	186597	46.4	38.5	36.5	51.7	42.3	44.6	37.7	39.6	33.0	48.2	44.3	29.7	41.0	36.3	-	
DT S	544360	186615	46.8	37.4	37.3	47.7	43.1	45.6	43.0	40.8	28.5	48.1	39.3	32.6	40.9	36.2	30.9	
DT T	547158	187699	46.1	31.8	34.2	37.0	33.3	25.3	22.5	26.1	21.0	33.3	33.2	25.6	30.8	27.2	-	
DT U	546665	187046	37.2	23.7	24.4	28.7	25.3	25.0	25.7	22.7	20.3	36.7	26.7	24.0	26.7	23.6	-	
DT V	545030	186920	31.0	20.4	21.8	22.3	21.8	16.7	15.8	18.9	16.0	25.0	28.3	20.8	21.6	19.1	-	
DT W	544332	186571	28.1	26.4	21.7	29.1	20.8	17.9	17.8	19.6	19.8	30.0	19.8	22.3	22.8	20.1	-	

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

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

☒ **National bias adjustment factor used**

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

☒ **Redbridge Council confirm that all 2024 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**.

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)

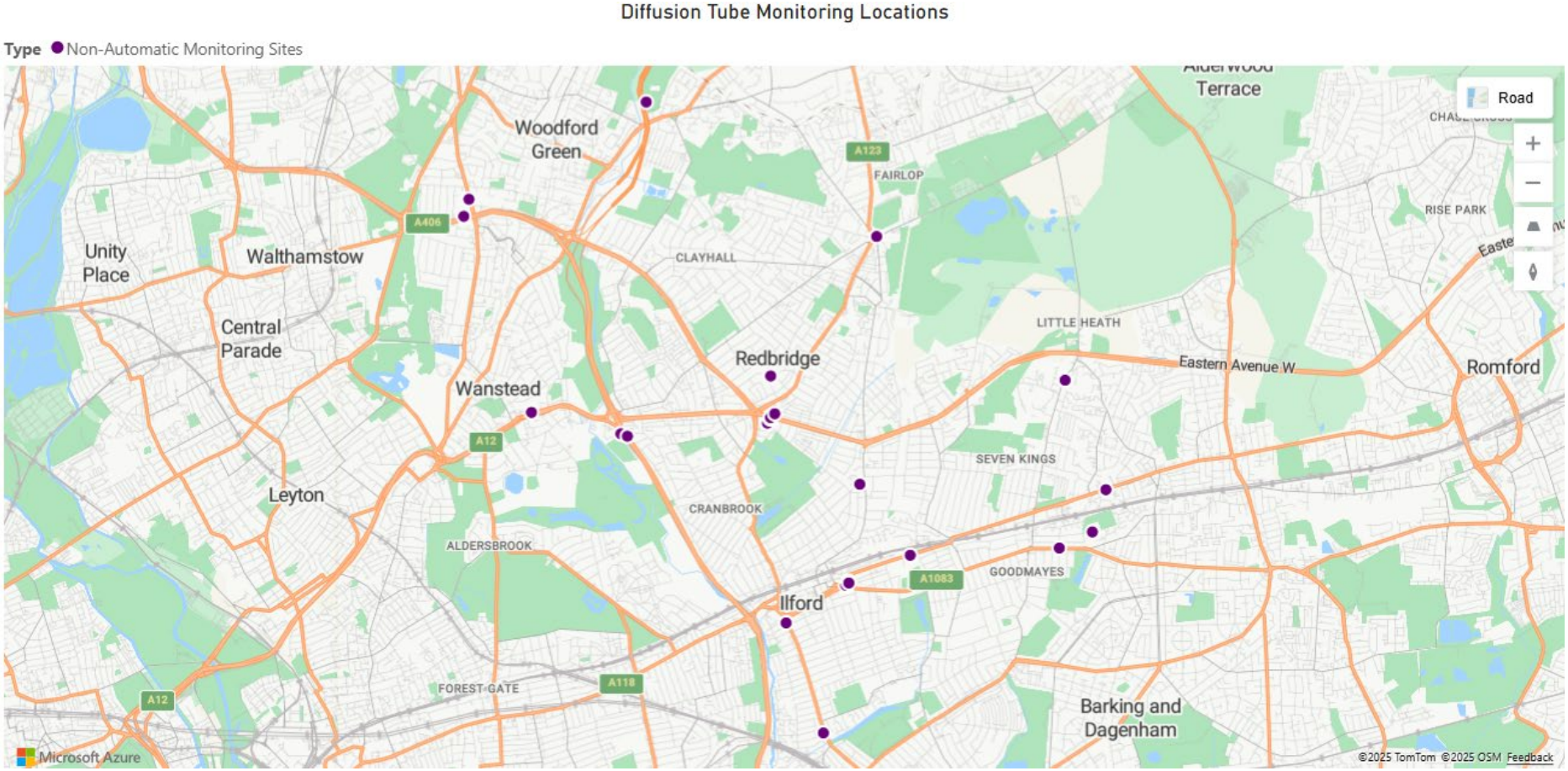


Figure B. Map of Automatic Monitoring Site(s)

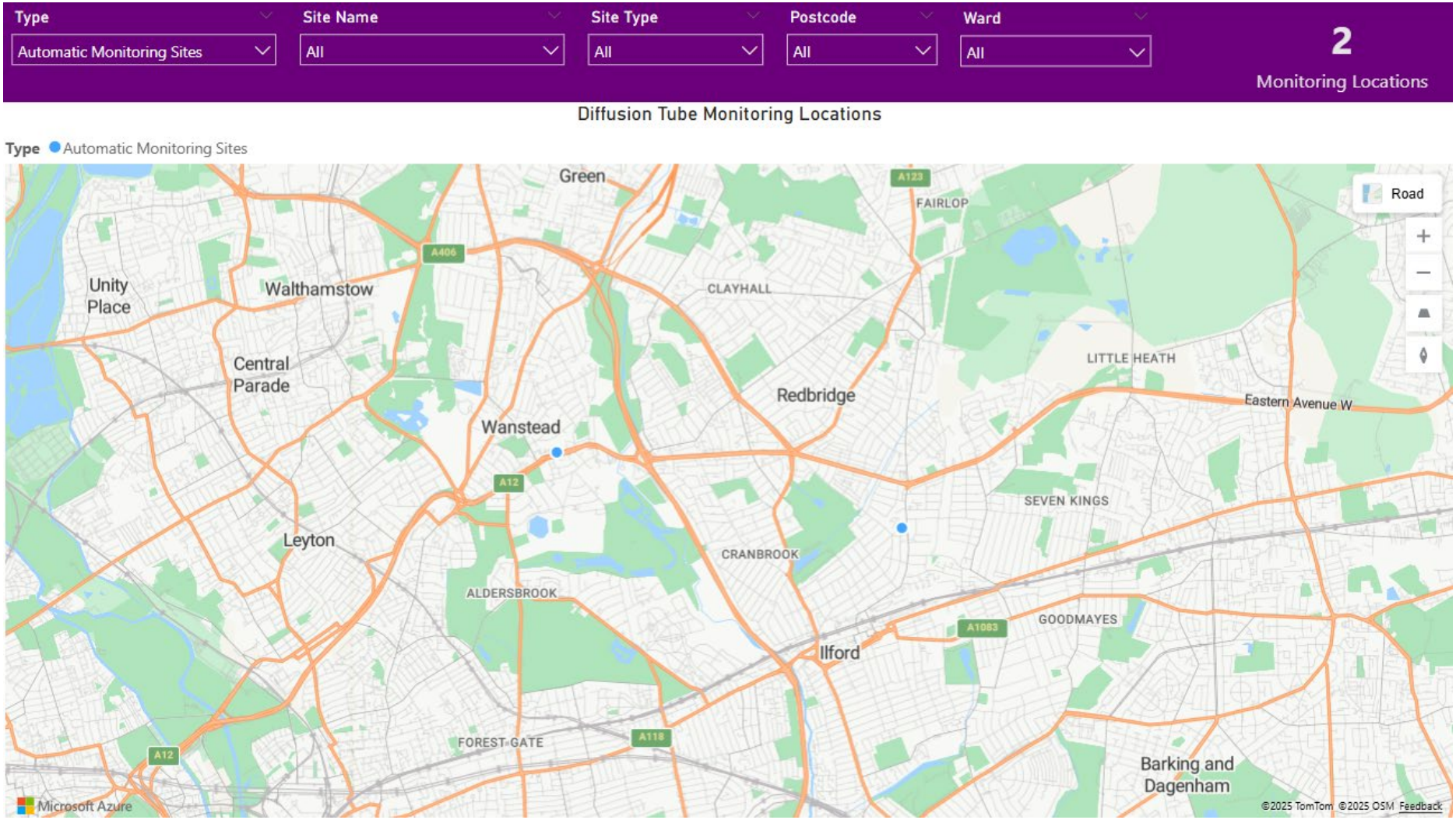
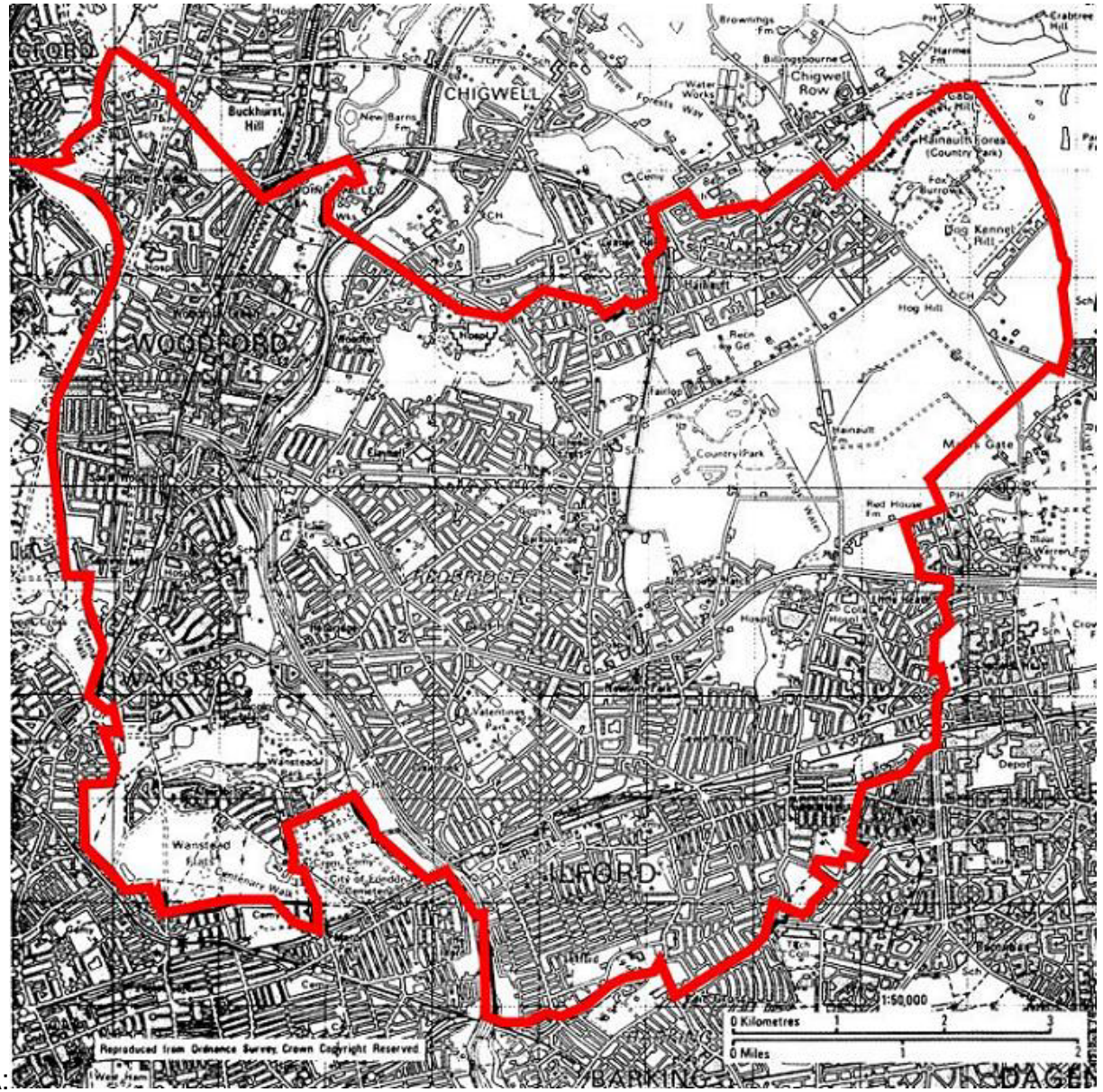


Figure F. Map of AQMA:



London Borough of Richmond upon Thames
Air Quality Annual Status Report for 2024
Date of publication: 30th May 2025

This report provides a detailed overview of air quality in the London Borough of Richmond upon Thames during 2024. It has been produced to meet the requirements of the London Local Air Quality Management (LLAQM) statutory process[1].

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

Contact details:

Local Authority Officer	[redacted]
Department	Air Quality & Contaminated Land Team, Regulatory Services Partnership
Address	Civic Centre, 44 York Street, Twickenham, TW1 3BZ
Telephone	[redacted]
e-mail	[redacted]@merton.gov.uk
Report Reference number	Richmond_ASR_2025
Date	30th May 2025

Executive Summary

The London Borough of Richmond upon Thames is committed to improving air quality in the Borough. The Council is demonstrating its political leadership; taking action; leading by example; monitoring air quality; using the planning system; integrating air quality into the public health system, delivering the co-benefits to Climate Change and informing the public. This 2025 Annual Status Report reviews recent air quality monitoring in the Borough in accordance with Defra LAQM guidance. In doing so, it fulfils one further aspect of this ongoing commitment.

The report identifies that:

For carbon monoxide, benzene, 1 3-butadiene, lead and sulphur dioxide, there is not a significant risk of the objectives being exceeded in the Council's area.

In December 2000, the Council designated an Air Quality Management Area (AQMA) across the whole Borough for nitrogen dioxide and particulatess (specifically PM_{10}). The findings from this report indicate that the AQMA should be maintained.

In view of the findings from the report, the Council will undertake the following actions:

1. Consultation with the statutory and other consultees as required.
2. Maintain the existing monitoring programme.
3. Update and implement its Air Quality Action Plan in pursuit of the AQS objectives.
4. Prepare for the submission of its next Air Quality report.

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

The latest monitoring results for 2024 confirm that air pollution in the London Borough of Richmond upon Thames still exceeds the Government Air Quality objectives at one location. As pollution levels can fluctuate one year to the next, there is still a need for LBRuT to be designated as an AQMA and to pursue improvements in air quality. To clarify, the borough-wide AQMA has declared exceedances of the annual mean objective for NO_2 and for exceedance of the annual and 24-hour mean objectives for PM_{10} (i.e. the AQMA covers both long-term and short-term PM_{10} objectives). LBRUT also recognise the need for stricter objectives following changes to the World Health Organisation Guidelines on key pollutants announced on the 22nd September 2021 and have made a commitment within its new AQAP to achieving the WHO interim guidance levels.

The Council (and NPL for $PM_{2.5}$) routinely monitor the pollutants below:

- NO_2
- PM_{10}
- Ozone (O_3)
- $PM_{2.5}$

The Council previously monitored SO_2 (ceased in April 2011), CO (ceased in April 2012), and Benzene (ceased in January 2012), therefore these are not included in this report. Please see previous Council reports for further information. The LBRuT have complied with UK limit values for these pollutants for a minimum of 3 years prior to cessation of monitoring.

1.1 Locations

Automatic Monitoring Sites

Our continuous monitors collect real time data, which are stored as 15-minute 'means' and can then be converted into the various averages. This type of equipment provides accurate real time measurements of pollution levels, but is expensive, so using them for a large coverage of LBRuT would be cost prohibitive.

The sites (see Table B) are also representative of relevant exposure either at the site or very close by. The two Richmond operated sites are reported on the Imperial College London Air Quality Network, as is the site at the National Physical Laboratory (NPL). This site is also part of the government's UK Automatic Urban and Rural Network (AURN). Unfortunately, in 2024 there appears to be no data for the NPL site from 10 Oct 2023 – 27 Nov 2024, so data for 2024 has been recorded as not available (N/A). This is outside the local authority's control. If data capture improves for 2025 it will again be included in the 2026 report.

All data undergoes quality assurance and quality control (QA/QC) procedures to ensure that the data obtained is of a high quality. The standards of QA/QC at the LAQN sites are similar to those of the government's AURN sites. For QA/QC purposes, all the continuous analysers are manually checked and calibrated every four weeks, serviced every six months. More details can be found at https://www.londonair.org.uk/LondonAir/Default.aspx

Table B. Details of Automatic Monitoring Sites for 2024

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)
RI1	**Castlenau** Library, Barnes	Roadside	522500	177166	NO2, PM10	Yes	LBRuT	Chemiluminescent; TEOM	8.0	3.3	2.4
RI2	**Wetland Centre**, Barnes	Urban Background	522993	176731	NO2, PM10, O3	Yes	LBRuT	Chemiluminescent; TEOM	10.0	482.52	3.2
TD5	**NPL -** Teddington AURN	Suburban	522993	176731	PM10, PM2.5	Yes	LBRuT	FDMS, FIDAS	2.0	13.0	12.0

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

Table C. Details of Non-Automatic Monitoring Sites for 2024

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)	Distance to Kerb of Nearest Road (m)	Tube Co-located with a Continuous Analyser	Height (m)
1	Hampton Court Rd, Hampton (nr Bushy Pk gates)	Roadside	515824	168815	NO2	LBRuT	1.9	1.7	No	2.2
2	Percy Rd, Hampton (nr. level crossing/Waitrose)	Roadside	513217	169746	NO2	LBRuT	3.0	1.3	No	2.2
4	Hampton Rd, Hampton Hill (nr. Laurel Dene)	Kerbside	514607	171258	NO2	LBRuT	9.8	0.6	No	2.2
7	Broad St, Teddington (o/s Boots)	Kerbside	515695	170983	NO2	LBRuT	2.5	0.8	No	2.2
9	Hampton Rd, Twickenham (nr Fifth Cross Rd)	Kerbside	514846	172348	NO2	LBRuT	2.0	0.6	No	2.2
10	Twickenham Rd, Twickenham (opp. Fulwell golf course)	Kerbside	513390	172233	NO2	LBRuT	7.2	0.6	No	2.2
11	Percy Rd, Whitton (nr. Percy Way)	Kerbside	514136	173389	NO2	LBRuT	9.1	0.6	No	2.2
12	Hanworth Rd, Whitton (nr Lyndhurst Ave)	Kerbside	512612	173439	NO2	LBRuT	7.4	0.6	No	2.2
13	Whitton Rd, Whitton, (opp. rugby ground)	Kerbside	515228	174082	NO2	LBRuT	6.3	0.8	No	2.2
15	Richmond Rd, Twickenham (opp. Marble Hill Pk)	Kerbside	517196	173933	NO2	LBRuT	1.8	0.6	No	2.2
17	Red Lion Street, Richmond	Kerbside	517822	174755	NO2	LBRuT	2.0	1.2	No	2.2
18	Lower Mortlake Rd, Richmond (nr Trinity Rd)	Kerbside	518822	175590	NO2	LBRuT	9.3	0.9	No	2.2
19	Kew Rd, Kew (nr. Walpole Av)	Kerbside	518643	176156	NO2	LBRuT	16.0	0.7	No	2.2
20	Mortlake Rd, Kew (nr. Kings Schl)	Kerbside	519205	177221	NO2	LBRuT	2.8	0.6	No	2.2
22	Castelnau, Barnes (nr. Hammersmith Bridge)	Kerbside	522853	177908	NO2	LBRuT	4.2	0.5	No	2.2
23(1), 23(2), 23(3)	Castelnau Library, Barnes (static site)	Roadside	522502	177166	NO2	LBRuT	9.0	3.3	Yes	2.2
26	URRW, Sheen (nr. Courtland Estate)	Roadside	519168	175055	NO2	LBRuT	11.8	3.2	No	2.2
28	Holly Lodge, Richmond Pk	Urban Background	519445	173991	NO2	LBRuT	0.0	2175.0	No	2.2
30	Petershan Rd, nr The Russell Schl, TW10	Roadside	518022	173165	NO2	LBRuT	1.3	1.9	No	2.2

31	A316 (nr. Chudleigh Rd)	Roadside	515434	174045	NO2	LBRuT	6.4	1.0	No	2.2
32	Kings St, Twickenham (nr Iceland)	Roadside	516226	173195	NO2	LBRuT	3.8	1.7	No	2.2
33	Heath Rd, Twickenham (nr M&S)	Roadside	515934	173126	NO2	LBRuT	6.9	3.3	No	2.2
35	High St, Hampton Wick	Roadside	517524	169583	NO2	LBRuT	1.4	1.3	No	2.2
36	Upper Richmond Road West(URRW), nr j/w Sheen Lane	Roadside	520540	175399	NO2	LBRuT	2.2	2.1	No	2.2
37(1), 37(2), 37(3)	Wetlands, Barnes (static site)	Urban Background	522993	176731	NO2	LBRuT	230.0	482.52	Yes	2.2
39	Richmond Rd, nr Lidl, East Twickenham	Roadside	517516	174331	NO2	LBRuT	2.7	1.2	No	2.2
40	Staines Rd, Twickenham	Kerbside	514068	172435	NO2	LBRuT	11.4	1.0	No	2.2
42	The Quadrant/Kew Rd, Richmond	Kerbside	518080	175259	NO2	LBRuT	2.9	0.7	No	2.2
43	Hill St, Richmond	Kerbside	517759	174757	NO2	LBRuT	1.6	0.7	No	2.2
44	Sheen Rd, Richmond (near shops)	Kerbside	518489	175056	NO2	LBRuT	0.5	0.5	No	2.2
45	High St, Teddington, (nr Cook)	Kerbside	516383	171154	NO2	LBRuT	3.3	0.5	No	2.2
50	URRW, nr. Clifford Av, Sheen	Kerbside	519922	175324	NO2	LBRuT	2.7	0.7	No	2.2
51	Sheen Lane, Sheen (nr Thomson Hse Schl)	Roadside	520492	175695	NO2	LBRuT	2.0	2.0	No	2.2
52	Clifford Av, nr Chalkers Corner	Roadside	519773	175795	NO2	LBRuT	2.1	2.0	No	2.2
55	Mortlake Road, adj Cemetery Gates,	Kerbside	519793	176142	NO2	LBRuT	4.1	0.6	No	2.2
56	A316 (St Magarets, nr Cassillis Rd)	Kerbside	516788	174519	NO2	LBRuT	9.6	1.0	No	2.2
57	A316 (nr Lincoln Avenue)	Kerbside	513915	172899	NO2	LBRuT	16.4	1.0	No	2.2
58	London Road, Twickenham(nr Twickenham bridge)	Kerbside	516039	173766	NO2	LBRuT	6.4	0.7	No	2.2
62	High Street, Barnes (nr Cook)	Kerbside	521651	176430	NO2	LBRuT	2.3	0.4	No	2.2
63	High Street, Whitton (nr Tescos)	Kerbside	514188	173801	NO2	LBRuT	3.2	0.8	No	2.2
64	High Street, Hampton Hill (nr Tescos)	Kerbside	514484	171251	NO2	LBRuT	1.6	0.5	No	2.2
65	York Street, Twickenham	Kerbside	516339	173366	NO2	LBRuT	2.7	0.5	No	2.2

66	South Circular, Kew Green	Kerbside	519060	177428	NO2	LBRuT	3.3	2.1	No	2.2
67	Petersham Rd opp Poppy Factory,	Roadside	518042	174095	NO2	LBRuT	2.7	1.4	No	2.2
68	Rocks Lane, SW13.	Roadside	522415	176537	NO2	LBRuT	3.2	3.8	No	2.2
69	Uxbridge Rd, nr Longford Cl TW12	Roadside	513494	171729	NO2	LBRuT	2.9	2.0	No	2.5
70	Stag Brewery, Lwr Richmond Rd	Roadside	520465	175965	NO2	LBRuT	2.1	1.8	No	2.5
71	A316, nr St Stephens Primary	Roadside	516574	174456	NO2	LBRuT	9.9	2.9	No	2.2
72	St Margarets Rd, St Margarets (nr. Crown Rd)	Kerbside	516839	174238	NO2	LBRuT	2.5	0.8	No	2.2
73	Hospital Bridge Rd, nr Homelink	Roadside	513722	172873	NO2	LBRuT	8.4	2.1	No	2.4
74	Lower Richmond Rd, Mortlake (nr. Chalker's Corner)	Roadside	519856	175856	NO2	LBRuT	5.9	2.6	No	2.3
75	Hampton Rd (opp Tedd Mem Hosp)	Kerbside	515459	171029	NO2	LBRuT	6.3	0.6	No	2.2
76	Manor Rd, nr Ferry Rd, TW11	Kerbside	516588	171357	NO2	LBRuT	3.3	0.4	No	2.2
77	Sixth Cross Rd, nr Wellington Rd,TW2	Roadside	514705	172092	NO2	LBRuT	4.5	0.6	No	2.2
79	South St, outside Lidl, TW2 5NJ	Kerbside	514810	172041	NO2	LBRuT	6.6	1.0	No	2.3
80	Mortlake High St, SW14	Kerbside	520538	175926	NO2	LBRuT	2.6	0.8	No	2.2
81	Chertsey Ct (A316),	Roadside	519912	175939	NO2	LBRuT	9.2	1.6	No	2.4
82	Twickenham station development	Roadside	516060	173708	NO2	LBRuT	4.8	2.5	No	2.4
83	Thames St, Hampton, nr Plevna Rd, TW12	Kerbside	513811	169510	NO2	LBRuT	0.9	0.3	No	2.6
84	Queens Rd,Richmond (nr Christs School)	Roadside	513872	169518	NO2	LBRuT	5.2	1.7	No	2.5
85	Richmond bus garage	Roadside	517911	174737	NO2	LBRuT	8.4	1.7	No	2.5
87	A316, nr Larkfield Rd,Richmond	Roadside	518280	175367	NO2	LBRuT	0.7	5.8	No	2.5
Rut 01	Civic Centre, York St, Twickenham	Roadside	516415	173419	NO2	LBRuT	3.0	2.9	No	2.5
Rut 02	George Street, Richmond	Kerbside	517917	174928	NO2	LBRuT	2.2	0.7	No	3.5
105	outside East Sheen Primary School, URRW, SW14	Roadside	521315	175461	NO2	LBRuT	4.8	2.5	No	2.2
211	Park Rd, Hampton Hill, LC 002 (nr 6 Park Rd)	Roadside	514476	171310	NO2	LBRuT	1.8	0.7	No	2.2

RP11	LC 189 Hmpt Ct Rd (nr Kingston)	Roadside	517456	169342	NO2	LBRuT	1.6	0.9	No	2.3
RP12	LC 054 A308 nr Thames Motor Yacht	Roadside	515371	168705	NO2	LBRuT	2.4	0.8	No	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.

1.2 Comparison of Monitoring Results with AQOs

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site type	Valid data capture for monitoring period %(b)	Valid data capture 2024 %(b)	2018	2019	2020	2021	2022	2023	2024
Castelnau Library, Barnes (RI1)	522500	177166	Automatic roadside	100%	100%	31	27	20	21	23	16	19.2
Wetlands Centre, Barnes (RI2)	522993	176731	Automatic Suburban	100%	86%	20	21	15	14	14	14	12.3

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%).
All data has been properly ratified by Imperial College London

Table D provides the 2024 results of the NO_2 automatic monitoring and a comparison with the annual mean objective.

As mentioned in section 1, NO_2 is a specified pollutant for the whole Borough AQMA. The findings from this report indicate that the AQMA should be maintained.

The 2024 NO_2 data capture rate for RI1 Castelnau was excellent at 100% and for RI2 Wetlands was good at 86%, both above the 75% data capture rate required by Defra. This means neither require annualisation. Both have been properly ratified by Imperial College London.

The 2024 results indicate that both sites met the objective of 40 µg m^{-3}. The 2024 raw annual mean for the RI2 (Wetlands) was 12.3 µg m^{-3} indicating a reduction of around 1.7 µg m^{-3} following three years of virtually no change from the 14 µg m^{-3} measured in 2021, 2022 and 2023. This site is a background site far from the main road and close to the River Thames and therefore representative of low pollution in the Borough. Whilst this is welcome news, levels of NO2 may go up or down slightly in future years,so we need to keep a close eye on results. It also demonstrates the real challenges of achieving 10 µg m^{-3} borough wide in line with 2021 WHO guidelines. It is also important to note that with lower levels of NO2, local projects such as road closures and roadwork construction may contribute to fluctuations in pollution levels within the borough.

The annual mean at the RI1 (Castelnau) roadside site was 19.2 µg m^{-3} an increase of around 3.2 µg m^{-3} from 2023 (16 µg m^{-3}) but a decrease of around 3.8 µg m^{-3} from 2022 (23 µg m^{-3}). This appears less encouraging but does demonstrate how air quality levels can go up and down slightly year on year but also demonstrates that the general trend is downwards. It must be remembered that

Castelnau Air Quality station, although a roadside site, is not currently representative of typical roadside concentrations for LBRUT. This is because Hammersmith Bridge at the end of Castelnau was closed to all vehicles on 10th April 2019 for safety reasons until strengthening work was completed. From May 2016 buses were restricted and a weight restriction of 7.5 tonnes was placed on the bridge preventing many HGVs from crossing. Data from 2016 - 2024 reflects this, indicating more significant reductions than may otherwise be expected. Following extensive engineering work, Hammersmith bridge re-opened to pedestrians, cyclists e-scooters, and other forms of pedalled transport in April 2025. The bridge now has dedicated cycle lanes and a wider pedestrian path. Whether or not it will ever re-open to vehicles and if so, which type is currently unknown.

Consideration has been given to relocating the site. On balance, following discussions with the Council and Imperial College London, for data continuity and trend data purposes, it has been decided to leave it in situ. This will be reviewed annually.

In February 2025 a new roadside automatic monitoring site for Richmond town centre, representative of more typical/worst case scenario roadside emissions, was installed. Results will be reported in our 2026 Annual Status Report.

Table E. Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring (µg m^{-3})

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%)	Valid Data Capture 2024 (%)	2018	2019	2020	2021	2022	2023	2024
1	515824	168815	Roadside	100	100.0	**41.0**	35.0	25.0	26.0	22.0	19.6	16.1
2	513217	169746	Roadside	100	100.0	32.0	29.0	21.0	24.0	21.0	18.6	16.5
4	514607	171258	Kerbside	100	100.0	35.0	31.0	27.0	28.0	24.0	22.5	21.1
7	515695	170983	Kerbside	100	100.0	**45.0**	39.0	34.0	37.0	26.0	25.5	26.4
9	514846	172348	Kerbside	100	100.0	**40.0**	35.0	31.0	31.0	23.0	20.9	17.7
10	513390	172233	Kerbside	100	100.0	**41.0**	**40.0**	33.0	33.0	26.0	24.5	24.2
11	514136	173389	Kerbside	100	100.0	**46.0**	34.0	27.0	27.0	24.0	22.8	19.8
12	512612	173439	Kerbside	100	100.0	**44.0**	**40.0**	31.0	30.0	26.0	23.2	20.7
13	515228	174082	Kerbside	100	100.0	**40.0**	39.0	36.0	30.0	24.0	21.0	18.6
15	517196	173933	Kerbside	100	100.0	34.0	32.0	26.0	26.0	21.0	19.6	19.1
17	517822	174755	Kerbside	100	100.0	**54.0**	**50.0**	**40.0**	**46.0**	31.0	26.8	24.9
18	518822	175590	Kerbside	100	92.5	**46.0**	**46.0**	**41.0**	39.0	30.0	30.0	27.6
19	518643	176156	Kerbside	100	100.0	**42.0**	37.0	30.0	28.0	21.0	22.5	19.9
20	519205	177221	Kerbside	100	100.0	38.0	38.0	30.0	28.0	32.0	30.2	25.0
22	522853	177908	Kerbside	100	100.0	**45.0**	32.0	21.0	22.0	17.0	17.1	15.2
23(1), 23(2), 23(3)	522502	177166	Roadside	100	100.0	31.0	26.0	20.0	21.0	17.0	16.4	15.5
26	519168	175055	Roadside	100	100.0	36.0	34.0	32.0	33.0	28.0	27.5	26.4
28	519445	173991	Urban Background	100	84.9	18.0	17.0	12.0	12.0	11.0	11.0	9.7
30	518022	173165	Roadside	100	100.0	Not open	Not open	Not open	25.0	20.0	18.8	16.7

31	515434	174045	Roadside	100	100.0	**49.0**	**45.0**	35.0	35.0	31.0	30.8	27.4
32	516226	173195	Roadside	100	100.0	**56.0**	**47.0**	**40.0**	**40.0**	31.0	29.7	26.6
33	515934	173126	Roadside	100	100.0	**52.0**	**40.0**	34.0	39.0	28.0	26.8	24.6
35	517524	169583	Roadside	100	100.0	**42.0**	36.0	32.0	30.0	25.0	22.3	19.5
36	520540	175399	Roadside	100	90.6	**63.0**	**61.0**	**56.0**	**55.0**	**52.0**	**48.3**	**45.3**
37(1), 37(2), 37(3)	522993	176731	Urban Background	100	100.0	21.0	20.0	14.0	14.0	14.0	13.4	11.7
39	517516	174331	Roadside	100	100.0	**45.0**	39.0	32.0	32.0	30.0	31.6	29.7
40	514068	172435	Kerbside	100	100.0	**41.0**	35.0	29.0	29.0	24.0	23.0	19.8
42	518080	175259	Kerbside	100	100.0	**72.0**	**62.0**	**60.0**	**54.0**	**41.0**	37.8	36.6
43	517759	174757	Kerbside	100	100.0	**59.0**	**46.0**	**41.0**	**43.0**	39.0	36.4	34.0
44	518489	175056	Kerbside	100	100.0	**40.0**	37.0	33.0	32.0	29.0	28.6	26.5
45	516383	171154	Kerbside	100	100.0	33.0	32.0	26.0	26.0	20.0	20.0	17.1
50	519922	175324	Kerbside	100	100.0	**52.0**	**50.0**	**45.0**	**46.0**	39.0	38.2	33.9
51	520492	175695	Roadside	100	100.0	33.0	30.0	24.0	23.0	19.0	19.4	18.3
52	519773	175795	Roadside	100	92.5	**59.0**	**55.0**	**46.0**	**45.0**	39.0	36.4	32.2
55	519793	176142	Kerbside	100	100.0	**41.0**	**40.0**	33.0	29.0	26.0	25.6	21.2
56	516788	174519	Kerbside	100	92.5	**43.0**	39.0	31.0	29.0	23.0	20.6	18.7
57	513915	172899	Kerbside	100	90.6	**43.0**	37.0	29.0	29.0	23.0	23.2	19.9
58	516039	173766	Kerbside	100	100.0	**43.0**	**40.0**	33.0	31.0	25.0	21.9	19.7
62	521651	176430	Kerbside	100	100.0	**43.0**	**43.0**	32.0	32.0	25.0	24.2	21.3
63	514188	173801	Kerbside	100	100.0	38.0	33.0	27.0	27.0	30.0	24.7	21.4
64	514484	171251	Kerbside	100	100.0	**45.0**	**41.0**	34.0	35.0	30.0	27.6	23.1
65	516339	173366	Kerbside	100	100.0	**55.0**	**50.0**	**40.0**	**40.0**	33.0	30.2	30.5
66	519060	177428	Kerbside	100	100.0	**42.0**	**40.0**	32.0	30.0	27.0	24.9	23.6

67	518042	174095	Roadside	100	100.0	**41.0**	32.0	23.0	23.0	21.0	20.4	17.2
68	522415	176537	Roadside	100	100.0	**55.0**	**40.0**	31.0	30.0	25.0	23.6	22.3
69	513494	171729	Roadside	100	100.0	38.0	31.0	22.0	23.0	20.0	19.5	17.2
70	520465	175965	Roadside	100	100.0	Not open	**42.0**	33.0	34.0	27.0	30.2	26.6
71	516574	174456	Roadside	100	90.6	Not open	**52.0**	**43.0**	39.0	34.0	33.0	28.3
72	516839	174238	Kerbside	100	100.0	Not open	**42.0**	33.0	30.0	26.0	23.3	20.6
73	513722	172873	Roadside	100	100.0	Not open	**43.0**	36.0	34.0	28.0	26.8	23.4
74	519856	175856	Roadside	100	100.0	**50.0**	**52.0**	**43.0**	**44.0**	32.0	31.1	28.3
75	515459	171029	Kerbside	100	100.0	Not open	Not open	29.0	29.0	25.0	25.3	23.0
76	516588	171357	Kerbside	100	100.0	Not open	Not open	35.0	35.0	30.0	23.1	21.6
77	514705	172092	Roadside	100	100.0	Not open	Not open	38.0	37.0	31.0	27.2	23.5
79	514810	172041	Kerbside	100	100.0	Not open	Not open	33.0	32.0	25.0	23.2	21.4
80	520538	175926	Kerbside	100	100.0	Not open	Not open	Not open	30.0	24.0	23.2	20.3
81	519912	175939	Roadside	100	100.0	Not open	Not open	Not open	30.0	32.0	32.0	29.0
82	516060	173708	Roadside	100	100.0	Not open	Not open	Not open	Not open	21.0	19.9	17.9
83	513811	169510	Kerbside	100	100.0	Not open	Not open	Not open	Not open	30.0	27.6	23.1
84	513872	169518	Roadside	100	100.0	Not open	Not open	Not open	Not open	Not open	16.0	14.0
85	517911	174737	Roadside	100	100.0	Not open	Not open	Not open	Not open	Not open	39.5	35.8
87	518280	175367	Roadside	100	100.0	Not open	Not open	Not open	Not open	Not open	Not_open	33.7
Rut 01	516415	173419	Roadside	100	100.0	38.0	36.0	29.0	27.0	24.0	23.0	21.4
Rut 02	517917	174928	Kerbside	100	100.0	**82.0**	**72.0**	**63.0**	**52.0**	**43.0**	**40.0**	36.0
105	521315	175461	Roadside	100	100.0	Not open	**47.4**	**40.0**	38.5	38.5	33.1	30.8
211	514476	171310	Roadside	100	100.0	Not open	Not open	Not open	31.7	29.3	27.8	24.8
RP11	517456	169342	Roadside	100	100.0	Not open	Not open	Not open	**40.2**	36.4	30.7	26.7
RP12	515371	168705	Roadside	100	90.6	Not open	Not open	Not open	39.7	37.2	31.6	28.4

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LLAQM.TG19 (not required).**

☒ **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 µg m^{-3}.

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

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

Sites that comply with the NO_2 annual mean objective of 40 µg m^{-3} are shown in **green.**

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%. For 2024 this was not required at any site in LBRuT.

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%).

Maximum data capture for the monitoring period, for all diffusion tube sites was a full 12 months – 100%. Missing tubes resulted in slightly reduced data capture at individual sites.

The bias adjustment factor used for **all** sites is **0.88** calculated using **the national 50% TEA/acetone Gradko bias adjustment** factor. After careful consideration this was considered the most reliable option for 2024 and in line with partner boroughs. Please see Appendix A Details of Monitoring Site Quality QA/QC A.2 Diffusion tubes - Discussion of Choice of Factor to Use and Appendix E for more information.

Please see Appendix B for full monthly data for 2024, including distance corrected, where relevant.

Notes on sites:

From 4/1/24 site 54 was closed (readings very similar to 55, close by on the A205), and **site 25 was closed** (very similar to 105, close by on the A205); **Site 87** on A316 near Richmond Circus **was opened** to aid Richmond town centre study.

For 2024 it has also been decided to include 4 sites within the above permanent sites, all have been monitored for several years for separate studies. These are **site 105** included in East Sheen Primary School on URRW outside the school, **site 211** Park Rd, Hampton Hill, nr j/w High St, and 2 x sites which were part of the Royal Parks Movement Strategy, including likely displacement traffic - **site RP11** on Hampton Ct Rd near Kingston bridge and site **RP12** on A308 near Thames Motor Yacht and Hampton Court bridge. To avoid confusion and for greater transparency it has been decided to **retain original site ID's.**

From 3/1/23 site 27 was closed. This site was moved further down the road to the next school, renamed site 84 and site 85 was opened. Site 51 on Sheen Lane, moved back to o/s Thomson House School, co-located with new BL node.

From 5/1/22 site 29 was closed and site 81 was made permanent (opened 5/1/21); site 63 moved slightly up Whitton High St on request - site name/number retained; site 61 moved > 20m nearer new Twickenham station development, renamed site 82; site 78(34) moved along A308 >20m on request renamed site 83.

From 5/1/21 site 59 was closed, site 80 was opened. From Aug 2020 air quality mobile was stolen, some data recoverable for 2020, no data for 2021 onwards.

From 6/1/20 sites 14, 24, 41 were closed; sites 75, 76, 77 opened; sites 2, 4, 27 and 29 moved slightly (<20m) to better represent worst-case scenario following requests from residents/officer observation. Site 34 and 48 moved > 20m so for Table P (Non-Automatic Monitoring Data Adjustment) have been renamed site 78 and 79 respectively. Aug 2020 the air quality mobile was stolen – data ceased.

From 9/1/19 sites 6, 16, 47 and 60 were closed; sites 70, 71, 72 and 73 were opened.

From 2/1/18 sites 3 and 49 were closed; sites 68 and 69 opened; site 21 was moved approx. 200m in response to resident's requests/officer observation and is now close to the junction at Chalker's Corner, so for clarity has been renamed site 74. Site 36 and 51 were moved slightly (<20m); See Table C for correct grid references for 2018 onwards and 2017 ASR for earlier grid references.

Annual Mean NO2 Monitoring Results: Non-Automatic Monitoring (µg m^{-3}) 2024

Table E shows the NO2 diffusion tube monitoring results for each year from 2018 to 2024, with bias corrected values, using the national bias adjustment factor of 0.88 for 2024. The data capture for 2024 for all diffusion tube sites was very good (98.9%). No site recorded a data capture of less than 75%, so no annualisation was required for greater accuracy. All sites were monitored for 12 months.

The total number of sites in 2024 where monitoring was undertaken was 68; two of these were triplicates, co-located next to real time automatic analysers. Two sites were background, the remaining 66 were roadside or kerbside.

The results borough wide are encouraging for 2024, continuing the previous years' downward trend in levels of NO2. It should be noted that The Council's main dilemma when analysing the 2024 data was the choice of the correct bias correction factor to apply. After 4 weeks of careful deliberation and expert discussions, it was decided to use the national 50% TEA/acetone Gradko bias adjustment factor of 0.88, For more information, see Appendix A Details of Monitoring Site Quality QA/QC A.2 Diffusion tubes - Discussion of Choice of Factor to Use and Appendix E.

The 2024 monitoring results show that the Defra objective of 40 µg m^{-3} was exceeded at just 1 site (1.5%) and complied at 67 sites (98.5%). The site that exceeded was site 36 on URRW by the shops, towards the junction with Sheen Lane in East Sheen, which after bias adjustment recorded 45.3 µg m^{-3}. For the first time in the last 22 years, all sites in Richmond town centre complied. After bias adjustment, site 42 opposite Richmond station recorded 36.6 µg m^{-3}, site Rut 2 in George St Richmond 36.0µg m^{-3} and site 85 Richmond bus garage recorded 35.8µg m^{-3}. This means none, after bias adjustment, exceeded the annual mean concentration of 60 µg m^{-3} in 2024 (which indicates it would be likely to exceed the hourly limit value), which is excellent news. These headline figures are very encouraging, but work must continue, to try and maintain and improve upon this position.

For those that complied, 58 sites (85%), measured less than 30 µg m^{-3}, 23 sites (34%) less than 20 µg m^{-3}, and for the first time ever one site (1.5%) less than 10 µg m^{-3}(Richmond Park at 9.7 µg m^{-3}), achieving the WHO guideline set in September 2021. This shows that levels of NO2 really are coming down. If we compare this to pre-COVID 2018, out of 64 sites, 41 sites (64.1%) exceeded the objective of 40 µg m^{-3} (three also exceeding 60 µg m^{-3}, so likely to exceed the hourly limit value) and only 1 site (1.6%), site 28 in Richmond Park, recorded below 20 µg m^{-3} (18 µg m^{-3}). In terms of overall annual reductions in pollution the borough has seen significant reductions with the trajectory being towards further reductions.

From the 68 monitoring sites in 2024, 65 sites monitored reductions and two sites saw increases. The increases were at site 7 outside Boots in Teddington Broad Street up from 25.5 µg m^{-3} in 2023 to 26.4 µg m^{-3} in 2024 and at site 65 in York Street Twickenham, up slightly from 30.2 µg m^{-3} in 2023 to 30.5 µg m^{-3} in 2024. One new site was opened (site 87).

The sites which witnessed the largest annual reduction of between 4- 5.2 µg m^{-3} for NO2 were typically sites on TfL controlled roads such as the A316 and the South Circular. Site 20 on the South Circular outside Kings School saw the greatest reduction of 5.2 µg m^{-3} down from 30.2 µg m^{-3} to 25.0 µg m^{-3} from 2023 to 2024, site 50 on URRW near the junction with Cliford Ave (South Circular), site 52 on Clifford Ave (South Circular), site 55 on Mortlake Rd (South Circular), and site 71 outside St Stephens Primary School on the A316 all witnessed reductions of 4.2 - 4.7 µg m^{-3} 2023 to 2024. Site 64 on Hampton Hill High St and site Rut 2 on George St Richmond, both town centre locations, also witnessed reductions of 4.5 µg m^{-3} and 4.0 µg m^{-3} respectively and site 83 on Thames St near Plevna Rd witnessed reductions of 4.5 µg m^{-3}. down from 27.6 µg m^{-3} to 23.1 µg m^{-3} It is encouraging to see useful reductions continue to occur at sites that were already comfortably below 40 µg m^{-3}. It is however true that NO2 levels on some of these roads are relatively higher so larger reductions will be more likely. . Likewise percentage decreases are likely to increase where actual levels of NO2 are lower. Overall data indicates that 62 sites recorded reductions of at least 5%, and 38 sites witnessed reductions of more than 10%.

Whilst reductions are welcome, more work is needed. This is because the more we understand about the health effects of air quality, the more we are aware of harm to health that can occur, well below the UK limit value of 40 µg m^{-3}. Richmond Council considers this UK limit value, set by Defra to be achieved by 2005, outdated, so on grounds of harm to health has just adopted an ambitious new level of 20 µg m^{-3} for annual NO2 throughout the London Borough of Richmond upon Thames in its latest Air Quality Action Plan 2025-30. The GLA is currently consulting on the new London Plan and we hope will do likewise, which would be beneficial for the whole of London. This is in line with new European standards where 20 µg m^{-3} for annual NO2 has already been adopted.

For the fourth year in the last 22 years of monitoring in the borough, after bias adjustment, no site has exceeded 60 µg m^{-3}, which is very good news and appears set to continue. However, site 36 on Upper Richmond Rd West (South Circular) near Sheen Lane in

East Sheen, has for the second year in a row, being the worst polluted location in the borough. Levels have reduced in 2024, as advised above, and after bias adjustment recorded 45.3 µg m^{-3} down from 48.3 µg m^{-3} in 2023. This is now higher than many roads in central London and further improvements are still needed. The extended ULEZ expansion to outer London, which scoped in the South Circular, operational from 29th August 2023, may have helped speed reductions a little here. The incessant problem of slow moving/stop/start motoring, including many HGV's, along this section of the South Circular remains high, partly supplemented by diverted traffic from the closure of Hammersmith Bridge for major repairs. There is no simple solution; closure is likely to remain in place for many years. To a certain extent, this section also suffers from the closure of East Sheen Gate in Richmond Park, diverting traffic onto the South Circular. It is also a busy bus route for buses 33, 337, 493. Electric buses would help. Route 33 was electrified in November 2024, which may be reflected in 2025 data, which will reported in our 2026 report. Further and faster electrification of the remaining TfL bus routes are desirable, which the Council support, encourage and have requested. Any action by TfL to speed up traffic and smooth the flow in this very congested area, lined with narrow pavements, shops and homes would also be welcomed. Such improvements are likely to be challenging especially in the light of the newly approved Stag Brewery development and the redevelopment of Barnes hospital site both of which will bring many more residents, school pupils and visitors to the area in the coming years.

Richmond Council is regularly asked about the effects on air quality from the extension of the ULEZ to outer London. It is difficult to quantify emission reductions solely from the extended ULEZ. Some vehicle upgrades will inevitably result from the central and inner London ULEZ. We know it removed many older more polluting vehicles from the fleet but we are aware and have been reminded by residents that some of these vehicles travelled very few miles weekly or annually, so any emission reduction would be small. The Mayor has issued the **London-wide Ultra Low Emission Zone (ULEZ) One Year Report**, which includes a lot of information on all aspects of the Lowdon wide ULEZ – LWULEZ. The report advises that the extended ULEZ resulted in an overall 1.4% increase in compliant vehicles seen driving in outer London on an average day up from 95.3% in September 2023 to 96.7% in September 2024. Compliant cars in outer London were up by 1% from 96.4% to 97.4% and vans up by 4.5% from 86.2 to 90.7%.

Vans are probably a more important sector since they tend to travel more miles daily/weekly/annually so if not electrified are likely to emit more from the tailpipe, when non-compliant. The report includes many charts and data some comparing different time frames 2010 – 2024, 2019 – 2024 (all phases of the ULEZ), 2023-2024 (with and without ULEZ) and some comparing rest of England to central, inner and outer London. The bottom line is that there is, of course, no actual data for "without ULEZ" to compare to data "with ULEZ" for the relevant Sept 2023 – Sept 2024 period, so the GLA have used well qualified professionals to employ the most robust methodology to estimate the likely emissions with and without an extended ULEZ. It must be remembered that the ULEZ is a huge area - the London-wide zone measures 1,500 km2 and covers nine million people and is the same zone as the LEZ for heavy vehicles, making it the largest zone of its kind in the world. Moreover, outer boroughs within the "extended ULEZ" vary significantly, sometimes within each borough, and air quality levels are affected by very many variables. Comparison is therefore complex. The report concludes that "After one year of operation of the London-wide ULEZ, our estimates show that roadside NO2 concentrations in outer London were on average 4.8 per cent (1.1 μg m^{-3}) lower than would have been expected without the London-wide ULEZ expansion". This takes account of expected vehicle churn, weather and more. Evidence suggests that the ULEZ in all its forms has speeded up the upgrade of the fleet and in so doing has reduced emissions.

Whilst upgraded vehicles will have helped to speed up reductions, Richmond Council's local policies will also contribute, by raising awareness of the effect of transport emissions on air quality and by creating and promoting the Good Move Scheme. This provides discounts for sustainable transport, such as cycle and car hire schemes, and may have encouraged some residents to give up their private vehicles completely in favour of more sustainable transport such as cycling or public transport – this will also help to reduce congestion and improve both health and air quality.

The Council has carried out considerable extra monitoring in 2024 linked to proposed road changes – such as the LTN in Hampton Hill, continued to measure in and around Richmond and Bushy Parks to monitor parks and displacement traffic from parks in response to the proposed Movement Strategy by Royal Parks and ad hoc monitoring to address residents' concerns such as the 9

month TfL road works on the A316 near Manor Circus. These are not permanent sites and it was decided not to include monitoring results in this report. Much data is available on the Council's website here.

From Jan 2022 – Dec 2024, the Council organised a 3-year programme to monitor worst-case scenario for a full year outside all state schools in the borough. Please see Appendix D at the end of the report for the final set of results for schools monitored in 2024. Earlier results are available on the Council website here.

2024 has likely witnessed the likely settling-in of the new "norm" for work travel. For occupations that have allowed, COVID changed the way many people want to work with the acceptance and encouragement of this by most employers. It is likely to remain so, certainly for the near future. A few companies are requesting full return to work but part working from home/part working from the office has become commonplace. Change in working practice is likely to some extent to effect traffic and with it, air quality. It was feared that gains made to air quality during lockdown would be lost once life returned to normal. There is no evidence of this. Levels in 2024 are significantly better than in 2019 at the height of lockdown, when 27 x sites (42%) exceeded the UK limit value of 40 μg m^{-3}. These significant reductions confirm the downward trend in air pollution, which is very encouraging.

Trend graphs in Figure A (p32) and Figure B (p34) below, clearly demonstrate this general trend, which, despite a few fluctuations remains downward.

Many factors at all levels of central, mayoral and local government contributed to this.

From a central government perspective, dieselgate back in September 2016 resulted in measures that should not be underestimated for their continuing benefits on air quality. It led to the replacement of laboratory-based emission testing with the more accurate and realistic real-world driving cycle tests. This provided differing, more robust data about vehicle performance and emissions in actual driving conditions. This has benefited levels of air quality ever since, as motoring manufacturers were forced to produce vehicles which met certification values under real on-road driving conditions. This continues to deliver improvements in

later Euro 6 vehicles which really are much cleaner when compared to earlier Euro 6 versions. It also helped raise the profile of air quality nationally, making it a consideration for more people when purchasing vehicles. Many are switching to electric or hybrid, helped by the government's new Zero Emission Vehicle (ZEV) Mandate. This mandates that car manufacturers sell a certain percentage of zero-emission vehicles each year which started at 22% of cars and 10% of vans in 2024 and will increase to 80% of cars by 2030 and 100% by 2035. The government is now committed to phasing out the sale of new cars powered solely by internal combustion engines from 2030. It will permit the sale of Hybrid Electric Vehicles (HEVs) and Plug in Hybrid Electric Vehicles (PHEVs), alongside ZEVs in the 2030 to 2035 period. The ZEV mandate is designed to encourage the transition to electric vehicles and reduce emissions.

According to the SMMT (Society of Motor manufacturers and Traders) 2024 witnessed a 2.6% overall increase in car sales in 2024 compared to 2023 up to nearly 2,000,000. Despite the fact that EV sales reached new record numbers, they failed to reach the mandated target of 22%, achieving 19.6% of all new car sales. (Manufacturers can shift EV sales to later years when demand is expected to be stronger). Increases were reported in EV, (electric vehicle), HEV (Hybrid Electric Vehicle) and PHEV (Plug-in Hybrid Electric Vehicle) whilst decreases were reported in petrol and diesel. Petrol still accounted for more than half of all car sales, more than 1,000,000 (56%), diesels dropped to around 120,000 (7.5% - now the smallest market share by fuel type) and combined EV, PHEV and HEV rose to over 810,000 (36.5%). The ZEV mandate appears to be working but some manufacturers think more government incentives are needed. Richmond, one of the highest per capita car ownership London boroughs, needs a better coverage of reliable public transport, combined with more uptake by residents and workers of sustainable transport including cycling and walking, and a move away from private car ownership in favour of car clubs for journeys where cars are considered the better option. The Council has various policies to encourage all of these.

Throughout 2024 Richmond Council has continued to encourage the healthy streets strategy, has introduced 15 school streets to encourage walking, scootering and cycling to school and encouraged modal shift away from the private car to bikes, cargo bikes,

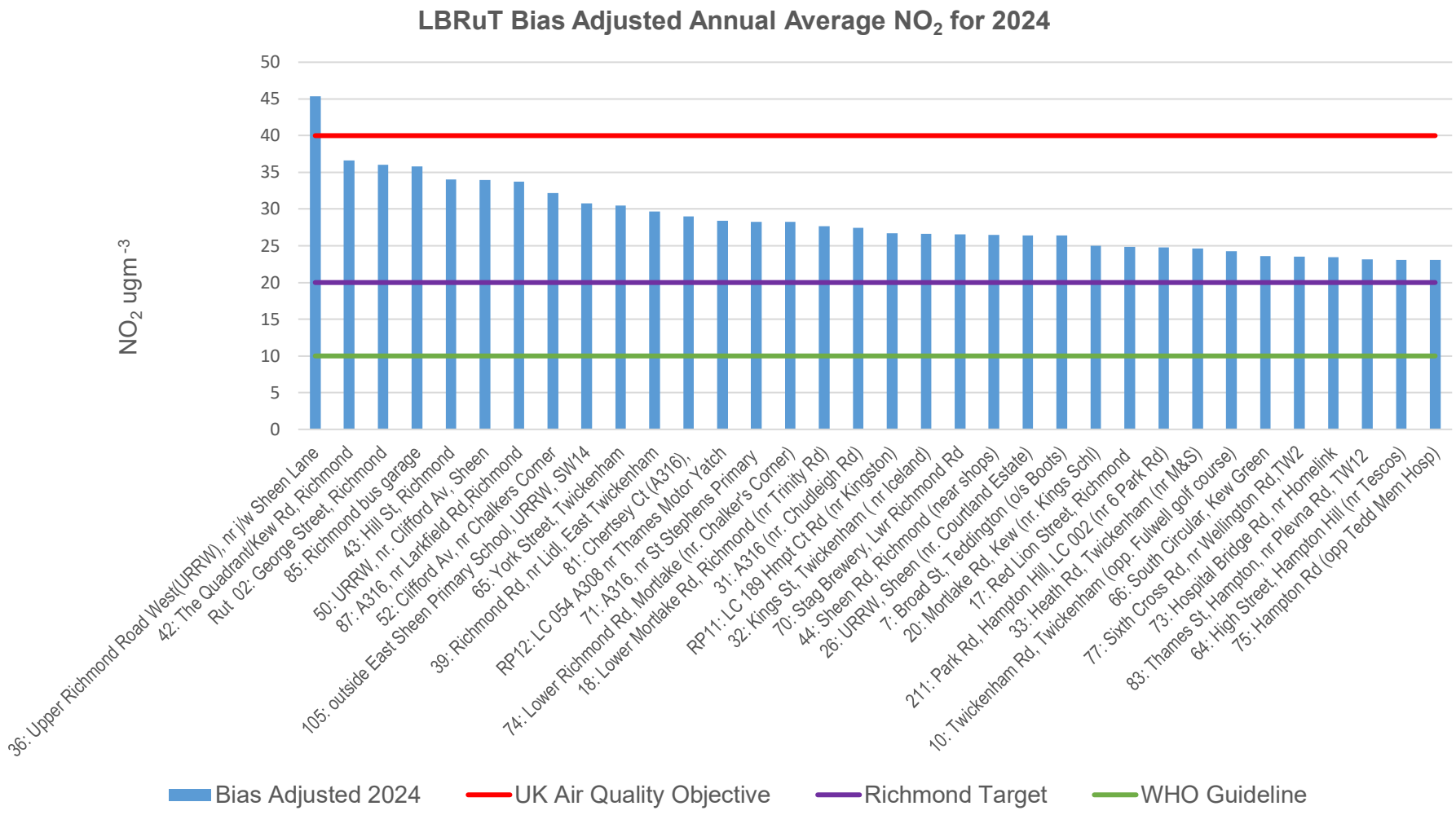
walking and public transport. Richmond has the largest e-cargo bike hire scheme in London. Even in outer London where public transport cannot compete with central London, planning applications are assessed and encouraged, where realistic, to be car free or car “lite”. Car clubs and free membership for occupiers provided by the developer for 2 years are conditioned where possible to aid the switch. Electric vehicle charge points (EVCP’s) are conditioned in all possible planning applications and are being rolled out beyond target borough wide. Lastly, idling is a political priority for LBRUT. Throughout 2024 the pollution team has erected signage, run campaigns, school workshops and responded to all complaints on engine idling. LBRUT’s traffic wardens have engaged daily with idling drivers and required switch off. In 2024, they issued 8,226 warnings to drivers, down from 10,484 in 2023 and 12,056 in 2021, partly due, they believe, to more compliant drivers and more electric vehicles/vehicles with automatic cut-offs. In the last 6 years they have issued over 61,000 warnings, which is one of the highest across London and probably within the UK. However, despite reducing, the problem persists. A change in law appears unlikely, so the Council is considering other options within the new 2025-30 Air Quality Action Plan. We will update progress in the 2026 report.

To conclude, the overall monitoring results for the Borough in 2024 are positive, indicate reductions borough-wide and, with the exception of one site in East Sheen, show compliance with the UK annual mean objective for NO2. This is in line with the modelling prediction for the Borough. However, air quality data does fluctuate slightly year on year. Regardless, we remain optimistic that it will continue on a downward trajectory. Richmond is now on a course to achieve new local targets of 20 µg m^{-3} for annual NO2, well below UK limit values of 40 µg m^{-3}, and in line with the more stringent limit values, introduced in its 2025-30 Air Quality Action Plan. It is also working longer-term towards achieving the more stringent voluntary WHO targets of 10 µg m^{-3} set out in September 2021. This will require a step change in the way we live our lives, travel and heat our homes. It will be interesting to see if we can achieve compliance with UK limit values in Upper Richmond Road West near Sheen Lane in 2025 . We will continue to strive to achieve this as soon as possible.

Below are charts, graphs and a map to help visualise the results.

This year we have again included bar charts of data for all sites ranked in order of exceedance, including a red line for the UK limit value of 40 µg m^{-3}, a dark purple line for the new Richmond limit value of 20 µg m^{-3} and a green line for the WHO guideline of 10 µg m^{-3}. A map showing locations is below – indicating good coverage for the whole borough (NB LBRUT has 2x large areas of Royal Parks – Richmond and Bushy Park).We also include 20 representative sites, grouped by area, in our trend charts, covering town centres, main roads, a level crossing and a background site from 2002 – 2024 to give more perspective to levels of NO2 over a long time period.

Figure A. Bias Adjusted Annual Average NO_2 Concentrations for 2024 at all Sites (split over 2 graphs)



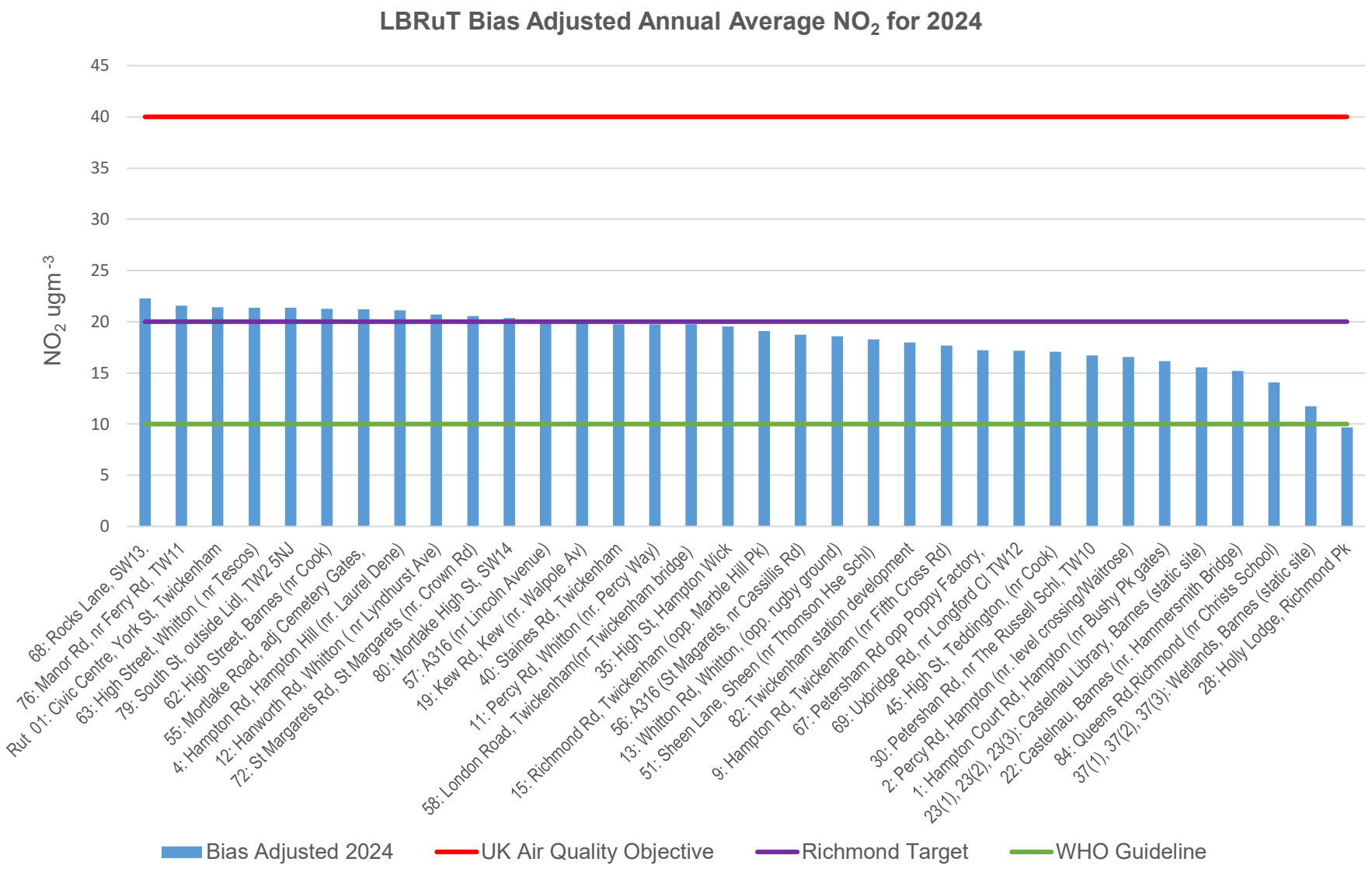
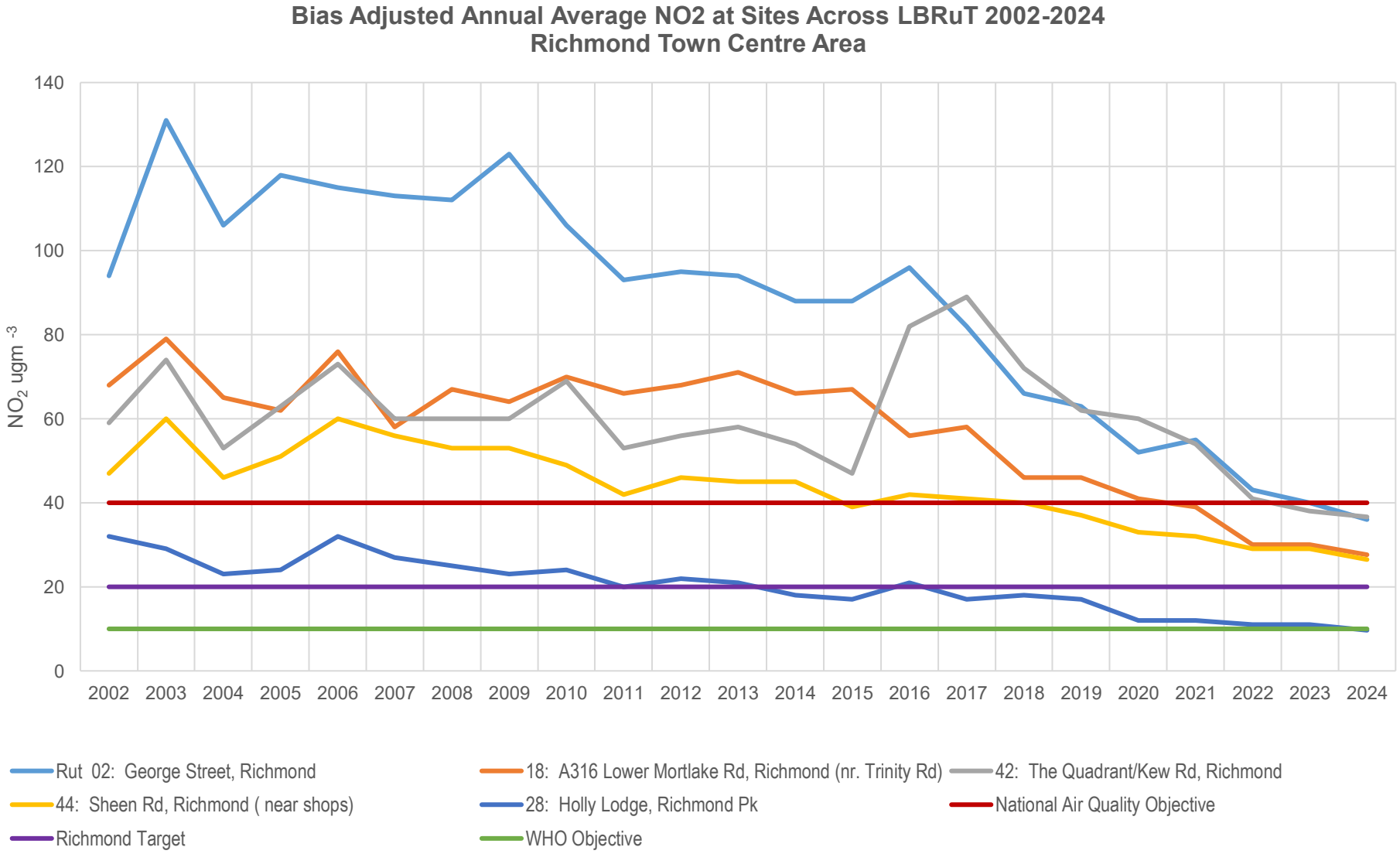
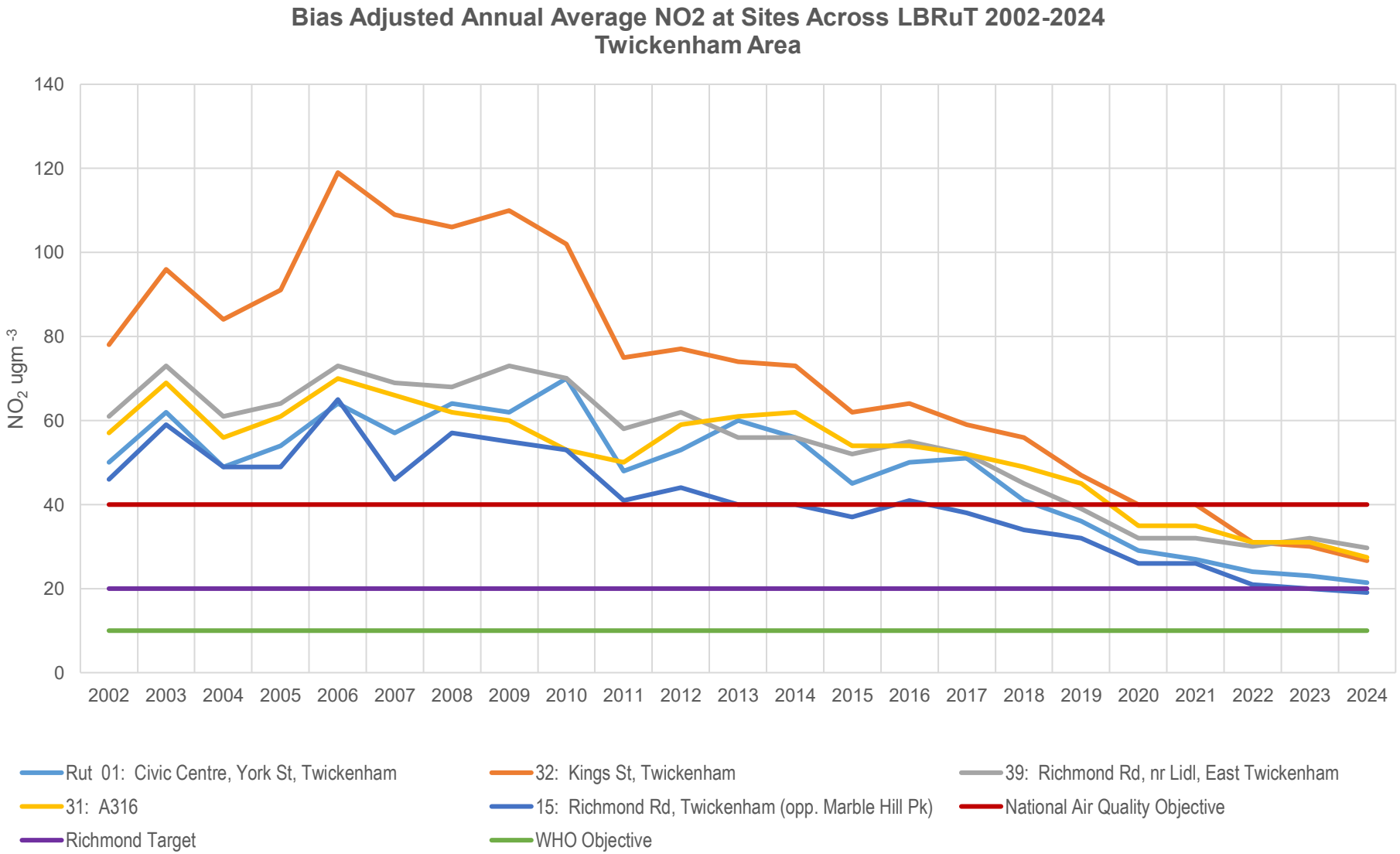
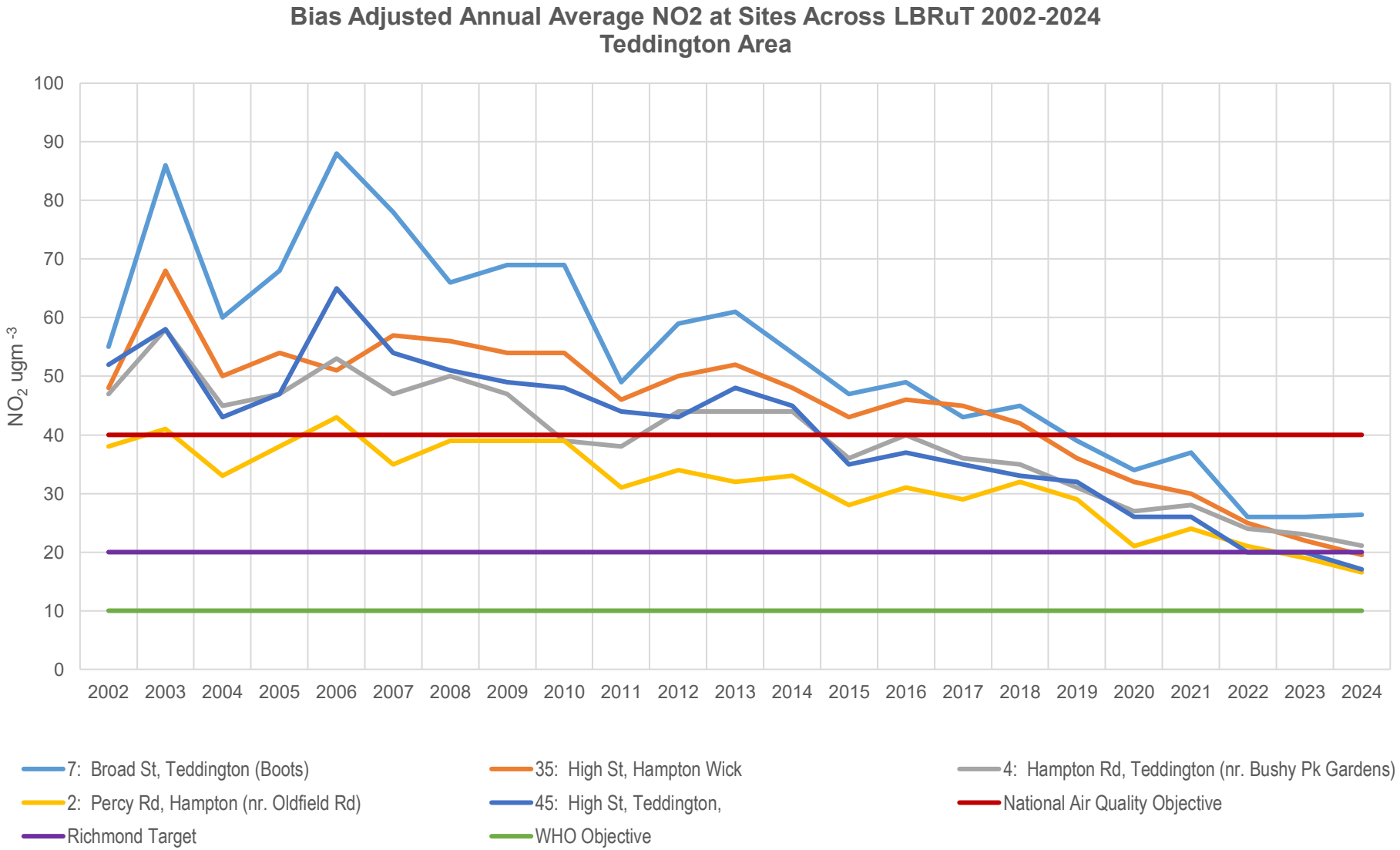
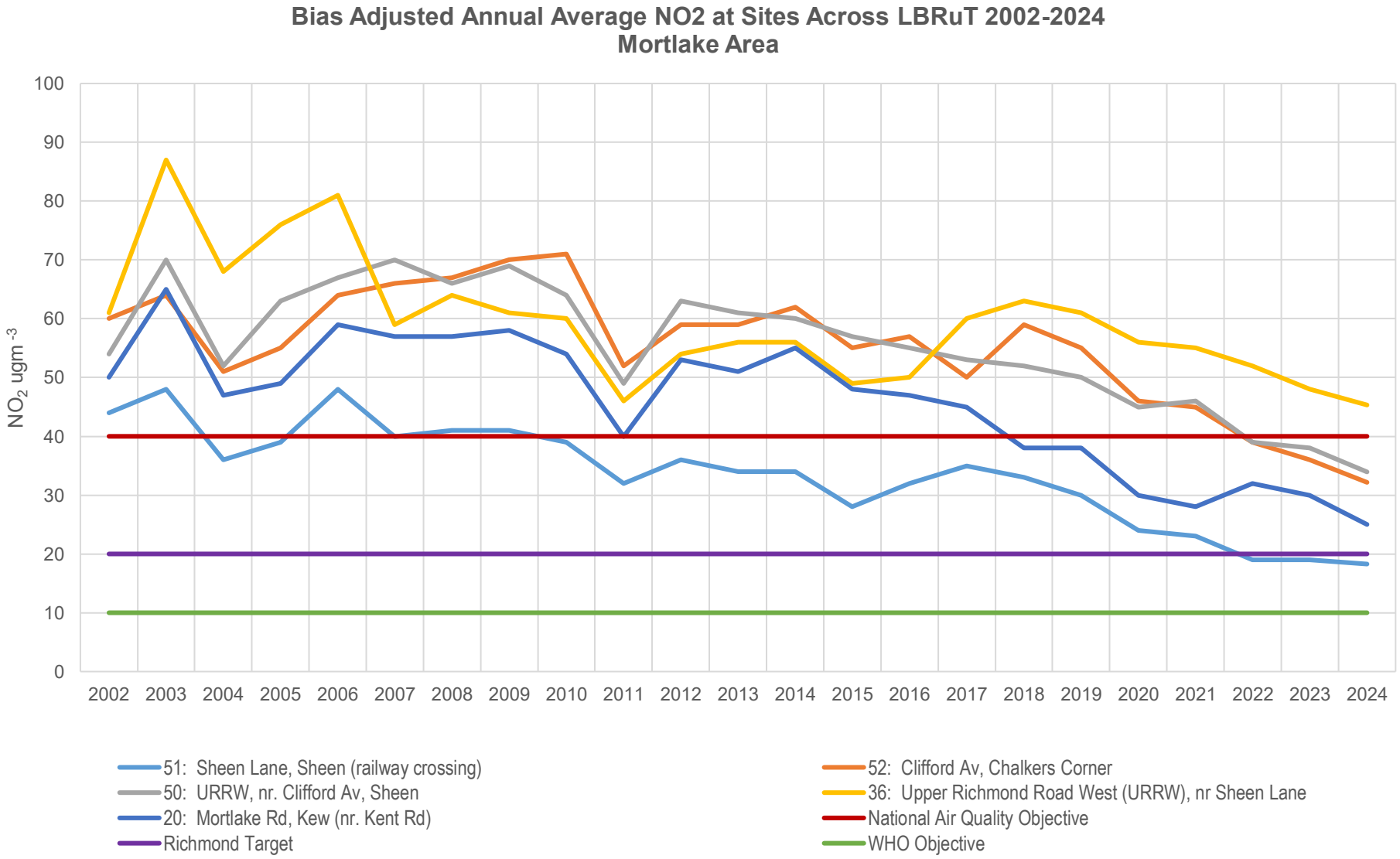

LBRuT Bias Adjusted Annual Average NO2 for 2024
NO2 ugm-3
45
40
35
30
25
20
15
10
5
0
68: Rocks Lane, SW13.
76: Manor Rd, nr Ferry Rd, TW11
Rut 01: Civic Centre, York St, Twickenham
63: High Street, Whitton (nr Tescos)
79: South St, outside Lidl, TW2 5NJ
62: High Street, Barnes (nr Cook)
55: Mortlake Road, adj Cemetery Gates,
4: Hampton Rd, Hampton Hill (nr. Laurel Dene)
12: Hanworth Rd, Whitton (nr Lyndhurst Ave)
72: St Margarets Rd, St Margarets (nr. Crown Rd)
80: Mortlake High St, SW14
57: A316 (nr Lincoln Avenue)
19: Kew Rd, Kew (nr. Walpole Av)
40: Staines Rd, Twickenham
11: Percy Rd, Whitton (nr. Percy Way)
58: London Road, Twickenham(nr Twickenham bridge)
35: High St, Hampton Wick
15: Richmond Rd, Twickenham (opp. Marble Hill Pk)
56: A316 (St Magarets, nr Cassillis Rd)
13: Whitton Rd, Whitton, (opp. rugby ground)
51: Sheen Lane, Sheen (nr Thomson Hse Schl)
82: Twickenham station development
9: Hampton Rd, Twickenham (nr Fifth Cross Rd)
67: Petersham Rd opp Poppy Factory,
69: Uxbridge Rd, nr Longford Cl TW12
45: High St, Teddington, (nr Cook)
30: Petershan Rd, nr The Russell Schl, TW10
2: Percy Rd, Hampton (nr. level crossing/Waitrose)
1: Hampton Court Rd, Hampton (nr Bushy Pk gates)
23(1), 23(2), 23(3): Castelnau Library, Barnes (static site)
22: Castelnau, Barnes (nr. Hammersmith Bridge)
84: Queens Rd,Richmond (nr Christs School)
37(1), 37(2), 37(3): Wetlands, Barnes (static site)
28: Holly Lodge, Richmond Pk
Bias Adjusted 2024
UK Air Quality Objective
Richmond Target
WHO Guideline

Figure B. Bias Adjusted Annual Average NO_2 Trends at Sites Across LBRuT 2002-2024

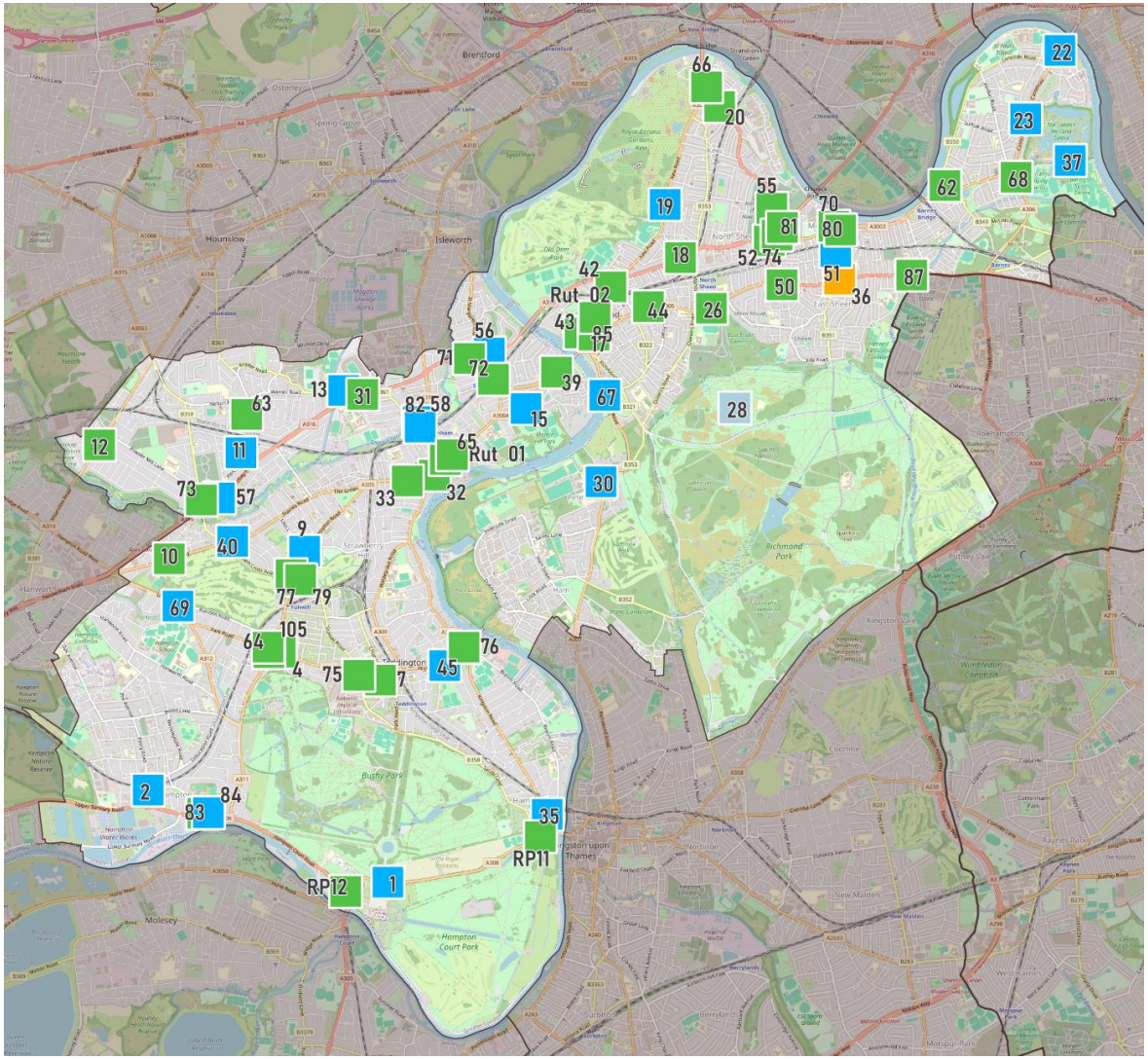



Bias Adjusted Annual Average NO2 at Sites Across LBRuT 2002-2024
Twickenham Area
NO2 ugm -3
140
120
100
80
60
40
20
0
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Rut 01: Civic Centre, York St, Twickenham
32: Kings St, Twickenham
39: Richmond Rd, nr Lidl, East Twickenham
31: A316
15: Richmond Rd, Twickenham (opp. Marble Hill Pk)
National Air Quality Objective
Richmond Target
WHO Objective


Bias Adjusted Annual Average NO2 at Sites Across LBRuT 2002-2024
Teddington Area
NO2 ugm -3
100
90
80
70
60
50
40
30
20
10
0
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
7: Broad St, Teddington (Boots)
35: High St, Hampton Wick
4: Hampton Rd, Teddington (nr. Bushy Pk Gardens)
2: Percy Rd, Hampton (nr. Oldfield Rd)
45: High St, Teddington,
National Air Quality Objective
Richmond Target
WHO Objective


Bias Adjusted Annual Average NO2 at Sites Across LBRuT 2002-2024
Mortlake Area
NO2 ugm -3
100
90
80
70
60
50
40
30
20
10
0
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
51: Sheen Lane, Sheen (railway crossing)
50: URRW, nr. Clifford Av, Sheen
20: Mortlake Rd, Kew (nr. Kent Rd)
Richmond Target
52: Clifford Av, Chalkers Corner
36: Upper Richmond Road West (URRW), nr Sheen Lane
National Air Quality Objective
WHO Objective

Map of NO_2 diffusion tube sites in LBRUT in 2024



Legend

Annual average NO_2 concentration (µg m^{-3})

0-9	WHO objective compliant (10 µg m^{-3})
10-19	Richmond target compliant (20 µg m^{-3})
20-39	National air quality objective compliant (40 µg m^{-3})
40+	Non-compliant

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period %(a)	Valid data capture 2024 %(b)	2018	2019	2020	2021	2022	2023	2024
Castelnau Library, Barnes (RI1)	522500	177166	Roadside	100	99.0	0	0	0	0	0	0	0
Wetlands Centre, Barnes (RI2)	522993	176731	Urban Background	100	86.0	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 provides the results of automatic monitoring for NO2 for the 1-hour mean objective of 200 µg m^{-3}. It was met at all sites and for every year reported. This is very good news. The data for 2024 at RI1 and RI2 is fully ratified.

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period %(a)	Valid data capture 2024 %(b)	2018	2019	2020	2021	2022	2023	2024
Castlenau Library, Barnes (RI1)	522500	177166	Roadside	100	99.0	19	15	15	16	15	15	16
Wetlands Centre, Barnes (RI2)	522993	176731	Urban Background	100	84.0	15	16	16	15	14	12	15
NPL Teddington AURN (TD5)	522993	176731	Suburban	N/A	10	N/A	N/A	13	12	14	16	N/A

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%).

All data for PM10 at Castlenau and Wetlands is fully ratified.

Warning: Data capture at NPL in Bushy Park was 10% for 2024, it has therefore been decided to exclude data from this report. It has been retained for ease of access to earlier years.

The LBRuT uses a Tapered Element Oscillating Microbalance (TEOM) to continuously monitor PM_{10}. All TEOM results are converted to reference equivalence using the Volatile Correction Method (VCM), which is administered by Imperial College London, when they process our monitoring data. As mentioned in section 1, PM_{10} is a specified pollutant for the whole Borough AQMA.

Table G provides results of automatic monitoring of PM10 and a comparison with the annual mean objective. The objective of 40 µg m^{-3} was met at all sites for every year reported. All data is fully ratified.

The 2024 annual mean for PM10 at the roadside site in Castelnau Barnes increased slightly from 15 µg m^{-3} to16 µg m^{-3}, which is what it recorded in 2021, recording 15 µg m^{-3} in 2019, 2020, 2022 and 2023. The 2024 annual mean for PM10 at the background site at the Wetlands Centre in Barnes increased from 12 µg m^{-3} in 2023 to 15 µg m^{-3} in 2024, again the same as it had recorded in 2021 and in 2018, going up slightly to 16 µg m^{-3} in 2019 and 2020 and down to 14 µg m^{-3} in 2022 and to 12 µg m^{-3}, a more significant drop, in 2023. This really does demonstrate that the levels can go up and down slightly year on year and that roadside and background levels for PM10 do not vary by very much. It also proves how exceedingly challenging it will be to reduce particulates. Unfortunately, data capture at the NPL AURN site, also a background, decreased even further in 2024 to 10%, so this is too low to draw any reliable conclusions. We will keep a close eye on levels. As has been pointed out under the NO2 section, Castelnau has seen significantly less traffic 2019 – 2024 due to the closure of Hammersmith Bridge, at the end of Castelnau, to all traffic from 10th April 2019. The bridge has undergone major repairs and re-opened to pedestrians, bikes and scooters in April 2025 but is likely to remain closed to vehicles for a number of years.

The PM10 monitoring results for the LBRuT automatic sites are compared directly to the annual mean and 24 hour mean objectives. Tables G and H provide results for the period from 2018 to 2024 inclusive. PM10 measurement was undertaken at three sites and the data capture was very good at one site - RI1 Castelnau achieving 99%, good at R12 Wetlands achieving 84%, which is just below the 85% required for Defra, and very poor at TD5, Bushy Park, Teddington NPL achieving 10%, so data for TD5

has not been included in this report. As advised, PM10 data at Castelnau and Wetlands is fully ratified; dates for ratification at TD5 NPL are unknown.

PM10 is proving very difficult to reduce. Over the 7-year period from 2018 – 2024 it has fluctuated slightly one year to the next but has largely remained flat with a very slight downward trend, so we cannot get complacent. Around half of UK concentrations of PM comes from anthropogenic sources in the UK such as wood burning, and tyre and brake wear from vehicles. This is particularly relevant for Richmond borough, where wood burning fires have increased in popularity. Specific efforts are being made to reduce PM's from burning, (see **Table M 2.3**). It is particularly significant to note no decline at either site in 2020, despite reduced traffic due to COVID-19.

It should be noted that whilst all three sites meet the UK limit value (40 µg m^{-3}) only Wetlands just meets the new, stricter WHO guidelines (15 µg m^{-3}) for PM10. Modelling indicates that exceedances on some sections of major roads within the borough, including near Richmond on the A316, should now fall within the UK limit value (40 µg m^{-3}) for PM10. In February 2025 Richmond Council installed a new automatic monitoring station in Richmond town centre, monitoring both PM10 and PM2.5 and plans to invest Section 106 funding to add PM2.5 to the Wetlands background site before the end of the year. These results will be added to future reports.

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	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period %(a)	Valid data capture 2024 %(b)	2018	2019	2020	2021	2022	2023	2024
Castelnau Library, Barnes (RI1)	522500	177166	Roadside	100	99.0	1	3	0	0	1	1	0
Wetlands Centre, Barnes (RI2)	522993	176731	Urban Background	100	84.0	0	3	0	0	1	1	0 (26.3)
NPL Teddington AURN (TD5)	522993	176731	Suburban	N/A	10	N/A	N/A	2	0	1	2	N/A

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%).

Warning: Data capture at NPL in Bushy Park was 10% for 2024, it has therefore been decided to exclude data from this report. It has been retained for ease of access to earlier years.

Table H provides the comparison with the 24-hour mean objective for PM10. The objective of no more than 35 days exceeding 50 µg m^{-3} was met at each site for all years reported. In 2024, No exceedances were recorded at any site which is good news. The number of days exceeding the daily standard remains low at all sites for the last 7 years. Again, levels are going up and down year on year so vigilance is required.

The concentrations measured in Richmond are considered typical of those measured elsewhere across London (KCL, 2012).

Elevated PM10 levels can result from episodes, which are often the result of local combined with imported transboundary conditions from elsewhere in the UK and Europe.

Table I. Annual Mean PM2.5 Automatic Monitoring Results (µg m-3)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Valid data capture for monitoring period %(a)	Valid data capture 2024 %(b)	2018	2019	2020	2021	2022	2023	2024
NPL Teddington AURN (TD5)	522993	176731	N/A	10	10	12	8	8	9	12	N/A

Notes:

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

Exceedances of the $PM_{2.5}$ annual mean AQO of 20 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%).

Warning: Data capture at NPL in Bushy Park was 10% for 2024, it has therefore been decided to exclude data from this report. Table I has been retained for ease of access to data in earlier years.

The Council, together with many other local authorities in London, did not have an automatic PM2.5 monitor in 2024 but one was installed in Richmond town centre in February 2025, so reliable Council monitoring results should be available for future reports.

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 the whole borough AQMA declared by the London Borough of Richmond upon Thames can be found in **Table L**.

The official declared name of AQMA as presented on UK-AIR is "The whole borough AQMA of the London Borough of Richmond upon Thames". It was declared on 31st December 2000 and has never been amended or revoked. No changes to the AQMA are currently proposed.

The air quality objectives pertinent to the current AQMA designation are as follows:

NO_2 annual mean with an annual air quality objective of 40 µg m^{-3}.
PM_{10} annual mean with an annual air quality objective of 40 µg m^{-3}.

The London Borough of Richmond upon Thames whole borough AQMA is located in the Southwest corner of Outer London. In air quality terms, this means that the prevailing south-westerly wind (roughly 75% of the year) brings in relatively fresh air to the LBRuT, before it blows towards the centre of London. In practice, the wind blows from all points of the compass, and this includes receiving air blowing out from the centre of London.

Table L presents a description of the single whole borough AQMA that is currently designated within the London Borough of Richmond upon Thames. Appendix C provides a map of the AQMA (the whole borough) and also the air quality monitoring locations within the AQMA.

Table J Automatic Monitoring of Sulphur Dioxide

NA. Monitoring of sulphur dioxide ceased in 2011.

Table K Automatic Monitoring of Other Pollutants

NA. Monitoring other pollutants ceased in 2012.

Table L. 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
London Borough of Richmond upon Thames	31 December 2000	NO_2 annual mean	LBRuT	No	90.6 in 2002, following Stage 4 assessment, in May 2002 46 exceedances out of 57 sites	45.3 in 2024 1 exceedance out of 68 sites	0	London Borough of Richmond upon Thames Air Quality Action Plan (2020-2025). Published March 2020	https://www.richmond.gov.uk/media/apcobnkp/air_quality_action_plan_2020_to_2025.pdf
London Borough of Richmond upon Thames	31 December 2000	PM_{10} annual mean	LBRuT	No	0 annual mean exceedences out of 3 sites; Highest concentration 28.0 µg m^{-3} (6 exceedances of the 24-hour mean)	0 exceedances. Highest concentration is14.6 (0 exceedances of the 24-hour mean)	24	London Borough of Richmond upon Thames Air Quality Action Plan (2020-2025). Published March 2020	

☒ **The London Borough of Richmond upon Thames confirm the information on UK-Air regarding their AQMA is up to date**

☒ **The London Borough of Richmond upon Thames confirm that all current AQAPs have been submitted to GLA**

2.2 Air Quality Action Plan Progress

The Council approved an AQAP for 2020 – 2025 on 10th March 2020. This is the final year of reporting on this AQAP. The Council has already approved a new AQAP for 2025-30 which will be reported in the 2026 Annual Status Report.

The 2020 – 2025 AQAP involved direct consultation and engagement with community groups. The result is a more robust, more transparent, more accountable AQAP and is public facing. Improving air quality in the borough is a political priority The AQAP reflects changes in air quality policy, creating an environment that is welcoming to sustainable transport and aimed at the pedestrian and/or cyclist, identifying specific bold and brave measures to tackle pollution in local 'hot spots' within the borough and prioritising schools.

The AQAP 2020 – 2025 is supported by the departmental Heads of Service for Environmental Health, Transport and Planning, Public Health, the Director of Public Health, the Director of Environment and Cabinet members.

Members want to prioritise air quality in LBRuT and have demonstrated this by asking officers to bring forward the consultation process and date for committee decision for the new updated 2025 – 2030 AQAP, which was formally approved on 7th April 2025. Officers launched what has recently been recognised as an award-winning strategy to engage with Community groups, involved from the outset, whose ideas and opinions have been employed to shape the new AQAP. Progress on the new 2025 – 2030 AQAP will be reported in our 2026 ASR.

Table M provides a brief summary of the London Borough of Richmond upon Thames' progress against the 2020 - 2025 Air Quality Action Plan, showing progress made during 2024. New projects, which commenced in 2024, are shown at the bottom of the table.

Table M. Delivery of Air Quality Action Plan Measures

NB - Top Three Measures are included at the top of the matrix and explained in more detail under relevant measure.

Measure	LLAQM Action Matrix Theme	Action	Estimated/Actual Completion Date	Organisations Involved	Progress Emissions/Concentration data /Benefits Negative impacts / Complaints
7.2	Cleaner transport	Tackle anti-idling borough wide	ongoing	Local Authority Environmental Health, Traffic wardens	Daily idling enforcement by traffic wardens borough wide with a focus on hotspots – level crossings and schools. Supplemented by events and campaigns delivered by the Air Quality Team
1.7	Monitoring and other core statutory duties	Provide robust far-reaching consultation for draft AQAP	2025	Local Authority Environmental Health	Robust engagement strategy for draft AQAP to involve as many people as possible, in person borough wide, Q&A online including webinars and social media. Winner of Fleet International Air Quality Strategy..
7.5	Cleaner transport	Install electric points for mobile food vendors	2024	Local Authority Environmental Health	Electrical points installed for all viable food vendors to stop day long idling. Licenses updated to require plug-in.
1.1	Monitoring and other core statutory duties	Maintain our monitoring regime in the borough	ongoing	Local Authority Environmental Health	LBRUT believes monitoring is the backbone of air quality, essential to identifying and understanding problem areas, vital to inform solutions and interventions. Throughout 2024, LBRUT maintained 2 x automatic stations monitoring NO2, PM10 and O3 and 68 x permanent NO2 diffusion tube sites borough wide. LBRuT replaced the stolen mobile air quality station with a static site in Richmond town centre in February 2025. Data for this station will be included in the 2026 ASR.

					LBRUT is part of the LAQN and values the work done by Imperial College to help achieve and maintain the highest possible standards. Bias adjusted annual results in ASR's are published on the council website as soon as approval is received here Annual Status Reports and Air Quality Action Plans - London Borough of Richmond upon Thames
1.2	Monitoring and other core statutory duties	Present quarterly updates through the air quality action plan in simple to use format and ensure complete transparency	2025	Local Authority Environmental Health	Results are continually updated and made publicly available. Latest raw data is available quarterly online here https://www.richmond.gov.uk/services/environment/pollution/air_pollution/air_quality_monitoring_and_data The AQAP is updated regularly and meetings held with community groups to ensure transparency and to listen to ideas and concerns. Data is regularly provided for concerned residents and Cllrs or anyone who requests it on request. Detailed explanations together with additional monitoring is offered and provided.
1.3	Monitoring and other core statutory duties	Continuous review and improvement of the Air Quality Network throughout the borough	ongoing	Local Authority Environmental Health	Sites are reviewed and updated annually. Review is carried out in December each year; new sites commence in January to enable full 12-month data sets. The Council listens to concerns from residents. Suggestions from community groups and individuals are received throughout the year and included where possible, sometimes for short term monitoring, sometimes for permanent sites. Throughout 2024, the Council ran approximately an additional 60 x diffusion tube sites per month to satisfy this demand.
1.4	Monitoring and other core	Positively encourage and support citizen science activities where these actively contribute to identifying and	ongoing	Local Authority Environmental Health	Target: to support 4 projects including up to 150 additional diffusion tubes for locations borough wide.

	statutory duties	tackling air pollution in the borough. Including the provision of Diffusion Tubes and handheld monitoring			The Council exceeded its target; it installed in excess of 500 x additional NO2 diffusion tubes for 4 separate projects plus ad hoc hot spot monitoring in 2024. In 2024, 1 x project involved the comprehensive monitoring of schools for a full 12 months and 3 x projects involved proposed road schemes – 1 x proposed LTN in Hampton Hill, 1 x school on the extended ULEZ (East Sheen Primary School on the South Circular/ ULEZ which was extended on 29/8/23 and potential displacement traffic for the Royal Parks Movement strategy. Royal Parks have proposed to stop through traffic in Richmond and Bushy Parks. Potentially this could be harmful to health for those living on displacement routes such as the South Circular. The Council has therefore worked with Royal Parks to establish robust monitoring within both Parks and along displacement routes outside. In all cases data was provided and will continue to be provided to help inform decision-making. Work with East Sheen Primary School has continued to help measure any effects of the extended ULEZ on 29/8/23. This was in response to concerns from parents and the head teacher. In 2024, the Council also maintained 20 x low cost Breathe London sensors when the Internet of Things project concluded. All are sited in High streets and near schools, some co-located with NO2 diffusion tubes. The Breathe London real time sensor network has proved popular with residents and Cllrs providing real time indicative data showing expected diurnal peaks and troughs for both NO2 and PM2.5's. From October 2024 this was

					managed directly by the sensor provider Clarity; data is available via Clarity OpenMap: https://map.clarity.io
1.5	Monitoring and other core statutory duties	All schools in areas of poor air quality to be incorporated into our monitoring network and regime	2024	Local Authority Environmental Health	We had already monitored schools in areas of poorer air quality and from modelling, no other schools were likely to exceed annual limit values of 40ug/m3 for NO2.but due to growing concerns, we decided all schools should be monitored over a 3 year period from 2022 - 2024. Results for schools monitored in 2024 are in Appendix C. LBRUT continued to monitor certain schools as part of its permanent air quality monitoring programme. This included St Stephens School on the A316 and East Sheen Primary on the South Circular. These 2 schools are sited near higher polluting roads in the borough, so we are keen to keep a close eye on monitoring results. Both schools were part of the Mayors air quality audits in 2018 and received funding to mitigate exposure. Both were compliant in the playground where children play and inside classrooms. Both schools received additional monitoring in 2024 which confirmed significant reductions and compliance both on the pavement outside and within the school grounds. Ad hoc air quality monitoring is offered to all schools and is regularly provided to help address concerns and to deliver projects
1.6	Monitoring and other core statutory duties	Roll out monitoring to all schools in the borough to provide information	2024	Local Authority Environmental Health	Target: 12 monitoring sites per annum in Primary Schools. In 2021, following concerns from Cllrs and parents, it was decided to increase this target – both the duration and the number of schools. Therefore, as advised above, from 1/1/22 LBRuT commenced a 3-year programme to monitor

					24/7 for a full year worst-case scenario outside all state schools within the borough. In 2024, the 3rd and final year of this programme, the Council monitored at 12 Primary and Secondary Schools for 12 months, for more robust data. This is in addition to 7 schools which are monitored as part of the permanent monitoring schedule or part of road scheme monitoring. Results for the schools monitored in 2024 are in appendix D. In addition, hot spot monitoring for 1-month NO2 and hot spot PM10 and PM2.5 at any school that requests it, is always available. Annual monitoring continued throughout 2024 at 4 sites in and around East Sheen Primary School on the South Circular, post implementation of the extension of the ULEZ to the north and south circulars, as requested by the school due to parental concerns.
1.7	Monitoring and other core statutory duties	Implement a new interactive AQAP, which will be updated regularly to provide transparent and concise updates to measure our performance as a borough. Air quality data to be updated quarterly.	ongoing	Local Authority Environmental Health	AQAP was adopted by Cabinet on 10/3/20 and the AQAP is available on the Council website. Air quality data is now updated quarterly on the Council website here Air quality monitoring and data - London Borough of Richmond upon Thames A new AQAP was due to be commenced in 2025 but Members requested that this be bought forward a year to support innovative and robust air quality policy in LBRuT. The Air Quality team were delighted to enable this, and a new AQAP was adopted on 7th April 2025 which will be reported in the 2026 report. This demonstrates the commitment of both officers and Cllrs to the air quality agenda.

1.8	Monitoring and other core statutory duties	Invest in new monitoring equipment as new technology moves forward. This could see enhancement to the diffusion tube network and help provide real time data	2024	Local Authority Environmental Health	Target: 1 or 2 new monitors per year to be tested. Various products under consideration. In 2024 the Council continued to provide in house funding for 20 x air quality sensors to continue real time “low cost” air quality monitoring of NO2 and PM2.5’s borough wide. In 2024 this included 10 sites in town centres and 10 sites at a selection of Primary Schools. This followed on from the successful South London Partnership Defra funded project in 2022 for which LBRUT was a member. In October 2020, it purchased 25 x personal pollution monitors for school and Council staff to help them better understand their own exposure to air pollution. These were used ad hoc throughout 2024 to help pupils and residents better understand exposure on their walk to school, work or leisure activities.
2.1	Emissions from developments and buildings	New buildings and development. We have embedded air quality in our Local Plan and will produce a Supplementary Planning Document (SPD) that will help to deliver our aspirations for cleaner air in the borough. This document will cover all areas of planning and ensure developers focus on air quality throughout the build and for the life of the development	June 2020	Local Authority Environmental Health Planning	Ongoing. Air Quality is now embedded in our Local Plan and the borough adopted a new Richmond specific AQ SPD in June 2020, focused on the council’s priorities for new developments, including formalising the Section 106 conditions. The AQ SPD is now applied to all major planning applications, which reinforces the Mayor’s requirements relating to AQ neutral for both buildings and transport. The AQ Officer requests S106 payments wherever possible from developers as part of mitigation measures on major developments. LBRUT push for AQ positive and healthy streets approach in major developments (Stag Brewery) at the pre-app stage for maximum benefits and inclusion. Car free developments are requested wherever PTAL rates permit. If parking is

					required, it is requested as a block near entrance. Car club spaces as per LBRUT AQ SPD and electric vehicle charge points as per London Plan plus robust travel and servicing plans are conditioned. Opportunities for local district heating network are identified wherever possible. Green space is important to LBRUT, so a lot of effort and negotiation both at pre-app and planning stage now takes place with developers and planners to ensure adequate, appropriate and well-located green space is retained/ made available in all new developments; all mature trees are retained wherever possible, often aided by joint working of EH with Parks dept.
2.2	Emissions from developments and buildings	Delivering Cleaner Construction: demolition and construction can have a significant impact on local air quality. We will ensure that sites are regulated in accordance with the Mayor of London's Non-Road Mobile Machinery (NRMM) LEZ where this is applicable. This project is currently being delivered throughout London by our joint regulatory service	ongoing	NRMM team	LBRUT, together with LB Merton are mindful of the large proportion of emissions contributed by Non-Road Mobile Machinery (NRMM). All major sites are therefore visited and requirements enforced by our London wide NRMM team based in our LB Merton offices. Latest NRMM regulations are routinely applied, and planning officers are updated. In 2024, as in 2023, EH at LBRUT requested from Planning that NRMM conditions be imposed on 100% of all major construction sites. Compliance rates for NRMM equipment, on arrival at inspection by the NRMM team was 87.5% which is very good. As time goes on, construction appear more aware of requirements. Continued inspection, however, is considered very important. For NRMM details, see table N.

2.3	Emissions from developments and buildings	Continue to raise awareness of the fact that the whole borough is covered by a smoke control order and provide information to suppliers of solid fuels on restrictions within the borough. Actively press for more regulatory powers to cover the impact of wood burning appliances.	ongoing	Local Authority Environmental Health Trading standards	LBRUT accept that solid fuel burning is a major source of PM2.5 (23 -31% in London) that must be controlled at the local level. Addressing this source is crucial for achieving the LES target to meet WHO guideline levels for PM2.5 by 2030. Wood burning stoves and open fires are popular in LBRUT. In 2024 EH investigated all complaints on smoke control. LBRUT is part of the Defra funded London Wood Burning Project (LWBP) and its sister project London Wood Burning Project 2 (LWBP2) and is a member of the GLA engagement group on wood burning. In Autumn/Winter 2023/4 and 2024/5 Richmond with the LWBP raised awareness of the health impacts from internal solid fuel burning on radio, local billboards, backs of buses, on social media and on the Council website. This followed detailed research by Imperial College London in Autumn/Winter 2022/3 to evaluate all types of internal wood and solid fuel burning, which involved monitoring inside and outside homes burning a variety of different fuels in various appliances. The resulting data informed the awareness campaign. More information is available here London Wood Burning Project. For the last 5 years, including 2024/5 Richmond communications team ran a campaign on the Council website and on social media to remind residents and businesses of new requirements in smoke control areas. In 2020, bonfires were banned on all Council allotments at all times.

2.4	Emissions from developments and buildings	Promoting and delivering energy efficiency and energy supply retrofitting projects in workplaces and homes through EFL retrofit programs such as RE:FIT, RE:NEW and through borough carbon offset funds.	ongoing	Local Authority Climate Change	The Climate Change team at LBRUT worked on many projects throughout 2024. Delivery of energy efficiency improvements for those on the lower incomes and in the least energy efficient homes were targeted through the Warm Home Packs. The Warm Home Packs project targets households in Richmond who have a combined annual income of less than £40,000 per and an EPC of between D-G. Each eligible household who claims their Warm Home Pack will receive a package of LED lightbulbs, radiator foils and draft excluder tape. The distribution of the Warm Home Packs has been highly successful with 282 packs distributed, which goes beyond the initial target set out and builds on the 1325 Warm Home Packs distributed in the autumn and winter of 2023/24. Richmond launched a group buying solar scheme in November 2024 with partner Make My House Green. The Making Businesses Greener scheme provides energy and sustainability audits for businesses, suggested actions which will reduce energy use and improve sustainability and access to the GreenMark environmental management
2.5	Emissions from developments and buildings	Reduced emissions from council operations, including from buildings, vehicles and all activities.	ongoing	Local Authority Climate Change Facilities Management	Richmond's Scope 1 and 2 emissions for 2023/24 were 2100 tCo2e, compared to our baseline figure of 6414 tCO2e in 2018/19. The figures show an overall decrease in emissions for 2023/24 compared to 2022/23 and the baseline levels in 2018/19. Total emissions decreased by 11.5% between 2022/23 and 2023/24, with a decrease of 67.3% since 2018/19. This includes a 29% reduction in scope 1 emissions, which reflects the reduction in gas

					consumption in Council buildings from the baseline in 2018/19. A Decarbonisation Strategy for operational buildings has been developed which sets out the priority buildings that will be targeted for decarbonisation work and the Councils long term approach to reducing carbon emissions from buildings. Both Twickenham Library's and Richmond Library's works were completed in September 2024, with fabric improvements and secondary glazing in Twickenham, and secondary glazing installed in Richmond. Vineyard Primary School's LED lights were installed in August 2024 alongside an air source heat pump and LED upgrade being installed at the Hampton Youth Centre as part of phase 2 works. A feasibility study was completed at the Power Station Youth Centre. Stanley Primary and East Sheen Primary had work completed in Spring 2024 through the LED pilot programme. Following the completion of the fleet transition plan by consultants Cenex, a vehicle decarbonisation strategy was developed in collaboration with Procurement and Finance. The strategy formalises the process for decarbonisation of the fleet, including the centralisation of all vehicle procurement through the Procurement team, scrutinising the need for vehicles, and ensuring new vehicles are electric vehicles. The strategy was approved in October 2024. The centralisation of vehicle procurement will enable the monitoring of the decarbonisation of the fleet.

					A paper on the Phase 1 Options Appraisal of electric charging points to operational buildings went to Directors' Board in March 2024. This paper detailed the site selection for Richmond and the number and types of electric chargers to be installed at these sites. Load testing has been conducted in all the sites, and there is enough capacity at each site for delivery of the charging points and to maintain operations. A fire risk assessment has also been completed for each site. Once installation is complete on these sites, the project will be rolled out to other operational sites, including leisure centres. LBRUT continue to reap the benefits from the installation of solar panels on the roof of the Civic Centre, the insulation of original windows in listed buildings, heat pumps and conditions set for contractor fleet through procurement.
3.1	Public health and awareness raising	A new communications strategy developed in partnership with the community and updated regularly to highlight initiatives and campaigns. This includes work initiated by the community	2021 also ongoing	Local Authority Environmental Health Communications team	The new communications plan is updated quarterly by LBRUT communications dept. All initiatives are shared and promoted wherever possible, such as idling action awareness raising, Clean Air Day, Car Free day, Asthma Awareness Day, Bike week, walk to school week, wood burning and more. New community webpages, as part of the AQAP, were requested by the community to discuss the draft AQAP pre-launch. Once the pages went live and going forward community updates and input on local initiatives are encouraged. This is seen as a useful place to share knowledge.

3.2	Public health and awareness raising	We will actively lead in important campaigns and initiatives that raise awareness within the borough, including clean air day, car free day, airTEXT and idling action campaign events, as well as proactive measures such as the use of road closures and park-lets .	ongoing	Local Authority Environmental Health	BRUT aim for at least 4 campaigns and initiatives a year. In the 6 weeks preceding Clean Air Night we ran a public campaign around burning in homes, via social media and letters to public houses that have open fires, in conjunction with the London wood burning project. For Clean Air Night on 22nd January 2025 the Council's Air Quality team ran a pop-up event in Richmond town centre to discuss wood burning and help everyone make informed heating choices. For Clean Air Day on 20th June 2024, we ran an in-person event in Richmond town centre to provide information on air quality and active travel which included air pollution themed street performers. We ran a primary school poster competition, and the air pollution entertainers visited two schools that have school streets, to raise pupil's awareness of the campaign at the start and end of the day. We encouraged local businesses to consider greener ways to work with suppliers and employees to help reduce contributions to local air pollution. We supported the Ask about Asthma campaign on 9-15 Sept 2024, working with schools and young adults to raise awareness that air pollution can trigger asthma attacks. For Car Free Day on 22nd September 2024 we promoted active travel and the many schemes available in the borough to hire bikes, e-bikes and cargo bike network (which has expanded so that every village now has one). The Council again offered free play streets to residents and promoted play streets and active travel to residents and businesses via social media, Council website and Council e-letters. 23 play streets were closed free of charge by the Council over the weekend of 21/22 Sept 2024.

					We continue to deliver idling action events across the borough, running 10 events at hotspots and schools in 2024. The events engaged with a total of 774 drivers. The AirText early warning alert service when air pollution is predicted to be elevated, was promoted to schools, at events, via the Council website and in response to complaints and enquiries throughout 2024. Alerts are automatically forwarded to doctor's surgeries, schools and pharmacies to raise awareness and reduce exposure amongst the most vulnerable. From October 2024 – January 2025, as part of our Air Quality Action Plan (AQAP) consultation we carried out in-person engagement with a large number of residents and students via community, youth, art and health centres as well as schools, and holding drop-in events at York House and in town centres together with online webinars. This raised awareness of air pollution as well as what LBRuT are doing to tackle it. In February 2024, the Air Quality team participated in the borough's Schools eco summit attended by 9 schools, giving a shortened version of our air pollution workshop to around 80 pupils. In 2024 Church Street Twickenham remained closed to traffic 10am – midnight daily.
3.3	Public health and awareness raising	We will create a new Air Quality & Transport Committee specifically to look at Air Quality and actively engage with the community	2020 ongoing	Local Authority Environmental Health	A single Transport and Air Quality Committee was created to integrate transport and AQ in all decision making on a fundamental and daily basis with one cabinet member covering both departments. In 2024 this resulted in much joint working between Air Quality and other departments such as Highways and

					Climate Change addressing issues such as clean and green High St recovery, a new e-cargo bike scheme and clean, electric ice cream pitches (see 7.5). It has also resulted in a closer working relationship between the transport and air quality officers, greater awareness among staff for air quality and a higher priority for considering air quality in road improvement schemes.
3.4	Public health and awareness raising	We will work with our Public Health partners and look at the opportunities to join up our campaigns and to deliver joint health benefits of active travel and healthy lifestyles	2021 ongoing	Local Authority Environmental Health	In 2024 Public Health promoted the Richmond Moves campaign, which focuses people within the borough to be more physically active and have healthier lives. As part of this campaign, air quality was also highlighted, including for people to avoid physical activity near busy roads and pollution hotspot areas in the borough. In 2024, meetings continued with PH to deliver joint messaging for health and air quality benefits for numerous strategies around schools, dementia, and the equalities agenda. These followed on from a training module, developed by PH, with input from the Air Quality Team in LBRUT, to help front line NHS workers deliver joint air quality messages to vulnerable patients especially those with breathing or heart problems, in the community and schools, via “make every contact count”.
3.5	Public health and awareness raising	We will work with our Communications Team to promote the use of low pollution, back roads for walking or cycling to reduce individual exposure to air pollution	2022 ongoing	Local Authority Environmental Health	The Air Quality team is working closely with Active Travel, School Travel Planner, schools, communications and via local presentations to promote low pollution walking routes. These were also promoted at in person events throughout the year such as Clean Air Day 2024, consultation presentations, webinairs and events for the new AQAP, and attendance at ad hoc community events.

3.6	Public health and awareness raising	We will create a joint action working group that will actively involve communities in the air quality agenda and that reports to the Chair of the new Air Quality & Transport Committee	2020 ongoing	Local Authority Environmental Health	This was created to inform and shape the existing 2020-25 AQAP. It meets once or twice a year, including in 2024, with useful presentations, updates and information from the Air Quality Team, who answer or investigate any questions or concerns raised. It was particularly useful and met numerous times in 2024 to help inform the priorities and wish list of community groups in the drafting of the Council's new 2025-2030 AQAP. The Council was eager to hear from as many people as possible in the development of the new AQAP and are hopeful that this is reflected in the latest far reaching and ambitious version.
3.7	Public health and awareness raising	We will increase the number of schools with accredited travel plans by 20% per year with an aim to have up to 90% of all schools covered by 2024. We will encourage all schools to join TfL STARS programme	2022 ongoing	Local Authority Environmental Health	LBRUT has a part time Travel Planning Officer to help schools draw up travel plans. LBRUT also encourage walking/cycling to school. LBRUT encourages all schools to sign up to the TfL Travel for Life accreditation scheme. In 21/22 academic year 43 (53%) schools had TfL STARS accredited STP's, and the same was achieved in 22/23 academic year. As resources have been prioritised elsewhere this number is likely to have dropped for 23/24 academic year – 30 (39%) schools accredited but over 90% 'Engaged' on the new system. All year 6 pupils receive cycling proficiency training before they leave for secondary school. LBRUT also helps schools introduce road safety schemes which has been a big priority for 22/23 and 23/24 academic year with engineers designing and/or consulting on around 15 plus school schemes.

3.8	Public health and awareness raising	Better Legislation: We will actively campaign and participate in the call for a new Clean Air Bill that is fit for the future.	2021 ongoing	Local Authority Environmental Health	LBRUT together with other London authorities and London Councils continue to attend meetings with Defra and respond to consultations, including on Defra's Environment targets, the latest Air Quality Strategy, PM2.5's, and smoke control legislation to try to strengthen targets and standards.
3.9	Public health and awareness raising	Burning in the borough: We receive regular complaints and concerns from residents about bonfires in the borough.	2021 ongoing	Local Authority Environmental Health	We have banned bonfires on all borough allotments and may consider further restrictions. Bonfires are a major source of harmful PM2.5's. We have substantial online information, strongly discourage all forms of burning, have contact forms and a contact number and respond to all complaints about bonfires. We take swift enforcement action against builder's bonfires. All residents are encouraged to compost green and organic waste, use the Council's weekly food waste and recycling services and fortnightly green waste collection or visit Townmead Rd Reuse and Recycling Centre.
3.10	Public health and awareness raising	Reduce impact of burning unauthorised fuel and the use of wood burning appliances Lobby Government for additional powers. Take action to address any complaint regarding unauthorised use.	2020 ongoing	Local Authority Environmental Health	The whole of LBRUT is a smoke control zone. The Council receives complaints about smoke from a chimney every year. All reported cases are investigated and enforced. Richmond Council is part of the Defra funded London Wood Burning Project 2 which in Winter 2024 ran campaigns on radio and on the back of buses to advise of health impacts and discourage solid fuel burning borough wide. This was informed by the detailed research results of Imperial College London in 202/3. More information is available here London Wood Burning Project In addition, every year for the last 5 years, Richmond Council has launched smoke control campaigns for residents and businesses on the Council website, in Council

					e-newsletters which reach 42,000 households and across social media. Officers from LBRUT attend all Defra seminars to ensure they remain up to date with latest legislation and enforcement. A new smoke control order, to bring vessels within scope is under consideration.
3.11	Public health and awareness raising	Audit all schools in areas of poor air quality and provide financial support for measures that tackle and reduce exposure to pollution	2020 ongoing	Local Authority Environmental Health	Following on from the Mayor of London's school audit programme, LBRUT continued to offer an audit to all schools in areas of poor air quality. The Air Quality team audited one school per term and so completed three audits in 2024 (3x primary schools). Each school received a tailor-made report which included observations, monitoring results and a range of recommendations that aim to reduce exposure at and around the school site. The schools received support afterwards to help implement improvements such as installing a green screen or bicycle storage racks. In 2024 Richmond Council became aware of a demand from schools for an air pollution workshop. In response the Air Quality team produced an interactive 'air pollution detectives' workshop which was delivered to 4 Primary schools in 2024, engaging an estimated 175 KS2 pupils. This is now considered a greater priority than audits, which have largely run their course.
4.1	Delivery servicing and freight	Develop plans for business engagement, including optimising/greening deliveries, supply chain and waste removal	2021 ongoing	Local Authority Environmental Health	During 2024, the Enterprise and Business Growth Team within the economic development section of Richmond Council, commissioned Carbon Architecture to deliver a Greening Your Business Programme in both LB Richmond and LB Wandsworth. This programme has been delivering support to 25 businesses in Richmond, helping them to

					become more sustainable, to reduce their carbon emissions and to help them to achieve Level 1 accreditation of the Green Mark . In parallel with this programme, we are also encouraging our local businesses to adopt more sustainable business practices through our main business support programmes and to engage with the newly formed Richmond Sustainability Forum.
5.1	Borough fleet	Richmond will upgrade its own fleet and that of our suppliers to the highest Euro Standards	2025	Local Authority Environmental Health	Reducing emissions from LBRUT's own fleet and that of contractors is seen as key. LBRUT believes it is very important to lead by example, so has a target for the entire fleet to be the latest Euro standard or electric by Dec 2025 By Dec 2024 LBRUT had 73 vehicles, 71 (97.2%) are Euro VI, 1 x hybrid (1.4%) and 1 x EV (1.4%)– zero emission. Issues regarding the installation of EVCP at the Council depot is delaying fleet upgrades. Contractors are incentivised to use clean fleet via procurement (see 7.3)
6.1	Localised solutions	The introduction of a borough-wide 20 mph speed limit. This will help create an environment that is welcoming and safer for pedestrians and cyclists	2020 ongoing	Local Authority Environmental Health	The installation of 20 mph speed limit in over 90 % of all LBRUT roads was completed by April 2020 (implemented in 24 segments). Further reductions have been made, such as along the A310 corridor and parts of Staines Rd, so that by Jan 2024 over 95% of LBRuT roads have 20mph speed limits. This has helped create an environment that is welcoming and safer for pedestrians and cyclists to help encourage and increase the mode share for walking, cycling and public transport, particularly important as we develop the "new norm" post COVID.

6.2	Localised solutions	Provide an independent assessment of the air quality benefits of the new 20 mph speed limit - monitor 3 locations before and after 20 mph limit implemented	2020	Local Authority Environmental Health	Completed. A report was commissioned to review impacts on air quality before and after the introduction of the borough wide 20mph speed limit. Unfortunately, due to COVID and the large number of changes in lifestyles, which affected traffic 2019 to 2020, it was not possible to establish either a positive or a negative effect of speed on levels of air quality. Air quality did improve generally in 2020; it declined slightly or remained the same in 2021 and it has improved at most sites in 2022 and again in 2023. Any impact from speed alone is not possible to ascertain. Speed did reduce slightly with the new 20mph. The traffic survey in early 2021 comparing 2018 to 2020 confirmed a reduction in speed on most roads, contrary to increased speeds affecting much of London during lockdown. From recent traffic surveys in 2024, the average speed continues to reduce slightly, which is good news from a safety perspective.
6.3	Localised solutions	Additional speed reduction measures at A310 Kingston Bridge to Twickenham, A305 Staines Road Corridor and A308 Hampton Court Corridor	2024	Local Authority Environmental Health	These three corridors - A310, A305 and A308 were identified for corridor studies and were taken forward in 2022/23. Works on the A310 corridor commenced in 22/23 with the construction of a part segregated cycle lane along the length of Strawberry Vale/Manor Road. This scheme was completed early 2024 and works then started to consider speed reductions measures along Kingston Road. This scheme was then put on hold pending a review of the Manor Road / Ferry Road junction in recognition that any significant changes here could impact on traffic movements and flow along Kingston Road. Feasibility plans for this junction commenced late 2024 and this is a project to be carried over

					into 2025. The speed limit was also reduced to 20mph on the A310 corridor between Twickenham and Hampton in January 2024. The works on Hampton Court Road outside the Palace were delayed pending approvals from the Palace given that they part own the land to the front of the Palace. The scheme for an offroad cycle route was consulted on in 22/23 however the proposal received significant opposition and was not approved at Committee. Works commenced again in 2024 to look at ways of enhancing the onroad cycle lanes along this section of road and this work in continuing into 2025. Staines Road did not receive funding sufficient for traffic calming the length of road in 22/23. However, consultation was undertaken in early 2023 for a parking proposal with safety improvements around junctions included. The double yellow lines were improved and implemented in 2023 along with a 20mph speed limit between Fifth and Sixth Cross Roads. In addition, a scheme was consulted on between Sixth Cross Road and Apex Corner for raised crossings, a new traffic island and a lower speed of 20mph. The lower limit was not support however approval was granted for improvements around the toucan crossing by Glebe Way and a new traffic island. The toucan works including enhanced cycle measures into the adjacent estate and a raised table were completed in 2024.
6.4	Localised solutions	A new Clean Air Zone (CAZ) for Richmond Town Centre to reduce polluting vehicles and dissuade vehicles from unnecessarily using our town	Wider plans 2024, following ULEZ	Local Authority Environmental Health	Following the extended ULEZ to outer London in August 2023, LBRUT is now considering wider plans for Richmond town centre which may go above and beyond a CAZ.

		centre as a through route (subject to funding approvals)			Traffic reduction measures are being considered in the medium and long term as part development plans for the entire town centre. Throughout 2024, Transport and Air Quality Officers have trialled Virtual Loading Bays (VLBs) via a Defra funded air quality Smarter Green Logistics project headed by Cross River partnership (CRP) to better manage limited parking, provide timed delivery slots and avoid re-visits/ vehicles partly blocking the carriageway due to lack of parking space. All help provide useful data whilst reducing emissions. Defra funding ceased in Dec 2024 but Richmond Council has decided to continue with the project to better manage limited kerbside space. As part of the town centre planning, kerbside activities and uses will be reviewed to improve servicing and reduce air quality impacts from these activities. Funding is being sought from TfL to improve Bus operations within Richmond Town Centre to improve operational efficiencies and reduce pollution from these users of the town centre. Targeted improvements in journey times should increase patronage over the private car.
6.5	Localised solutions	Focus our policies and Local Implementation Plan on prioritising cycling and walking in the borough	2020 ongoing	Local Authority Environmental Health	Richmond Council published its Active Travel Strategy in 2020. The strategy includes a detailed list of actions that the council is pursuing to increase walking and cycling in the borough, including a strategic cycle network connecting the key town centres. Despite the pandemic, progress was made towards establishing this network with cycle improvements delivered on Kew Road, Hampton Court Road and Castelnau, with further improvements in development for Hampton Court Road, Hampton Wick

					Roundabout, Strawberry Vale and Staines Road. The target delivery date is 2025, subject to funding being secured. Other works currently being assessed for cycling include a review of London Road in Twickenham in addition to a detailed assessment of the London Rd/Whitton Rd signals for cycle improvements and continuation of the A310 cycle network with works being considered at the Manor Road/Ferry Road junction this is part of the strategic cycle route. Works continue on the consideration of contraflow cycle lanes in the borough. A scheme was also completed to enhance an existing cycle link which links Arragon Road to Amyand Park Road. We also improved two existing zebra crossings on Church Grove and Hampton Court Road to allow for cycle crossing to take place, these ensure a continuous cycle link between Kingston Bridge and Bushy park. Other measures introduced in 2024 include new zebra crossings, two on Shacklegate Lane and one on Arragon Road and a new pelican crossing with wider footways on Friars Stile Road outside The Vineyard School. Work is underway for improved crossings and safer school zones in a number of locations in 2025 including Cromwell Road and Fairfax Road (Teddington), Christchurch Road (East Sheen) and Amyand Park Road (Twickenham) with the target delivery date for these schemes at the end of 25/26.
6.6	Localised solutions	Continuing the roll out of Electric Vehicle Charging in the borough. Target. of 400 EV charging points by 2025	2021 ongoing	Local Authority Environmental Health	Ongoing - ambition to exceed target. Target achieved in 2021. Ambition to achieve more. LBRUT is keen to enable and encourage uptake of zero tail pipe emission vehicles in preference to petrol or diesel

					vehicles. It accepts the need to provide space on borough roads and in borough car parks for an effective network of charging points of different types to cater for all users. The majority of charge-points are lamp column chargers on residential roads catering for residents without off street parking An additional 224 public chargepoints were added in LBRUT in 2024, comprising 217 lamp column chargepoints, 4 fast (Believ) chargepoints in the Council run Friars Lane car park and 3 rapid chargepoints provided by TfL. In total there were 1,043 chargepoints in place by the end of 2024 (953 slow (lamp column), 82 fast (Source London/Believ) and 8 rapid (TfL)). Additional lamp column and fast chargepoints will be added in 2025. The Council is continuing to investigate options with private sector providers for further fast/rapid charger provision at no cost and is also planning a trial of cross-pavement solutions to enable people to use a home charger even if they do not have off-street parking.
6.7	Localised solutions	Investing in Cycling Infrastructure in the borough - 1000 Cycle stands, 30 Cycle Hangers, 200+ Cycle Racks by 2023	2024	Local Authority Environmental Health	The borough is working to rapidly expand its residential bike hangar programme, with 20 new units installed in 22/23, 15 installed in 23/24 and an additional 30 bike hangers creating 180 additional cycle parking spaces in 2024/5. The programme provides secure cycle storage for residents that cannot easily store bicycles within their homes. This is in addition to 30 on-street Sheffield stands. Richmond has now exceeded all cycling infrastructure targets including 1000 cycle stands by 2023. LBRUT does not monitor the number of cycle parking stands installed as part of new developments – they are

					conditioned as per London Plan 2021 and noted as part of the planning application, but cumulative totals are not available. This is now becoming an important addition particularly for residential cycle parking.
6.8	Localised solutions	To reduce traffic around schools at drop off and pickup times we will be piloting 'School Streets' at selected schools with a view to extend these in the borough	2020 – upgraded due to COVID - ongoing	Local Authority Transport, Parking teams	Richmond Council is endeavouring to promote active travel to school, alongside improved safety and air quality. LBRUT had a target of 3 school streets in March 2020. This target was significantly increased in 2020 during COVID to help with both safety and social distancing around schools. By October 2020 15 temporary schools streets had been installed under phase 1 and 2. In 2021 13 School Streets were made permanent and 3 more were consulted upon. In 2022 an additional school street was made permanent. In 2023 1 further School Street was trialled and TAQ committee approved it being made permanent. 1 is still under consideration awaiting a school decision on accesses. As part of Phase 4, a further 5 schools are in the process of being considered and will go to public consultation soon (2 have already been consulted on - Heathfield Infants and Heathfield Junior). These 5 have now been installed as trial School Streets and we are in the early stages of considering 2 or 3 Phase 5 schools. In 2022-25 the political vision for Schools Streets is to improve the visibility of the existing school streets rather than push for many more new ones - we are currently trialling this new feature and will roll out a priority implementation plan going forward once the trial is over.

6.9	Localised solutions	Pilot internal air quality filtration in schools and take part in GLA assessment in effectiveness of different filtration units at nursery schools	2020	Local Authority Environmental Health	Completed. Air filtration units were piloted at 2 x primary schools 2019 – 2020. This pilot is now complete. It emerged that performance was dependent on routine maintenance - i.e. schools replacing/cleaning filters when necessary, which effected the value of the intended report. COVID and funding issues further disrupted this. In 2019, the GLA carried out an audit of 20 nursery schools in London including Windham Nursery School in LBRUT. All received reports and joint funding from the GLA and local authority to help with recommended improvements. In addition, the GLA selected 5 nursery schools for a detailed survey of 5 different air filtration systems. This resulted in a more robust report on the effectiveness of air pollution purifiers : https://www.london.gov.uk/sites/default/files/2020212_afs_trial_findings_report_v8.3_inc_apdx.pdf
7.1	Cleaner transport	We will commission a Diesel Levy options paper. We will also benchmark against other leading boroughs	2020 reconsidered 2023	Local Authority Transport, Parking teams	An Emissions based parking levy report was completed in May 2020 looking at 5 options to address both harmful effects of traffic fumes and Climate Change Impacts to support a zero emission target for London by 2050. It reviewed a 2018 report on emission-based resident parking and considered options adopted elsewhere. Following the ULEZ expansion in August 2023, members have considered the option of introducing an emission-based charging system. At the last review of parking charges, the decision was made to set the new charges aimed at encouraging less car usage/ownership to increase the wider use of sustainable transport modes such as public transport, walking and cycling. An emission-based charging structure has not been taken forward at this time

					as this has been superceeded by the London ULEZ, but it will remain under consideration for future reviews of parking charges
7.2	Cleaner transport	Anti-idling: This is a priority action for the borough and we will be working tirelessly within given resources to ensure that this is tackled for all vehicles including taxis	2020 ongoing	Local Authority Environmental Health Parking, TfL	This is a top political priority. In 2024, traffic wardens engaged with 8226 drivers across LBRUT, warning drivers and requiring switch off. All drivers complied, so no FPNs were issued. This was the 5th year of CEO enforcement and a total of over 61,000 warnings have now been issued. This is far higher than many other London authorities. In 2024 the Council continued their own monthly in-house idling events, some with volunteers and Cllrs, largely around level crossings but also around schools and hotspots in response to complaints. LBRUT continued to promote its own pledge for engine idling for businesses and schools, encouraging all schools to pledge not to idle, in return for a large no idling banner. These are displayed as reminders to motorists on boundary fences. In 2024, LBRUT investigated all engine idling complaints, requested traffic wardens support where relevant and erected additional no idling signage where practical. Much work has also been carried out with TfL buses and black cabs outside Richmond and Twickenham stations and at Richmond bus garage, talking to drivers, talking to TfL and Idling Action events at these locations. Compliant vehicle numbers are gradually increasing, partly due to the increase in EV's and vehicles with automatic cut outs, but the problem of idling persists. To try and address this, in the new 2025-30 AQAP Richmond is exploring the

					potential for a borough wide PSPO to help enforce against idling.
7.3	Cleaner transport	We need to lead by example so we will be developing a 'benchmark test' to gauge the impact of internal decision making around factors such as procurement	2021	Local Authority Environmental Health, Procurement, Climate Change	LBRUT has developed a benchmark test for procurement to help influence and incentivise suppliers to use the cleanest vehicles possible to reduce pollution from Council/contractor logistics and servicing. Euro VI/EV's are required on new contracts and has been required for the 10 year waste and recycling contract. This represents a substantial improvement on the former fleet and will help reduce emissions borough wide. As advised in 2.5, further benefits will materialise via the Climate Change's decarbonisation of the fleet strategy The strategy formalises the process for decarbonisation of the fleet, including the centralisation of all vehicle procurement through the Procurement team, scrutinising the need for vehicles, and ensuring new vehicles are electric vehicles. The strategy was approved in October 2024. The centralisation of vehicle procurement will enable the monitoring of the decarbonisation of the fleet.
7.4	Cleaner transport	Tackle Council work place emissions and promote the Council Travel Plan to the Council employees	2021 ongoing	Local Authority Environmental Health, Facilities Management	LBRuT continued to encourage working from home where practical in 2024 and will continue so to do. This will help reduce emissions from travelling to/from work. Throughout 2024 the Council continued to promote healthier travel habits for its staff, including walking, cycling and using public transport for business visits. Work Oyster cards are provided for business travel/site visits on public transport.

					Cycle to work scheme is encouraged. Cycle facilities on Twickenham campus include showers and changing rooms. Staff cycle parking is increased by removing car parking bays as demand increases. The Council has a shared cargo bike for staff and has become a corporate car club member. Parking is only provided for essential car users, usually for 2 days a week. Free parking for all other officers, of all grades, has been abolished. All initiatives will help reduce emissions.
7.5	Cleaner transport	Licensing & Idling: We will seek to ban diesel emissions when serving ice cream and require all non-itinerant food vans with licensed pitches to plug into an electrical source. We will work with our Licensing Team to introduce conditions at annual license renewal to prevent this idling	2024 ongoing	Local Authority Environmental Health, Licensing, Climate Change	LBRUT introduced this policy in its AQAP in March 2020 to address a specific concern with idling ice cream vans and food vendors. In 2022, the Air Quality team progressed this action with the Licensing and Climate Change teams to fund free electrical plug in points for all non-itinerant mobile food vendors by 2024 and to make it a condition at annual license renewal to plug into an electrical source. This went to Licensing Committee on 31/1/23, which means from this date, all new traders must be euro 6 and plug into an electrical feeder pillar where one is supplied by the Council for power whilst trading. No idling will be permitted. Existing traders must be euro 6 compliant by 1/1/24 and likewise plug into an electrical feeder pillar where one is supplied. By December 2024, all viable static sites for mobile food vendors, including 2 challenging sites requiring running cable within the structure of Hampton Court bridge, had plug in points. All are now required to be used. The 3 remaining sites are all riverside locations in Petersham, Ham and Twickenham. Distance from a UKPN jointing point makes Petersham and Ham sites cost prohibitive and Twickenham

					Riverside is about to be redeveloped – a new plug in point is included in the new development. Battery/electrical generators are under consideration for non-viable pitches.
7.6	Cleaner transport	Support the development and use of 'Car Clubs' in new residential developments, by station interchanges and in town centres.	ongoing	Local Authority Transport and Environmental Health teams	Car clubs operate throughout the borough and are positively endorsed by the Council. They are required where relevant through planning condition (LBRUT's AQ SPD 2020 S92). In 2024, there were 66 car club bays available to the operators Enterprise Car Club and Zipcar; however, some were unoccupied for a large part of the year due to residual demand issues and delays in supply of new vehicles caused by the global shortage of parts affecting manufacturing, primarily microchips. Consolidation of bays will take place in 2025. The council worked with Zipcar to launch the free-floating car club Zipcar Flex in the north of the borough from July 2021. In 2024 there were 28 vehicles available on average, more than 80% of which were electric. On average in the year there were 961 active members per month, making around 2,300 trips each month.
7.7	Cleaner transport	Tackle idling vehicles at schools as a priority	2020 ongoing	Local Authority Environmental Health and Parking	Traffic wardens target schools at pick up time on a regular basis. This continued throughout 2024. In 2023/4, active travel plans were encouraged and 15 school streets became permanent, encouraging more walking, scootering and cycling. This was considered a better option than targeting idling alone. However, traffic wardens and our Idling Action events, continued to regularly target roads around schools at collection time.

<table>
<tr><th></th><th>New Projects for 2021</th><th>Updates for 2024</th><th></th><th></th><th></th></tr>
<tr><td>7.8</td><td>Cleaner Transport</td><td>Participation in London E-scooter rental trial - June 2021 – May 2026</td><td>2026 ongoing</td><td>Local Authority Transport Team, TFL</td><td>LBRUT is one of the participating boroughs in the TfL London e-scooter rental trials. Over the first trial period from June 2020 to 24 September 2023, 3,186,487 trips were carried out by e-scooter across the London trial. The second phase of the trial began on 25 September 2023 and the trial has been extended to 31 May 2026.
Not surprisingly hire of e-scooters is more popular summer to winter.
Below is a breakdown for the e-scooter trip data (to the nearest 100) for Richmond for Trial Period 2 – 25 September 2023 – 4 May 2025.
e-scooter trip data (to the nearest 100) for Richmond Sept 2023- May 2025
<table>
<tr><th>Code</th><th>Trial period</th><th>Trips</th><th>Code</th><th>Trial period</th><th>Trips</th></tr>
<tr><td>P2TP1</td><td>25 Sep – 22 Oct 23</td><td>3113</td><td>P2TP12</td><td>29 Jul - 25 Aug 2024</td><td>1642</td></tr>
<tr><td>P2TP2</td><td>(23 Oct – 19 Nov 23)</td><td>2799</td><td>P2TP13</td><td>26 Aug - 22 Sep 2024</td><td>1868</td></tr>
<tr><td>P2TP3</td><td>20 Nov – 17 Dec 23</td><td>2990</td><td>P2TP14</td><td>23 Sept - 20 Oct 2024</td><td>1574</td></tr>
<tr><td>P2TP4</td><td>18 Dec – 14 Jan 24</td><td>2611</td><td>P2TP15</td><td>21 Oct - 17 Nov 2024</td><td>1698</td></tr>
<tr><td>P2TP5</td><td>15 Jan – 11 Feb 24</td><td>2921</td><td>P2TP16</td><td>18 Nov - 15 Dec 2024</td><td>1137</td></tr>
<tr><td>P2TP6</td><td>12 Feb – 10 Mar 24</td><td>2704</td><td>P2TP17</td><td>16 Dec 24 - 12 Jan 25</td><td>718</td></tr>
<tr><td>P2TP7</td><td>11 Mar – 7 Apr 24</td><td>2388</td><td>P2TP18</td><td>13 Jan - 09 Feb 2025</td><td>997</td></tr>
<tr><td>P2TP8</td><td>08 Apr - 5 May 2024</td><td>1948</td><td>P2TP19</td><td>10 Feb - 09 Mar 2025</td><td>1050</td></tr>
<tr><td>P2TP9</td><td>06 May - 2 Jun 2024</td><td>1497</td><td>P2TP20</td><td>10 Mar - 06 Apr 2025</td><td>1274</td></tr>
<tr><td>P2TP10</td><td>03 Jun - 30 Jun 2024</td><td>1614</td><td>P2TP21</td><td>07 Apr - 04 May 2025</td><td>1265</td></tr>
<tr><td>P2TP11</td><td>1 Jul - 28 Jul 2024</td><td>1726</td><td></td><td></td><td></td></tr>
</table>
For more details see https://tfl.gov.uk/corporate/publications-and-reports/electric-scooter-rental-trial</td></tr>
</table>

	New projects for 2022	Updates for 2024			
1.9	Monitoring and other core statutory duties	Further Investment in new monitoring equipment as new technology moves forward.	2021 Ongoing in house	Local Authority Environmental Health, South London Partnership	2021, LBRUT won a joint bid for the 'Internet of Things' with the South London Partnership and by October 2021, had installed 45 x Breathe London air quality sensors to enhance NO2 with real time monitoring and introduce real time PM2.5 monitoring borough wide. This meant for the whole of 2022 the Council had an additional 45 x real time air quality monitors. The project funding came to an end in Dec 2022 but the Council managed to continue funding in house. It had to reduce the number of sensors to 20 but continued with real time air quality monitoring. This meant throughout 2023 and 2024, all town centres and 10 schools had access to indicative, real time monitoring. In October 2024 the Breathe London contract expired, so Richmond arranged a temporary contract with the sensor provider Clarity. All data is available via Clarity OpenMap: https://map.clarity.io. This was a much sought after development by residents and members and is being used to help inform policy.
7.9	Cleaner transport	Cargo bike hire scheme	2022 ongoing	Local Authority Transport team	A Cargo Bike hire scheme was launched in May 2022, with three cargo bikes delivered to host-organisations in East Sheen, Hampton and Teddington. The Council funds the purchase and maintenance of these bikes. In August 2023, the Council delivered an additional 6 cargo bikes to serve Twickenham, Richmond Town Centre, Ham,

					St Margaret's, Whitton and Kew. In September 2024, the Council delivered another bike in Barnes. Richmond has the largest cargo bike hire network of this type in London. During 2024, the bikes have been hired 431 times by 371 active members and have covered 2485km, including 1888km that would have been travelled using vehicles fuelled by diesel or petrol. The scheme is delivered in partnership with Peddle My Wheels.
7.10	Cleaner transport	Dedicated parking bays for e-cargo bikes	2024 ongoing	Local Authority Transport and Parking teams	Progress is being made with the Council's plan to introduce dedicated parking bays for cargo bikes across the borough. In November 2021 the transport committee approved the designation of up to 25 cargo bike parking bays across Richmond. Officers secured funding and identified 10 locations where existing parking bays could be converted to dedicated cargo bike parking bays. Following discussions with ward councillors, officers are now finalising arrangements for local consultations and installation under an experimental traffic order for 12 months. Feedback will be monitored before a decision is made as to whether the bays are made permanent. Four locations were installed in September 2024 are as follows: Lowther Road, Wellesley Road, Stillingfleet Road and Ashburnham Road. These are all close to Primary Schools. An additional 8 parking bays are expected to be delivered in Spring 2025.
6.10	Localised solutions	Public realm improvements focused on enhancing pedestrian spaces	2023 ongoing	Local Authority Transport team	Construction on the A310 Strawberry Vale started in January 2022 and continued throughout 2023, as did the public realm focused project in East Twickenham. Throughout 2023 and 2024 a wider programme of public realm focused projects were also underway at various high

					streets across the borough, including Broad Street Teddington, Ham Parade, Hampton Wick and Castelnau Barnes. The projects are all focused on enhancing spaces for pedestrians, including the introduction of trees, plantings and SUDS.
3.12	Public health and awareness raising	Public Health's Air Pollution Action Plan - focus on targeting vulnerable groups and communities, providing information on health and air pollution and raising awareness in the community	2023 ongoing	Local Authority Public Health, NHS, Environmental Health	Awareness raising of the impact of air pollution on health was undertaken with regards to council and NHS staff via highlighting and supporting members to undertake the Making Every Contact Count (MECC) module. In total 52 people undertook this MECC training, who will now be able to disseminate information to patients and clients. In 2024 Public Health also undertook a behavioural insights project which engaged with a number of identified vulnerable groups (such as mothers with children, people with long-term health conditions) in air pollution hotspot areas. The project reviewed how much they knew of the link between air pollution and health as well as gain insights in terms of how organisations could better target messaging and provide health advice. The project also interviewed local GPs to find out their level of knowledge around air pollution and health. Findings suggested that both vulnerable groups and GPs had a good understanding of the impact of outdoor air pollution on health but little on indoor pollution. As a result of this the Richmond Air Quality Team has delivered a series of webinars for professionals including those from the health sector in 2025.

	New projects for 2023	Updates for 2024			
6.11	Localised solutions	Finalise Richmond Climate Risk Mapping, including vulnerability Score.Publish, and use the Richmond Climate Risk Mapping tool to identify vulnerable residents	2023 ongoing	Local Authority Climate Change	During 2023 Climate Risk Mapping developed to show social vulnerabilities and environmental hazards, for all areas of the borough at a Local Super Output Area (LSOA) level. This includes data on air quality related risks. This map has proved useful throughout 2024 and is available via DataRich https://www.datarich.info/climate-risk-map/
3.13	Public health and awareness raising	Continue role in development and delivery of SWL ICS Green Plan and contribute to the NHS Green Plan	2023 ongoing	Local Authority Climate Change , Public Health	Representatives from Public Health and Climate Change and Sustainability teams are part of the South West London Integrated Care Board Change and Sustainability Group, which is directing joined up health work on sustainability and the NHS' net zero targets. They are also part of the Green Plan working group, the sub-group which is shaping the development and delivery of the actions in the SWL ICB Green Plan. This has included leading sessions on Air Quality and health linkages, as well as sharing best practice examples
3.14	Public health and awareness raising	Implement actions in the Public Health Climate Change Action plan	2023 ongoing	Local Authority Climate Change , Public Health	The new Public Health Climate Change Action Plan was finalised in 2022/23. Several actions from this action plan have already been completed or were in progress during 2023 and 2024, including: • Training: the MECC (Making Every Contact Count) module on climate change and health was finalised in mid-2023 and presented at and shared with the Climate Change Public

					Health London Network, VCS networks and at the SWL ICB NHS Green Plan Delivery Group. • Communication and Engagement: a Public Health Engagement and Communications plan has been developed; climate change workshops have been delivered; climate change briefs for the community voluntary sector have been developed and circulated; the Council website has been updated with climate change and health information; and participated in Clean Air Day, Car Free Day, and the Big Green Week. • Adaptation: formation of heatwave and vulnerable population working group; drafting of the Heatwave Health Needs Impact Assessment report (in consultation); leading on Severe Weather Planning; and continuing to be a core member of the Borough Resilience Forum and the SSA Resilience Planning group and regularly contributes to corporate emergency plans. • Influencing strategies, policies and plans: contributed to the development of the Local Plan, Walking and Cycling Strategy, Prevention Framework, and GLA Super Zone Programme. • Public Health Divisional Management Team coversheet has been updated to include guidance and support to help Public Health officers identify links to their papers (policies, strategies, plans, procurements, commissioning plans and reports) to climate change and air quality.
	New projects for 2024				

6.12	Localised solutions	Use data to adapt to a changing climate and increase the resilience of the borough	2025	Local Authority Climate Change , Public Health, SWLICS, Environmental Health	In 2024 the Climate Change team engaged with various stakeholders inside and outside the Council for the benefit of the Climate Change and Air Quality agenda. In summary it will: Continue to use the Climate Risk Mapping tool to identify adaptation and resilience priorities and finalise Phase 2 of the Climate Risk Mapping tool, including new layers and features Scope how different in-house mapping tools and platforms can be used to ensure a more joined-up approach to work across the Council, including mapping of existing public refuges accessible during extreme weather events. Ensuring a joined-up approach to adaptation and resilience Work with the teams across the Council to identify and bid for funding opportunities for adaptation and resilience work Continue and expand partnership working with external stakeholders to identify potential opportunities for collaborative working, including contributing to the development of the London Surface Water Strategy and working with the pan London Resilient and Green programme Implement actions in the Public Health climate action plan including raising awareness of the health risks of climate change in high climate risk areas and populations and continue progress against the climate change step in the Joint Health and Wellbeing Strategy

					Collaborate across the South West London Integrated Care System in the development and delivery of the local NHS Green Plan, supporting actions on engagement and education about air quality and health, as well as adaptation and resilience for health providers and residents Working in collaboration with West London boroughs, deliver improved communication, engagement and community resilience building for extreme heat events Monitoring and evaluation of adaptation and resilience Develop indicators for monitoring and evaluation of climate adaptation and resilience projects and infrastructure Scope options for undertaking a cost-benefit analysis of climate impacts, adaptation and resilience.

3. Planning Update and Other New Sources of Emissions

3.1 Planning Update

Table N. Planning requirements met by planning applications in the London Borough of Richmond upon Thames in 2024

Condition	Number
Number of planning applications where an air quality impact assessment was reviewed for air quality impacts	22
Number of planning applications required to undertake construction dust monitoring and reporting (Please specify how you get access to dust monitoring data i.e. online tool or CSV file)	5 Requested by email from planning officer
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 as detailed in Air Quality Neutral LPG (london.gov.uk) point 3.1.5.	0
Number of developments required to install Ultra-Low NO_X boilers	22 (all 22 likely to install non combustion)
Number of developments where an AQ Neutral building and/or transport assessments undertaken	21
Number of developments where the AQ Neutral building and/or transport assessments not meeting the benchmark and so required to include additional mitigation	5
Number of planning applications with S106 agreements including other requirements to improve air quality	2
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 planning applications with conditions related to NRMM included. Number of developments registered at www.nrmm.london. Number of audits (based on the pan-London project report and / or inhouse auditing programme) % of sites unregistered prior to audit % of sites 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 planning applications with conditions related to NRMM included. Number of developments registered at www.nrmm.london. Number of audits (based on the pan-London project report and / or inhouse auditing programme)% of sites unregistered prior to audit % of sites compliant with	22 conditions included 14 registered 16 audits

Condition	Number
Stage IIIB of the Directive and/or exemptions to the policy.	87.5% (14) sites compliant

LBRuT received no applications for use of CHP/biomass in 2024, which have been actively discouraged. Consultants and developers are more often proposing non-combustion, ASHP, maximum insulation and renewables to increase BREEAM ratings and only occasionally request ultra low NOx boilers, which are now discouraged. District heat networks are flagged for larger developments but to date have proved inefficient, usually due to distance. Requirements are as per London Plan, which meant none could be refused on grounds of AQ in 2024, although mitigation was required.

3.2 New or significantly changed industrial or other sources

No new sources identified.

4. Additional Activities to Improve Air Quality

4.1 London Borough of Richmond upon Thames Fleet

The London Borough of Richmond upon Thames has a relatively small fleet; it has no Council housing; Waste and Recycling and Parks are contracted out.

By Dec 2024 LBRUT had 73 vehicles, 71 (97.2%) are Euro VI, 1 x hybrid (1.4%) and 1 x EV (1.4%) zero emission.

Issues around the installation of EVCP at the Council depot have hampered fleet upgrades which are hoped to be resolved shortly. Updates will be provided in ASR 2026.

4.2 Planning Enforcement

NRMM is a standard planning condition applied to all major developments. All sites are requested to register on the NRMM website and all NRMM used on-site is compliant with Stage IV of the Directive and/or exemptions to the policy. In 2023 and again in 2024, the Principal Air Quality Officer emailed current NRMM conditions to the Head of Planning and ensured all Planning Officers were reminded of requirement to add NRMM to all planning applications.

All major developments are passed to the Noise and Air Quality Officers in Environmental Health for comment. All major developments are required to submit an AQA. All relevant national, Mayoral and LBRUT local policies are applied by Environmental Health to all responses to Planning in all cases. Sites are considered for construction dust on a case-by-case basis, monitoring required and locations agreed between EH, Planning Officers and the developer pre to commencement of any work on site, where a moderate or high risk to receptors is predicted. Any complaint is investigated, mitigation agreed and additional dust suppressant systems required where necessary. This is carried out largely by EH and where necessary by Planning Enforcement.

The RSP (LB Merton, LBRUT and LB Wandsworth) have 6 designated Officers based in Merton, who assess all major sites for NRMM compliance, visit sites and check the NRMM database for compliance in line with the Mayors Supplementary Planning Guidance for Control of Dust and Emissions during Construction and Demolition.

4.3 Pan-London NRMM Auditing Project

The London Borough of Richmond upon Thames is continuing to support the pan-London NRMM auditing project in 2025-2026.

The standard wording for NRMM conditions is:

"All Non-Road Mobile Machinery (NRMM) of net power of 37kW and up to and including 560kW used during the course of the demolition, site preparation and construction phases shall comply with the emission standards as published on the NRMM Website (Non-Road Mobile Machinery (NRMM) | London City Hall) Unless it complies with the standards set out on the website, no NRMM shall be on site, at any time, whether in use or not, without the prior written consent of the local planning authority. The developer shall keep an up to date list of all NRMM used during the demolition, site preparation and construction phases of the development on the online register.

All NRMM should be regularly serviced and service logs kept on site for inspection. Records should be kept on site which detail proof of emission limits for all equipment. The development shall be constructed in accordance with the approved details. All sites will be inspected for compliance."

The wording is provided by the Air Quality Officer to the Planning Officer and is applied to all major planning applications by them. It is generally included in the Construction Management Plan/Environmental Management Plan which is discharged by EH, usually by the original Air Quality Officer.

This is applied to all major construction sites.

4.4 Air Quality Alerts

The London Borough of Richmond upon Thames continues to support *air*TEXT (https://www.airtext.info/) and the Mayor of London's air quality alert programme run by Imperial College London, which sends alerts to all schools, GP surgeries and care homes in LBRUT. Advice is based on Defra's national Daily Air Quality Index

4.5 Air Quality Positive

The London Borough of Richmond upon Thames has no innovative mitigation measures committed as part of a submitted Air Quality Positive Matrix which aligns with the Air Quality Positive London Plan Guidance.

Appendix A Details of Monitoring Site Quality QA/QC

A.1 Automatic Monitoring Sites

All data undergoes quality assurance and quality control (QA/QC) procedures to

ensure that the data obtained are of a high quality. Continuous automatic monitoring was conducted throughout the entire 12-month period in 2024.

NO_2 Monitoring

Each NO2 chemiluminescent continuous analyser is checked regularly online by Imperial College London and calibrated by the newly appointed contractor, We Care 4 Air (WC4A), (appointed on 1st April 2024) employed by LBRuT for Local Support Officer (LSO) and Service and Maintenance visits during 2024. Regular 4 weekly calibration visits were maintained throughout 2024.There is a need for frequent calibration adjustments as the gradual build-up of dirt within the analyser reduces the response rate. This fall off in response needs appropriate correction, to ensure the recording of the true concentrations.

The calibration process involves checking the monitoring accuracy against a known concentration of span gas. The span gas used is nitric oxide and is certified to an accuracy of 5%. This avoids the less precise permeation tube method.

In 2024 the NO2 and ozone continuous analysers were serviced every six months by WC4A and audited by Ricardo every six months. The National Physical Laboratory (NPL), who the Council has employed to do this for over 20 years, no longer provides this service. This forms part of Environmental Research Groups (ERG) - Imperial College London's, London Air Quality Network (LAQN) QA/QC procedure, to ensure optimum data quality.

Teddington (AURN) monitoring station at NPL is part of the AURN and AEA Technology manages the QA/QC for this station. For more information go to https://uk-air.defra.gov.uk.

PM_{10} Monitoring Adjustment

PM10 particulates are measured using Tapered Element Oscillating Microbalance (TEOM) analysers, with the data presented as the gravimetric equivalent.

No automatic or fortnightly calibrations are carried out on TEOMs. Calibrations are only carried as part of the routine servicing and regular independent audits.

The on-going performance of the monitor is remotely assessed checked online, by the Duty Officer of the Environmental Research Group (ERG) Imperial College London Ricardo. The role of the LSO at the 4 weekly visits is to make more detailed performance checks. The LSO is also on standby at other times, to change the TEOM's monitoring filter as required, depending on the filter loading.

Since 2009, TEOM data have been improved by routine adjustments, using the volatile correction method (VCM). This corrects for the loss of any volatile mass, which has been driven off by the heat applied in the TEOM's inlet column. The VCM adjustments are carried out by Imperial College London, prior to dissemination of the data.

The TEOM equipment is serviced every six months by WC4A and also audited by Ricardo every six months as part of Imperial's LAQN QA/QC procedure, to ensure optimum data quality. Both sites are part of the LAQN and Imperial are responsible for the daily data collection, storage, validation and dissemination via the LAQN website (www.londonair.org.uk). Imperial ratifies the data periodically, viewing data over longer time periods and using the results from 4 weekly checks, equipment services and equipment audits.

In 2024 measured mean PM_{10} concentration for both LBRuT's automatic monitoring sites was 16 µg m^{-3} for Castlenau and 15 µg m^{-3} for Wetlands, achieving data capture rates of 99% and 84% respectively. Since neither site fell below the Defra required 75% data capture threshold "annualisation" of data was not necessary. (This is in accordance with the procedure detailed in LLAQM Technical Guidance (TG19)). Details are in Appendix A Table P.

A.2 Diffusion Tubes

Laboratory supplying diffusion tubes 2024

The laboratory supplying diffusion tubes to LBRUT throughout 2024 (and in the preceding 20 years plus) was Gradko International Ltd. All Richmond NO_2 diffusion tubes are prepared by Gradko using 50% v/v TEA with Acetone as the absorbent.

NO_2 diffusion tube analysis method

NO_2 diffusion tubes are passive monitoring devices. They are made up of a Perspex cylinder, with two stainless steel mesh discs, coated with TEA absorbent held inside a polythene cap, which is sealed onto one end of the tube. Diffusion tubes operate on the principle of molecular diffusion, with molecules of a gas diffusing from a region of high concentration (open end of the tube) to a region of low concentration (absorbent end of the tube) (AEA, 2008). NO_2 diffuses up the tube because of a concentration gradient and is absorbed by the TEA, which is present on the coated discs in the sealed end of the tube.

To prevent premature absorption, an opaque polythene cap is placed over the end of the diffusion tube opposite the TEA-coated discs before and after sampling. The tubes are labelled and stored in plastic bags, refrigerated, both prior to and after exposure.

In the laboratory, the steel mesh is removed and washed with distilled water, which is then analysed. The concentration of nitrogen dioxide is determined by passing ultraviolet (UV) light through the water sample. The amount of light absorbed correlates to the concentration of nitrogen dioxide present in the air during the monitoring period.

Performance criteria QA/QC

Directive 2008/50/EC of the European Parliament and of the Council on ambient air quality and cleaner air for Europe (EC, 2008), now adopted into UK law, sets air quality objectives for NO_2 along with other pollutants. Under the Directive, annual mean NO_2

concentration data derived from diffusion tube measurements must demonstrate an accuracy of ±25 % to enable comparison with the NO_2 air quality objectives of the Directive.

To ensure high-quality NO_2 concentration data, it is essential to meet stringent performance criteria through comprehensive quality assurance (QA) and quality control (QC) procedures. Several factors influence the performance of NO_2 diffusion tubes, including the laboratory conducting the analysis and the method used to prepare the tubes (AEA, 2008). As such, QA and QC procedures are a fundamental part of any monitoring programme, minimizing data uncertainties and ensuring the most accurate estimate of true concentrations.

Our NO_2 diffusion tubes are analysed by Gradko, using the 50% TEA in acetone preparation method. Gradko actively contributes to the development of rigorous QA and QC procedures to maintain the highest level of confidence in their laboratory measurements. They played a key role in the creation of the Harmonisation Practical Guidance for NO_2 diffusion tubes (AEA, 2008) and have adhered to these guidelines since January 2009. Additionally, since April 2014, Gradko has participated in the AIR-PT scheme, which combines two long-established proficiency testing schemes: the LGC Standards STACKS PT scheme and the HSL WASP PT scheme.

This section contains details of Gradko International Ltd.'s Results of laboratory precision.

Performance in Air NO_2 PT Scheme (February 2023 to February 2025)
Summary of Precision Scores for 2023-2025
United Kingdom Accreditation Service (UKAS) schedule of accreditation (December 2024)

Gradko International Ltd is a UKAS-accredited laboratory that actively participates in laboratory performance and proficiency testing schemes. These schemes establish rigorous performance standards for participating laboratories, ensuring that the reported NO_2 concentrations are of the highest quality.

Summary of Laboratory Performance in AIR NO_2 Proficiency Testing Scheme (February 2023 to February 2025)

Gradko participates in the AIR-PT scheme for NO_2 diffusion tube analysis, which involves the quarterly testing of laboratory performance using artificially spiked diffusion tubes. This scheme is designed to help laboratories meet the requirements of the European Standard. In 2024, Gradko demonstrated **satisfactory** performance for the 50% TEA in acetone preparation method.

The laboratory adheres to the procedures outlined in the *Harmonisation Practical Guidance* and is an active participant in the AIR-PT proficiency testing scheme. Prior to AIR-PT, Gradko took part in the Workplace Analysis Scheme for Proficiency (WASP) for NO_2 diffusion tube analysis. DEFRA and the Devolved Administrations recommend that diffusion tubes used for Local Air Quality Management (LAQM) should be sourced from laboratories that have shown consistent, satisfactory performance in the AIR-PT scheme.

Gradko's laboratory performance is further evaluated by the National Physical Laboratory (NPL), which assesses results from the AIR-PT scheme in conjunction with data from the monthly NPL Field Inter-Comparison Exercise, conducted at Marylebone Road in central London. Laboratories are assigned a ‘z’ score, where a score of ±2 or less indicates satisfactory performance. Gradko International Ltd.’s performance in 2024 is covered under AIR-PT rounds AR062 to AR068.

Based on the latest available data, the five-round performance window used to evaluate Gradko's laboratory quality spans AIR-PT rounds AR055 to AR068. Details of the scheme can be found at: https://laqm.defra.gov.uk/wp-content/uploads/2022/07/LAQM-NO2-Performance-data_Up-to-June-2022_V2.1.pdf

During this time, 100% of the results submitted by Gradko were determined to be satisfactory other than the results for Jan-Feb 2025.

Table 1: Laboratory summary performance for AIR NO_2 PT rounds AR055, 56, 58, 59, 62, 63, 65, 66 and 68

The following table lists those UK laboratories undertaking LAQM activities that have participated in recent AIR NO_2 PT rounds and the percentage (%) of results submitted which were subsequently determined to be **satisfactory** based upon a z-score of ≤ ± 2 as defined above.

AIR PT Round	AIR PT AR055	AIR PT AR056	AIR PT AR058	AIR PT AR059	AIR PT AR062	AIR PT AR063	AIR PT AR065	AIR PT AR066	AIR PT AR068
Round conducted in the period	January – February 2023	May – June 2023	July – August 2023	September – October 2023	January – February 2024	April – June 2024	July – August 2024	September – October 2024	January – February 2025
Aberdeen Scientific Services	0 %	100 %	100 %	75 %	100 %	100 %	100 %	100 %	100 %
Cardiff Scientific Services	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]
Edinburgh Scientific Services	100 %	75 %	100 %	50 %	100 %	100 %	100 %	100 %	100 %
SOCOTEC	100 % [1]	100 % [1]	100 % [1]	100 % [1]	100 % [1]	100 % [1]	100 % [1]	100 % [1]	87.5 % [1]
Exova (formerly Clyde Analytical)	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]
Glasgow Scientific Services	100 %	100 %	100 %	100 %	75 %	100 %	100 %	100 %	100 %
Gradko International	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	50 %
Kent Scientific Services	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]
Kirklees MBC	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]
Lambeth Scientific Services	0 %	75 %	50 %	0 %	50 %	50 %	50 %	50 %	100 %
Milton Keynes Council	50 %	75 %	100 %	100 %	100 %	NR [2]	50 %	100 %	100 %
Northampton Borough Council	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]
Somerset Scientific Services	100 %	75 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
South Yorkshire Air Quality Samplers	NR [2]	NR [2]	NR [2]	NR [2]	NR [2]	NR [2]	NR [2]	NR [2]	NR [2]
Staffordshire County Council, Scientific Services	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Tayside Scientific Services (formerly Dundee CC)	NR [2]	100 %	NR [2]	NR [2]	NR [2]	NR [2]	100 %	NR [2]	NR [2]
West Yorkshire Analytical Services	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]

[1] Participant subscribed to two sets of test results (2 x 4 test samples) in each AIR PT round.
[2] NR, No results reported.
[3] Cardiff Scientific Services, Exova (formerly Clyde Analytical), Kent Scientific Services, Kirklees MBC, Northampton Borough Council and West Yorkshire Analytical Services; no longer carry out NO2 diffusion tube monitoring and therefore did not submit results.

Precision Summary Results

The summary of diffusion tube precision results is provided below, outlining the total number of good and bad precision results over the past three years for laboratories currently conducting diffusion tube analysis. Details of the scheme can be found at: https://laqm.defra.gov.uk/air-quality/air-quality-assessment/precision-and-accuracy/

2022 - 2024 Summary of Precision Results for Nitrogen Dioxide Diffusion Tube Collocation Studies UK Laboratories including for Gradko Laboratory 50% TEA in Acetone

Precision Summary Table

Diffusion Tube Preparation Method	2022 Good	2022 Bad	2023 Good	2023 Bad	2024 Good	2024 Bad
Gradko, 50% TEA in Acetone	16	0	16	0	11	0
Gradko, 20% TEA in Water	33	0	25	0	26	0
ESG Didcot / SOCOTEC, 50% TEA in Acetone	29	0	33	2	30	3
ESG Didcot / SOCOTEC, 20% TEA in Water	11	0	8	0	1	0
Staffordshire Scientific Services	13	0	12	0	16	0
Glasgow Scientific Services	3	3	1	0	1	0
Edinburgh Scientific Services	1	0	4	2	1	1
Milton Keynes Council	1	0	1	0	1	0
Tayside Scientific Services	1	0	1	0	1	0
Lambeth Scientific Services	6	4	10	1	2	0
Aberdeen Scientific Services	7	0	7	0	6	0
ESG Glasgow, 50% TEA in Acetone	1	0	1	0	1	0
ESG Glasgow, 20% TEA in Water	1	0	1	0	1	0
Somerset County Council	14	0	12	0	4	0

Numerical results for this data are contained in the National Bias Adjustment Spreadsheet version 04/25

Numerical results for this data are contained in the National Bias Adjustment Spreadsheet version 04/25. In 2024, the tube precision for NO_2 Annual Field Inter-Comparison for Gradko International using the 50% TEA in acetone method was 'good' for the results of 11/12 participating local authorities, no participating local authorities were deemed to be 'bad'.

Analysed By	Method	Year	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m³)	Automatic Monitor Mean Conc. (Cm) (µg/m³)	Bias (B)	Tube Precision	Bias Adjustment Factor (A) (Cm/Dm)
Gradko	50% TEA in Acetone	2024	UB	City Of London Corporation	10	26	21	26.8%	G	**0.79**
Gradko	50% TEA in Acetone	2024	R	City Of London Corporation	12	34	30	12.1%	G	**0.89**
Gradko	50% TEA in Acetone	2024	UB	Falkirk Council	11	13	13	-1.6%	G	**1.02**
Gradko	50% TEA in acetone	2024	SU	Redcar And Cleveland Borough Council	12	12	9	35.4%	G	**0.74**
Gradko	50% TEA in acetone	2024	KS	Marylebone Road Intercomparison	11	43	36	20.8%	G	**0.83**
Gradko	50% TEA in acetone	2024	R	Sandwell Mbc	12	30	25	24.2%	G	**0.81**
Gradko	50% TEA in acetone	2024	UB	Sandwell Mbc	12	19	17	8.0%	G	**0.93**
Gradko	50% TEA in acetone	2024	R	Sandwell Mbc	12	20	20	-2.6%	S	**1.03**
Gradko	50% TEA in Acetone	2024	R	London Borough Of Merton	12	27	22	25.7%	G	**0.80**
Gradko	50% TEA in acetone	2024	UB	London Borough Of Wandsworth	10	19	14	31.7%	G	**0.76**
Gradko	50% TEA in acetone	2024	R	London Borough Of Richmond Upon Thames	12	18	19	-9.1%	G	**1.10**
Gradko	50% TEA in acetone	2024	B	London Borough Of Richmond Upon Thames	12	13	13	5.0%	G	**0.95**
Gradko	50% TEA in acetone	2024		**Overall Factor[3] (12 studies)**				**Use**		

Schedule of Accreditation issued by United Kingdom Accreditation Service (UKAS)

Gradko is UKAS-accredited for the analysis of NO_2 diffusion tubes, utilising ultra-violet spectrophotometry for the analysis of exposed tubes. The relevant test is outlined in the UKAS Schedule of Accreditation, issued on 23 December 2024 which is provided on the next page.h

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

2187

Accredited to ISO/IEC 17025:2017

Gradko International Ltd (Trading as Gradko Environmental)

Issue No: 027 **Issue date:** 23 December 2024

St Martins House
77 Wales Street
Winchester
Hampshire
SO23 0RH

Contact: Mr A Poole
Tel: +44 (0)1962 860331
Fax: +44 (0)1962 841339
E-Mail: diffusion@gradko.co.uk
Website: www.gradko.co.uk

Testing performed at the above address only

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
ATMOSPHERIC POLLUTANTS Collected on diffusion (sorbent) tubes and monitors	<u>Chemical Tests</u>	Documented In-House Methods
	Ammonia as ammonium (NH_4^+)	GLM 8 by Ion Chromatography
	Benzene Toluene Ethyl benzene Xylene	GLM 4 by Thermal Desorption/ FID Gas Chromatography
	Hydrogen chloride as chloride (Cl^-) Nitrogen dioxide as nitrite (NO_2^-) Sulphur dioxide as sulphate (SO_4^{2-}) Hydrogen fluoride as fluoride (F^-)	GLM 3 by Ion Chromatography
	Hydrogen sulphide	GLM 5 by Colorimetric determination (UV Spectrophotometry)
	Ozone as nitrate (NO_3^-)	GLM 2 by Ion Chromatography
	Nitrogen Dioxide as nitrite (NO_2^-)	GLM 7 by Colorimetric determination (UV Spectrophotometry)
	Sulphur dioxide as sulphate (SO_4^{2-})	GLM 1 by Ion Chromatography
	Formaldehyde as formaldehyde-DNPH	GLM 18 by HPLC
	Volatile Organic Compounds including: Benzene Toluene Ethylbenzene p-Xylene o-Xylene	GLM 13 by Thermal Desorption GC-Mass Spectrometry

2187

Accredited to ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Gradko International Ltd (Trading as Gradko Environmental)
Issue No: 027 **Issue date:** 23 December 2024

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
ATMOSPHERIC POLLUTANTS Collected on diffusion (sorbent) tubes and monitors (cont'd)	<u>Chemical Tests</u> (cont'd)	
	Qualitative Analysis and Estimation of Volatile Organic Compounds on diffusion (sorbent) tubes and monitors	GLM 13 by Thermal Desorption GC-Mass Spectrometry with estimations in accordance with ISO standard 16000-6
	Naphthalene Tetrachloroethylene Trichloroethylene Styrene 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene Chlorobenzene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene	GLM 13-1 by Thermal Desorption GC-Mass Spectrometry
	1,3-Butadiene	GLM 13-6 by Thermal Desorption GC-Mass Spectrometry
	Carbon Disulphide	GLM 13-7 by Thermal Desorption GC-Mass Spectrometry
	Flexible scope for quantitative analysis of Volatile Organic Compounds on diffusion (sorbent) tubes and monitors in accordance with methods developed and validated by in-house procedure LWI 47	LWI 47 by Thermal Desorption GC-Mass Spectrometry
END		

Factor from Local Co-location Studies

Excluding 2024, LBRUT, where possible, favour using a local roadside correction factor for kerbside/roadside sites and a local background correction factor for background sites, so for ease of understanding, we are not providing bias adjustment factors for previous years in the body of the report. Please see the local bias adjustment factors for the Borough in Table O for 2017 to 2024.

Diffusion Tube Bias Adjustment Factors from Local Co-location Studies

In 2024, the Borough undertook co-location studies at two continuous NO_2 monitoring sites, with triplicate NO_2 diffusion tubes at the following the locations:

Richmond 1 Castelnau: a roadside site, in Castlenau Library Barnes. In 2024, the annual means for the Castelnau diffusion tubes **(sites 23, 23/2 and 23/3)** was 15.5 µg $m^{-3,}$ for the continuous site (RI1) it was 19.2 µg m^{-3}. **The bias adjustment factor is 1.1**

Richmond 2 Barnes Wetlands: a suburban background site at the Wetland Centre in Barnes SW13.

In 2024, the annual means for the Wetlands diffusion tubes **(sites 37, 37/2 and 37/3)** was 11.7 µg m-^{3}; for the continuous site (RI2) it was 12.3 µg m^{-3}. **The bias adjustment factor is 0.95**

Data capture for 2024 was excellent at Castlenau, achieving 100% and good at Wetlands achieving 86%..

All LBRUT data was completed and returned in time for the co-location questionnaire and is included in the database bias adjustment factors v 03/24.

In 2024 we witnessed a larger discrepancy in local to national bias adjustment factor for Gradko 50% TEA than had been witnessed in earlier years. This prompted a significant analysis of all data and a review of the literature.

This resulted in the selection of the national bias adjustment factor of 0.88 being selected to adjust all the data. Please see below “Discussion of Choice of Factor to Use” and Appendix E for detailed analysis.

Discussion of Choice of Factor to Use

In all previous years, where data capture permitted, we have employed a local bias correction factor and /or the most conservative bias correction factor between local and national bias adjustment factor for Gradko using the 50% TEA in acetone methodology. Choice of bias adjustment factor is always given very careful consideration but 2024 proved extremely challenging for LBRUT due to the large discrepancy between local and national bias adjustment factors in 2024. This presented us with a huge dilemma, so much time and resources were spent finding a justifiable solution.

It should be noted that we wish to neither underestimate or over report levels of NO2 in the borough.

The National bias adjustment factor for Gradko using 50% TEA in acetone for March 2024 (v03/24) was 0.88. The Castlenau roadside site was 1.1 and the Wetlands background site was 0.95. Data capture at Caslenau was excellent at 100% and at Wetlands was good at 86%. Throughout 2024, data for the analysers had been regularly checked by Imperial College London and a new contractor had been employed to provide routine calibrations and service and maintenance. Both sites had been audited in a timely and thorough way by Ricardo. Nothing throughout the year threw up any concerns.

Luckily Richmond is part of the RSP – Regulatory Services Partnership - covering LBRuT, LB Merton and LB Wandsworth. This gave us 5 highly experienced and qualified officers (with a PhD in atmospheric chemistry and more than 120 years of air quality experience between them) to work through the data and consider all options. We also consulted the LAQM helpdesk, the GLA and NPL. Much work ensued, probably digging deeper into laboratory testing than has been done for many years. In summary a review of the literature suggested the primary purpose of diffusion tube bias adjustment is correction for laboratory technique variations. For the type of diffusion tube doping used by the RSP, seasonal variability or trends in the bias stats would not be expected but was evident at two of the three RSP sites. Further work should be conducted to investigate the source of these sustained biases, and consideration given as to whether diffusion tubes statistics for 2023 and 2024 should be corrected based on national correction factors instead of local. The wider question of local corrections based on administrative boundaries also deserves closer study.

For the purposes of this report we considered applying the more conservative local bias correction factor of 1.1 for local roadside sites, applying the more conservative local bias correction factor of 0.95 for local background sites, applying the national Gradko bias correction factor of 0.88 for either/both, or as we have done in the past, averaging our roadside and back ground sites. We even considered averaging the London roadside sites, that had used Gradko 50% TEA in acetone and had contributed to the national bias correction survey for the roadside sites. After much serious deliberation we decide to follow the advice of both the LAQM heldesk, the GLA and our own opinions and apply the national Gradko bias correction factor. It is well understood that applying the national Gradko bias correction factor of 0.88 will result in less conservative results. However, we could not ignore the sustained biases in the local data and this was considered the more robust option. A summary report is given at appendix E. We will continue our investigations and may carry out comparative testing using other laboratories or other tube preparation methods.

Table O. Bias Adjustment Factor

Year	Local or National	If Local, Version of National Spreadsheet	Adjustment Factor Roadside	Adjustment Factor Background
2024	National	03/24	0.88	0.88
2023	Local	03/24	0.86	0.86
2022	National	03/23	0.82	0.82
2021	Local	03/22	0.87	0.83
2020	Local	03/21	0.91	0.83
2019	Local	03/20	0.9	0.99
2018	National	03/19	0.92	0.93
2017	National	03/18	0.97	1

A.3 Adjustments to the Ratified Monitoring Data

Short-term to Long-term Data Adjustment

For monitoring sites where data capture is less than 75% and greater than 25% of a full calendar year (between 3 and 9 months), the mean of the 'raw' concentrations should be "annualised" i.e. adjusted using the methodology outlined in LLAQM Technical Guidance (TG19) before being compared to annual mean objectives. In 2024 data capture at all automatic and non-automatic (diffusion tube) NO2 sites was very good and above 75% so this was not necessary.

Table P. Non-Automatic Monitoring Data Adjustment ep

Measured mean NO2 concentration for all non-automatic monitoring sites for 2024 was very good based on all sites achieving data capture rates of more than 85%. Since this was above the 75% data capture threshold required by Defra "annualisation" of data was not necessary. (This is in accordance with the procedure detailed in LLAQM Technical Guidance (TG19)).

Table P has therefore been deleted.

Table Q. Automatic NO_2 Monitoring Data Adjustment

Measured mean NO2 concentration for both Castlenau and Wetlands automatic monitoring sites for 2024 was 19 µg m^{-3} and 12 µg m^{-3} respectively based on data capture rates of 100% and 86%. Since this was above the 75% data capture threshold required by Defra "annualisation" of data was not necessary. (This is in accordance with the procedure detailed in LLAQM Technical Guidance (TG19)).

Table Q has therefore been deleted.

Table R. Automatic PM_{10} Monitoring Data Adjustment

Measured mean PM10 concentration for both Castlenau and Wetlands automatic monitoring sites for 2024 was 16 µg m^{-3} and 15 µg m^{-3} respectively based on data capture rates of 99% and 84%. Since this was above the 75% data capture threshold required by Defra "annualisation" of data was not necessary. (This is in accordance with the procedure detailed in LLAQM Technical Guidance (TG19)).

Table R has therefore been deleted.

Table S. Automatic PM2.5 Monitoring Data Adjustment

Measured mean PM2.5 concentration results were not available at any site for 2024.

Annualisation was therefore not possible and

Table S has therefore been deleted.

Distance Adjustment

Where an exceedance is measured at a monitoring site which is not representative of public exposure, the procedure specified in LLAQM.TG(19) to estimate the concentration at the nearest receptor has been deployed.

The methodology consists of comparing the monitored annual mean NO_2 concentrations at a given point against known relationships between NO_2 concentrations and the distance from a road source. The monitored annual mean value has been bias adjusted using the background concentration value of 12.3 µg m^{-3} for Wetlands which achieved a data capture rate of 86% for 2024 above the 85% required by Defra as per LLAQM (TG19) guidance.

Distance correction was completed for 3 locations where the annual mean was above 36 µg m^{-3}. Following distance correction 1 location exceeded 36 µg m^{-3} at the receptor and 2 locations were below 36 µg m^{-3} at the receptor which is within 10% of the AQS (Air Quality Standard).

Results are reported in **Table T** below**.**

Table T. 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})
36	2.1	4.3	**45.3**	12.3	**44.9**
42	0.7	3.6	36.6	12.3	32.0
Rut 02	0.7	2.9	36.0	12.3	30.9

Appendix B Full Monthly Diffusion Tube Results for 2024

Table U. NO_2 2024 Diffusion Tube Results (µg m^{-3})

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	Annual Mean: Distance Corrected to Nearest Exposure	Comment
1	515824	168815	19.6	18.5	19.6	13.0	16.1	16.6	15.7	16.9	18.9	21.5	23.5	20.1	18.3	16.1		
2	513217	169746	25.7	20.3	18.4	13.5	17.2	16.8	15.7	14.9	18.2	23.2	25.1	16.8	18.8	16.5		
4	514607	171258	30.9	21.0	22.4	16.7	23.0	22.2	21.6	17.2	24.0	30.8	35.4	22.5	24.0	21.1		
7	515695	170983	31.8	27.3	26.2	22.1	32.2	29.6	25.0	29.3	37.9	34.8	37.2	26.3	30.0	26.4		
9	514846	172348	27.2	19.3	21.1	14.7	17.8	17.4	15.7	15.9	20.7	23.1	29.6	18.3	20.1	17.7		
10	513390	172233	33.5	33.5	25.2	23.0	25.4	27.2	20.8	26.3	26.0	30.2	29.1	30.6	27.5	24.2		
11	514136	173389	31.1	23.9	21.8	17.7	20.6	16.2	15.4	18.3	22.9	25.5	32.6	23.6	22.5	19.8		
12	512612	173439	29.8	25.1	23.8	20.2	22.5	20.0	19.3	20.3	24.8	27.3	28.2	20.6	23.5	20.7		
13	515228	174082	23.7	21.7	23.6	16.4	16.9	16.5	15.9	19.0	22.6	26.9	29.1	21.3	21.1	18.6		
15	517196	173933	23.0	22.7	23.5	13.7	20.6	21.3	18.9	17.9	24.5	24.3	27.1	22.4	21.7	19.1		
17	517822	174755	34.6	28.9	26.6	24.4	27.9	30.4	25.8	19.0	33.0	32.1	31.1	25.2	28.2	24.9		
18	518822	175590	34.5	36.3	26.6	30.1	33.7	32.9	28.7	30.7		30.3	35.6	25.8	31.4	27.6		
19	518643	176156	24.5	27.5	28.9	20.6	20.6	18.4	18.5	19.1	18.6	24.7	30.8	19.5	22.6	19.9		
20	519205	177221	35.0	29.2	30.2	23.3	30.5	25.8	25.9	23.3	25.5	29.8	37.8	24.9	28.4	25.0		
22	522853	177908	26.4	21.4	19.1	11.5	13.7	11.5	11.8	11.8	16.4	20.0	23.3	20.4	17.3	15.2		
23	522502	177166	24.5	18.2	19.9	14.3	16.8	13.2	14.0	12.6	16.3	20.1	24.7	17.0	17.6	15.5		Triplicate mean
26	519168	175055	35.4	26.7	32.0	24.5	29.0	28.1	25.3	30.4	31.1	31.1	38.5	28.2	30.0	26.4		
28	519445	173991	15.9	10.3			10.1	7.7	7.2	7.4	11.1	12.4	16.0	11.6	11.0	9.7		
30	518022	173165	26.3	19.5	19.9	12.3	19.1	15.9	15.3	14.8	18.5	22.6	25.6	17.7	19.0	16.7		
31	515434	174045	33.2	30.7	30.4	22.3	27.1	28.8	26.8	30.4	30.9	40.0	39.6	33.8	31.2	27.4		
32	516226	173195	30.5	33.2	32.0	23.7	29.8	29.4	27.4	30.1	28.6	36.0	37.9	24.5	30.3	26.6		
33	515934	173126	36.0	23.0	27.5	25.4	27.5	28.2	23.0	23.4	31.4	28.3	36.2	25.6	28.0	24.6		
35	517524	169583	28.5	23.2	22.9	18.3	18.9	19.8	19.3	18.2	19.7	23.8	29.0	24.5	22.2	19.5		
36	520540	175399	46.0	50.2	54.3	43.4	53.3	51.2	52.0	52.8	53.5	55.2	54.7		**51.5**	**45.3**	**44.9**	
37	522993	176731	19.6	13.5	13.8	9.2	11.4	9.2	9.7	10.6	13.4	15.7	20.2	13.6	13.3	11.7		Triplicate mean
39	517516	174331	40.2	34.0	26.8	30.0	32.4	33.4	31.6	31.7	40.5	34.0	37.4	32.7	33.7	29.7		
40	514068	172435	29.2	25.1	22.9	17.8	22.4	21.3	17.7	16.4	21.5	21.2	29.5	24.5	22.5	19.8		
42	518080	175259	41.1	42.5	45.0	38.1	38.9	41.9	39.7	40.2	43.9	43.4	47.3	37.9	41.6	36.6	32.0	
43	517759	174757	42.9	38.5	39.1	34.0	40.2	39.1	38.3	37.2	39.8	40.9	42.4	31.8	38.7	34.0		
44	518489	175056	35.9	33.5	28.2	21.8	28.4	28.4	25.2	28.8	32.0	32.0	40.9	26.2	30.1	26.5		
45	516383	171154	25.2	21.3	17.4	14.0	18.0	15.8	16.4	17.9	20.0	22.6	23.9	20.2	19.4	17.1		

50	519922	175324	42.5	34.3	40.9	34.7	38.8	39.4	37.4	35.9	45.5	38.6	42.0	33.0	38.6	33.9		
51	520492	175695	25.5	21.7	20.7	16.0	19.2	17.7	16.7	16.1	21.4	24.9	31.3	18.1	20.8	18.3		
52	519773	175795	40.4	41.5		28.7	32.7	36.3	35.0	33.6	40.7	36.2	40.2	36.8	36.6	32.2		
55	519793	176142	33.1	23.3	25.9	18.7	22.0	20.5	21.2	20.7	23.3	26.2	32.4	21.5	24.1	21.2		
56	516788	174519	22.8	21.6	18.8		19.8	21.2	16.9	14.6	23.4	23.4	30.9	20.8	21.3	18.7		
57	513915	172899	32.0	21.7	22.2	15.6	21.9	20.8	17.7	17.2	23.3	24.2	32.7		22.7	19.9		
58	516039	173766	29.7	21.2	27.5	16.9	21.8	19.7	18.1	19.3	20.6	23.1	31.8	19.7	22.4	19.7		
62	521651	176430	30.8	22.1	24.7	18.0	24.1	23.4	20.9	18.9	26.8	28.3	32.2	19.8	24.2	21.3		
63	514188	173801	32.9	23.0	24.6	21.5	23.1	21.6	19.1	21.1	23.1	26.6	31.5	23.6	24.3	21.4		
64	514484	171251	34.3	24.4	21.5	25.0	26.8	26.7	22.5	22.2	27.5	28.9	31.2	24.0	26.2	23.1		
65	516339	173366	35.8	37.2	38.4	30.1	28.5	32.8	32.3	33.8	34.1	37.8	43.2	31.8	34.6	30.5		
66	519060	177428	25.8	30.4	26.8	20.8	26.0	27.1	25.5	23.3	25.5	29.0	35.9	25.3	26.8	23.6		
67	518042	174095	25.4	19.8	22.1	13.4	18.8	16.1	14.8	15.1	17.4	21.0	27.2	23.3	19.5	17.2		
68	522415	176537	31.1	27.1	25.8	21.9	24.2	26.2	23.0	22.3	24.6	27.0	30.5	20.1	25.3	22.3		
69	513494	171729	24.6	20.4	17.9	18.0	15.9	15.4	15.0	14.8	21.9	22.8	28.1	19.4	19.5	17.2		
70	520465	175965	34.6	33.0	33.2	24.3	29.4	29.6	23.6	24.4	31.7	34.0	38.7	26.1	30.2	26.6		
71	516574	174456	36.8	35.5	35.3	29.0		32.3	30.6	33.9	28.6	31.3	34.4	25.6	32.1	28.3		
72	516839	174238	29.6	24.1	23.7	16.0	21.5	19.8	21.8	17.4	22.9	28.9	29.7	25.2	23.4	20.6		
73	513722	172873	31.4	30.6	28.1	22.2	25.6	22.3	23.4	22.4	26.2	26.8	36.2	24.6	26.6	23.4		
74	519856	175856	37.9	32.8	34.2	26.9	32.4	30.8	28.7	27.1	32.1	38.0	38.6	26.1	32.1	28.3		
75	515459	171029	32.0	26.0	26.3	18.5	24.8	25.0	24.7	23.5	26.0	30.6	31.4	25.3	26.2	23.0		
76	516588	171357	31.0	22.5	23.7	15.2	22.6	21.5	20.8	23.8	31.1	29.9	32.6	19.1	24.5	21.6		
77	514705	172092	31.9	30.2	30.8	20.0	25.4	23.4	23.5	25.7	26.0	28.7	30.8	24.1	26.7	23.5		
79	514810	172041	30.2	24.6	24.4	22.3	23.6	23.2	21.0	19.9	23.0	25.1	31.4	22.8	24.3	21.4		
80	520538	175926	30.7	23.2	24.6	16.5	20.7	20.9	19.6	18.6	22.5	28.6	29.1	22.5	23.1	20.3		
81	519912	175939	36.0	36.6	35.7	25.6	35.0	30.7	31.6	30.6	35.3	31.5	40.1	26.9	33.0	29.0		
82	516060	173708	25.6	22.1	22.1	11.2	17.7	16.4	17.0	18.4	21.4	26.3	26.3	20.0	20.4	17.9		
83	513811	169510	28.7	26.3	25.5	20.1	26.2	27.0	22.9	23.9	28.0	30.6	34.2	22.0	26.3	23.1		
84	513872	169518	21.9	16.1	16.0	11.9	14.2	13.1	12.8	13.0	15.5	19.4	22.6	15.2	16.0	14.0		
85	517911	174737	46.0	44.0	33.2	39.3	38.6	39.0	39.6	44.8	43.2	41.7	40.7	38.0	40.7	35.8		
87	518280	175367	33.9	39.2	40.5	28.8	39.9	40.4	41.0	31.3	42.3	43.0	49.3	30.4	38.3	33.7		
Rut 01	516415	173419	28.0	25.8	26.4	19.0	22.5	22.2	22.5	21.5	23.7	28.9	31.4	19.9	24.3	21.4		
Rut 02	517917	174928	45.6	44.0	41.3	39.0	41.6	37.9	40.5	38.4	46.0	41.7	43.3	31.7	**40.9**	36.0	30.9	
105	521315	175461	38.1	34.3	37.8	29.6	34.8	38.4	36.2	36.6	32.8	35.5	38.9	26.6	35.0	30.8		
211	514476	171310	34.7	26.1	23.6	22.8	28.8	28.5	25.5	24.6	31.0	31.5	33.9	27.0	28.2	24.8		
RP11	517456	169342	38.4	29.0	35.7	21.3	31.0	28.5	27.4	29.5	33.0	33.6	33.5	23.2	30.3	26.7		
RP12	515371	168705	31.4	31.9	36.0	28.2	33.4	29.0	29.4	33.1	30.5	39.9	32.4		32.3	28.4		

For triplicate sites see below.

Triplicate NO2 diffusion tube results for sites 23 and 37 in µg m^{-3}

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	Annual Mean: Distance Corrected to Nearest Exposure	Comment
23	522502	177166	22.1	19.0	20.3	15.0	16.8	13.4	13.7	12.3	17.6	19.9	25.1	17.0	17.7	15.6		
23/2	522502	177166	25.5	18.5	19.9	14.3	16.9	12.9	14.7	12.6	16.4	20.1	26.5	16.6	17.9	15.8		
23/3	522502	177166	25.9	17.2	19.4	13.6	16.6	13.3	13.5	12.9	15.0	20.4	22.7	17.4	17.3	15.2		
23 Mean	522502	177166	24.5	18.2	19.9	14.3	16.8	13.2	14.0	12.6	16.3	20.1	24.7	17.0	17.6	15.5		Triplicate mean
37	522993	176731	19.4	13.6	13.0	9.3	12.1	9.1	9.3	11.2	13.8	16.8	18.8	13.5	13.3	11.7		
37/2	522993	176731	20.1	12.9	15.6	9.1	11.8	9.5	10.2	10.7	12.7	15.1	21.7	13.0	13.5	11.9		
37/3	522993	176731	19.4	14.0	12.9	9.0	10.5	9.1	9.7	10.0	13.5	15.3	20.0	14.4	13.2	11.6		
37 Mean	522993	176731	19.6	13.5	13.8	9.2	11.4	9.2	9.7	10.6	13.4	15.7	20.2	13.6	13.3	11.7		Triplicate mean

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

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

☐ **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 Richmond upon Thames confirm that all 2024 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** and highlighted in orange.

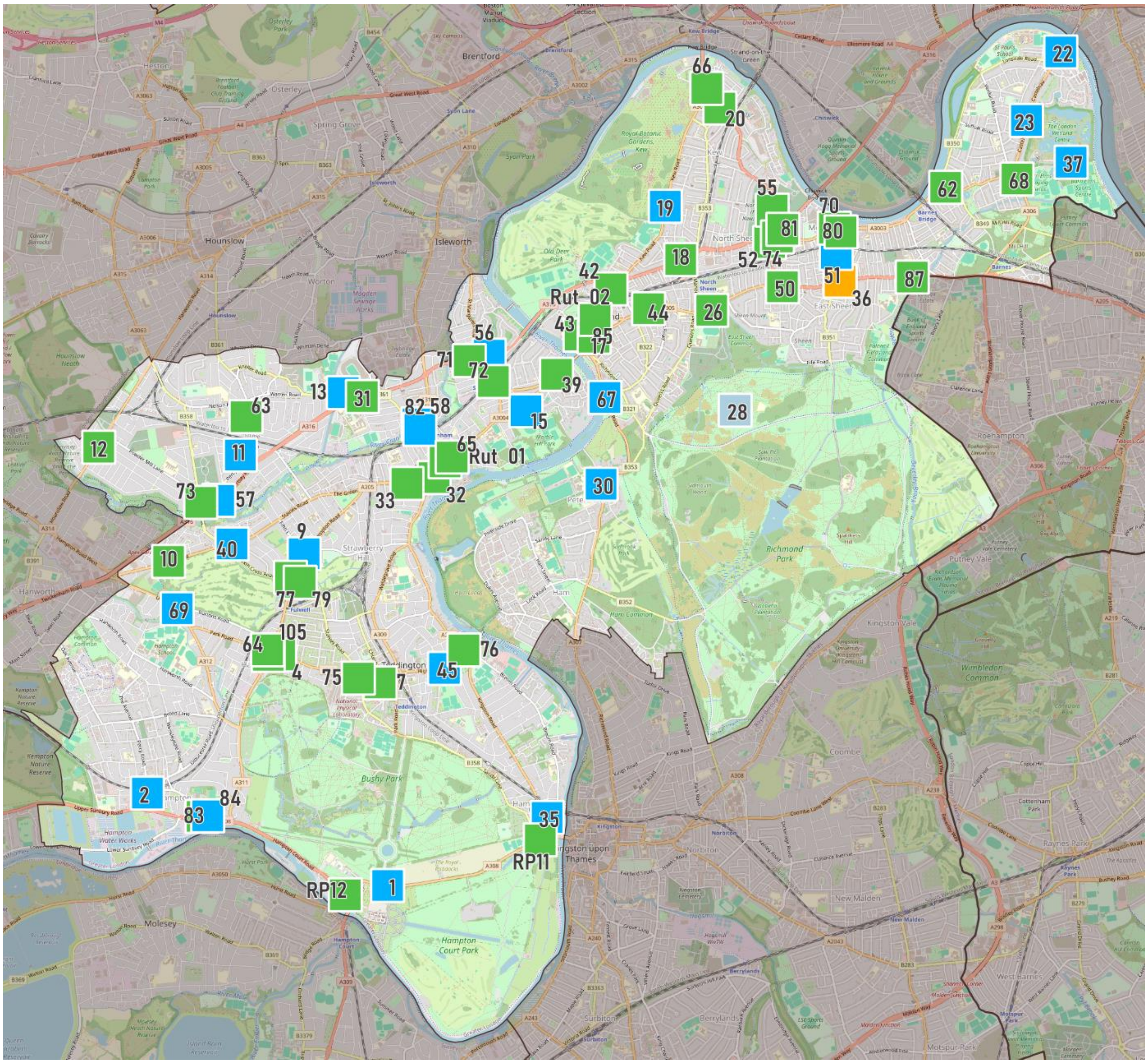
NO_2 annual means exceeding 60µg m^{-3}, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**.

Sites that comply with the NO_2 annual mean objective of 40µg m^{-3} are shown in **green.**

See Appendix C for details on bias adjustment and annualisation.

Appendix C Map(s) of Monitoring Locations and AQMAs

Figure C. Map of Non-Automatic Monitoring Sites

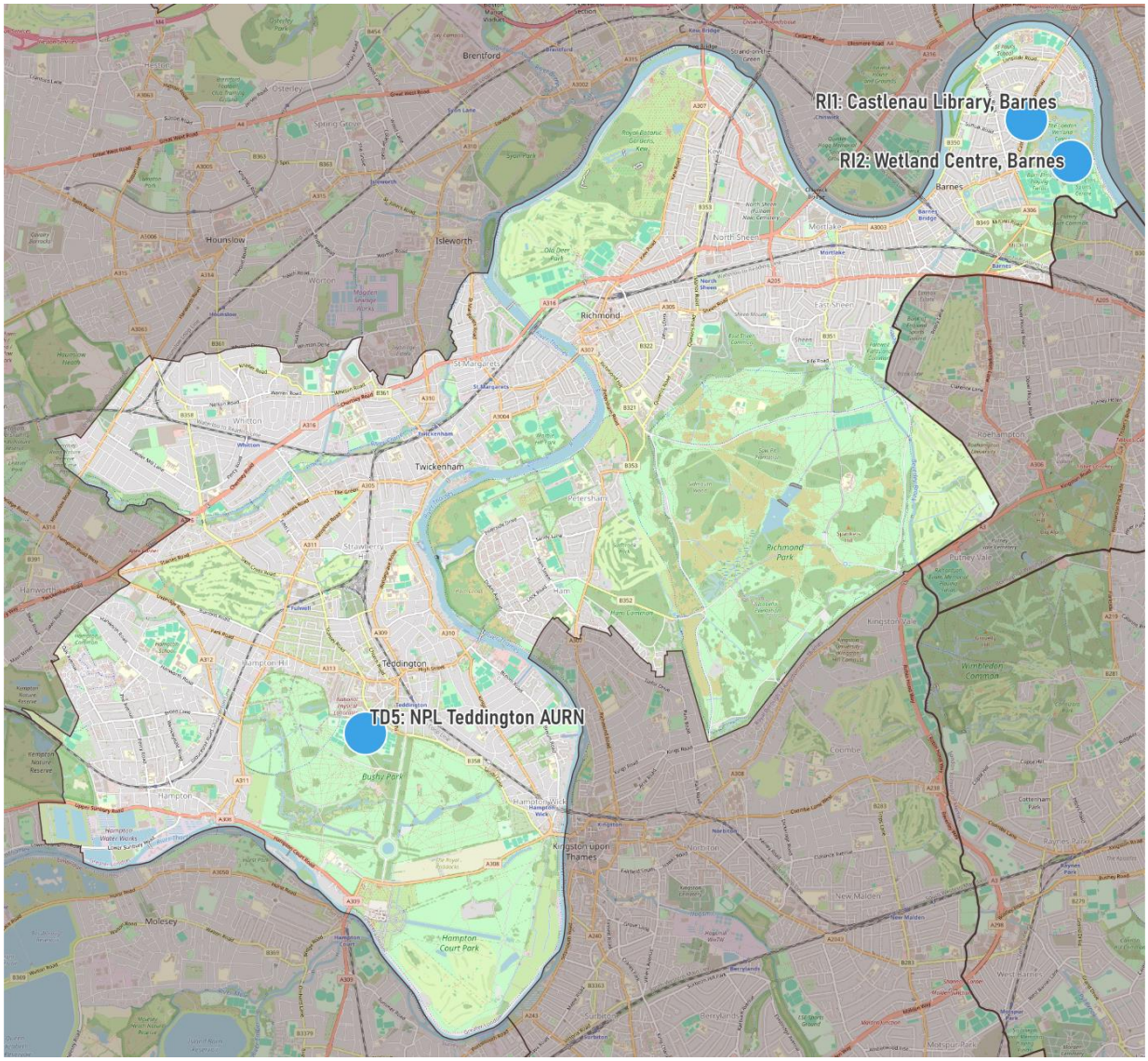


Annual average NO_2 concentration for 2024 (µg m^{-3})

- 0-9 WHO objective compliant (10 µg m^{-3})
- 10-19 Richmond target compliant (20 µg m^{-3})
- 20-39 National air quality objective compliant (40 µg m^{-3})
- 40+ Non-compliant

The whole borough is an AQMA.

Figure D. Map of Automatic Monitoring Sites



Appendix D Air Quality Monitoring Programme for state schools in LBRuT 2022 – 2024

Richmond Air Quality team committed to monitoring air quality at 12 monitoring sites per annum in Primary Schools in the Air Quality Action Plan 2020 - 2025.

Following various enquiries and requests from residents, parents and Councillors in 2021, the team decided to increase this target – both the duration and the number of schools. It will now provide 12 monitors (one monitor a month for 12 months) for each state primary school in the borough and include state nursery and senior schools.

From the beginning of January 2022, LBRuT commenced a 3-year programme to monitor 24/7 for a full year, as close as possible to the main school gate or worst-case scenario for each school. This will give robust data on air quality for all state schools within the borough.

In 2024, the Council monitored at 8 x Primary Schools and 4 x Senior Schools. This is in addition to the 7 x schools monitored as part of the permanent monitoring schedule or part of additional proposed road schemes. All results for the schools monitored in 2024 are below.

NO2 falls off quickly with distance from source, largely road traffic in this borough, so levels within the school playground and within buildings set back from the road, sometimes with a barrier, will be lower, than those recorded outside on the pavement. Reductions in levels will vary, the difference can be slight or significant, depending on distance from major road and/or height and density of barrier. The results below indicate that levels within all 19 schools monitored in 2024 are within UK limit values for NO2.

However, parents should be mindful of the route they walk to school as many pupils are exposed to higher levels of air pollution during the walk to/from school, many at peak hours, than those experienced at school during the student day. Levels inside vehicles may be higher still.

Please note NO2 (nitrogen dioxide) has been monitored 24/7 by passive diffusion tube, an accepted and accredited means of monitoring NO2 and used borough wide, comparable to results within this report. A similar device does not exist for PM (particulate matter). To get an idea of levels, officers used a hand held MET One Aerocet 831 for PM10 and PM2.5 measurements. These measurements are spot check readings on the day.

AQ monitoring for LBRUTNursery/Primary and Senior Schools		NO_2 (ug/m3) 2024												Gradko 0.88	
Site ID	School	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual mean	Bias adjusted
Sch 36	St Mary's CE Prim Sch (middle) Strafford Road, TW1 3AD	19.10	16.51	14.43	11.46	11.59	10.60	9.71	8.01	15.12	16.68	23.87	15.87	**14.4**	**12.7**
Sch 37	Waldegrave School, Fifth Cross Rd, TW2 5LH	20.99	14.27	15.65	10.99	11.35	9.78	10.02	9.76	missing	16.42	22.88	14.23	**14.2**	**12.5**
Sch 38	Hampton High Schl, Hanworth Rd, Hamptn TW12 3HB	25.11	17.17	missing	12.88	13.84	13.12	11.70	12.03	17.24	20.99	23.30	14.04	**16.5**	**14.5**
Sch 39	Buckingham Prim Schl, Buckingham Rd, Hampton TW12	24.12	15.37	14.27	10.87	12.03	11.25	10.14	9.87	13.82	18.18	20.56	14.06	**14.5**	**12.8**
Sch 40	Hampton Inf Schl and Nursery, Ripley Rd, TW12	18.67	12.26	13.64	8.46	9.10	8.06	7.29	7.91	11.83	13.66	21.11	14.37	**12.2**	**10.7**
Sch 41	Hampton Jnr Schl, Percy Rd, Hampton TW12 2LA	24.41	16.04	17.72	12.37	12.49	10.50	10.02	9.56	15.94	20.55	25.53	15.36	**15.9**	**14.0**
Sch 42	St Mary's Hampton CofE Primary, Oldfield Rd, TW12 2HP	16.53	11.83	13.47	8.37	9.23	9.26	7.01	8.14	11.07	12.21	16.18	10.43	**11.1**	**9.8**
Sch 43	Twickenham Schl, Percy Rd, Twickenham TW2 6JW	25.54	21.03	22.12	16.66	17.97	17.17	13.77	13.67	20.45	19.86	31.19	18.97	**19.9**	**17.5**
Sch 44	Richmond-upon-Thames Schl, Egerton Road,TW2 7SJ	23.82	16.55	15.92	11.75	12.90	11.75	11.09	14.93	missing	18.60	26.81	17.83	**16.5**	**14.6**
Sch 45	Lowther Prim Schl, Stillingfleet Rd, Barnes SW13 9AE	24.44	17.44	17.60	9.72	11.40	13.34	11.00	9.79	14.18	17.21	24.72	14.10	**15.4**	**13.6**
Sch 46	Grey Court Schl, Ham St, Richmond TW10 7HN	22.16	15.42	14.59	6.14	13.79	11.38	9.54	9.65	13.67	13.68	missing	16.23	**13.3**	**11.7**
Sch 12	Nelson Primary Sch, Nelson Rd, TW2	26.63	19.39	20.37	13.28	15.38	13.60	13.42	14.93	19.74	22.44	23.33	17.46	**18.3**	**16.1**
105	East Sheen Prim Schl, URRW, SW14	38.11	34.27	37.83	29.61	34.78	38.40	36.21	36.63	32.85	35.54	38.88	26.59	**35.0**	**30.8**
71	St Stephens Prim Schl, Winchester Rd, TW1	36.80	35.48	35.28	29.04	missing	32.33	30.65	33.91	28.64	31.30	34.44	25.56	**32.1**	**28.3**
20	Queens RC Prim Schl, Cumberland Rd, TW9 3HJ	34.97	29.22	30.16	23.26	30.47	25.82	25.91	23.33	25.45	29.84	37.76	24.92	**28.4**	**25.0**
84	Christs School, Queens Rd, Richmond	21.86	16.08	16.00	11.89	14.17	13.14	12.80	12.98	15.47	19.35	22.63	15.17	**16.0**	**14.0**
51	Thomson Hse, Sheen Lane, SW14	25.47	21.70	20.74	16.01	19.15	17.69	16.73	16.13	21.36	24.94	31.27	18.11	**20.8**	**18.3**
30	The Russell School, Petersham Rd, TW10 7AH	26.26	19.54	19.89	12.34	19.10	15.86	15.31	14.80	18.53	22.61	25.65	17.69	**19.0**	**16.7**
215	Hampton Hill Jnr Schl, St James Ave, TW12	19.28	14.31	missing	9.93	9.85	9.44	8.73	9.02	13.30	15.20	20.17	15.90	**13.2**	**11.6**

UK annual limit value: NO2 = 40 ug/m3. WHO guidelines = 10ug/m3. All monitoring sites are as close as possible to the main school gates or worse case scenario for school exposure

Key:	
	0-20 µg/m³ (complies with UK annual NO2 limit value)
	20-40 µg/m³ (complies with UK annual NO2 limit value)
	40-60 µg/m³ (exceeds UK annual NO2 limit value)
	over 60 µg/m³ (exceeds UK annual NO2, likely exceeds UK hourly NO2 limit value)

2024 Air Quality hot spot PM10 monitoring for LBRuT Nursery, Primary & Senior Schools		PM10 (ug/m^3) 2024											
Site ID	School	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sch 36	St Mary's CE Prim Sch (middle) Strafford Road, TW1 3AD	15.1	18.8	16	12.8	13.3	8	4.8	6.5	7.9	13.8	13.5	9.4
Sch 37	Waldegrave School, Fifth Cross Rd, TW2 5LH	16.6	19.6	15	8.3	13.7	10.8	5	6.1	9.87	16.9	12.3	8.1
Sch 38	Hampton High Schl, Hanworth Rd, Hamptn TW12 3HB	14.1	19.5	10	9.4	17.9	9.6	6.2	6.3	6.7	14.8	12.1	7
Sch 39	Buckingham Prim Schl, Buckingham Rd, Hampton TW12	13.4	18.8	10	9	16.3	10.2	6.3	4.7	8.1	15.1	10.5	7.8
Sch 40	Hampton Inf Schl and Nursery, Ripley Rd, TW12	14.8	17.6	11	12.5	15.6	12.3	5.4	5.2	9.2	15.4	11.6	6.8
Sch 41	Hampton Jnr Schl, Percy Rd, Hampton TW12 2LA	13.6	17.3	12.5	10.6	14.6	11.1	4.8	5.7	11.8	15.1	11.2	10.7
Sch 42	St Mary's Hampton CofE Primary, Oldfield Rd, TW12 2HP	12.2	17.2	7	10.1	16.1	9.9	7.4	6.2	11.8	12.1	11.7	9.6
Sch 43	Twickenham Schl, Percy Rd, Twickenham TW2 6JW	11.2	17.2	11	12.5	13.2	9.5	11.6	4	14.3	15.1	10.1	12.6
Sch 44	Richmond-upon-Thames Schl, Egerton Road,TW2 7SJ	7.9	16.1	14	12.2	16.5	8.9	6.4	5.1	13.6	16.6	11.6	7.1
Sch 45	Lowther Prim Schl, Stillingfleet Rd, Barnes SW13 9AE	14.4	14.2	11.8	10.1	16.2	10.4	7.7	5.2	13.5	15.1	12.3	9.4
Sch 46	Grey Court Schl, Ham St, Richmond TW10 7HN	14.4	16.4	10	9	13.3	8.7	5.4	5.3	13.3	14.4	10.2	8.7
Sch 12	Nelson Primary Sch, Nelson Rd, TW2	11.1	16.2	12	9.2	13.2	8.2	7.1	3.6	12.1	7.8	10.8	12.2
105	East Sheen Prim Schl, URRW, SW14	15.8	20.4	14	11.2	16.6	11.6	9.6	6	13.6	17.6	13.6	14.2
71	St Stephens Prim Schl, Winchester Rd, TW1	13.6	20.6	13	10.6	15.8	11.3	8.4	5.9	11.9	16.3	13	14.0
20	Queens RC Prim Schl, Cumberland Rd, TW9 3HJ	14.2	20.6	14	11.8	16.8	11.7	9.3	6.2	13.8	17.2	13.4	14.1
84	Christs School, Queens Rd, Richmond	12.3	18.8	10	10.6	13.9	10.2	6.2	5.8	9.2	15.4	11.6	10.2
51	Thomson Hse, Sheen Lane, SW14	12.2	16.9	12.5	10.2	15.7	10	7.4	5.2	11.8	15.4	11.8	10.3
30	The Russell School, Petersham Rd, TW10 7AH	11.6	16.5	14	10.7	15.6	8.9	4.7	13.4	13.5	12.6	10.7	8.5
215	Hampton Hill Jnr Schl, St James Ave, TW12	13.2	16.8	14.5	5.2	18.5	10.6	5.2	5.3	12.2	11.5	11.9	7.4
Annual mean UK limit value PM10 = 40ug/m3; WHO guidelines =15ug/m3													

2024 Air Quality hot spot PM2.5 monitoring for LBRuT Nursery, Primary & Senior Schools		$PM_{2.5}$ (ug/m^3) 2024											
Site cod	School	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sch 36	St Mary's CE Prim Sch (middle) Strafford Road, TW1 3AD	9.1	10.4	7	5.7	12.1	4	1.9	3.4	4.8	6.4	8	4.3
Sch 37	Waldegrave School, Fifth Cross Rd, TW2 5LH	9.8	10.6	6.5	4.4	12.6	5	2	3.1	7.8	7.6	7.8	4.5
Sch 38	Hampton High Schl, Hanworth Rd, Hamptn TW12 3HB	5.9	10.5	5.5	5.4	12.7	4.8	2.2	2.8	5.3	5.7	8.4	2.9
Sch 39	Buckingham Prim Schl, Buckingham Rd, Hampton TW12	6.4	8.8	5.4	4.7	12	5.2	2.1	2.2	6	6.4	7.9	3.3
Sch 40	Hampton Inf Schl and Nursery, Ripley Rd, TW12	6.6	9.4	5.4	5.6	11.4	4.6	2.4	3	7.9	6	8.3	3.2
Sch 41	Hampton Jnr Schl, Percy Rd, Hampton TW12 2LA	6.5	9.8	5.5	5.7	11.5	5.6	1.9	2.7	9.1	6	6.5	3.9
Sch 42	St Mary's Hampton CofE Primary, Oldfield Rd, TW12 2HP	6.6	7.9	4	5.3	11.1	5.2	2.2	2.7	7.2	6.3	6.7	3.9
Sch 43	Twickenham Schl, Percy Rd, Twickenham TW2 6JW	6.1	9.7	4.5	5.8	11.7	4.7	4.3	2.5	9.3	4.6	6.6	3.8
Sch 44	Richmond-upon-Thames Schl, Egerton Road,TW2 7SJ	4.9	9.4	7	5.7	12.4	3.8	2.8	2.3	8	5.7	6.9	3.3
Sch 45	Lowther Prim Schl, Stillingfleet Rd, Barnes SW13 9AE	6.6	9.8	6.6	5.4	11.6	4.9	2.6	2.5	8.2	6	8.4	3.5
Sch 46	Grey Court Schl, Ham St, Richmond TW10 7HN	6.8	7.8	5	4.7	12.2	5.2	2.4	2.5	5.1	5.8	6.8	3.2
Sch 12	Nelson Primary Sch, Nelson Rd, TW2	6.4	7.9	6	4.7	11.6	4.4	2.4	2.8	7.4	3.7	7.5	3.3
105	East Sheen Prim Schl, URRW, SW14	13.6	12.2	7	5.8	12.2	5.5	3.5	3	8.8	8.6	8.8	3.8
71	St Stephens Prim Schl, Winchester Rd, TW1	11.8	12.1	6.5	5.7	12.1	5.3	4	2.8	8.4	8.2	8.5	3.9
20	Queens RC Prim Schl, Cumberland Rd, TW9 3HJ	13.8	12.1	7	5.7	12.5	5.6	4.1	3.1	9.1	7.9	8.6	3.9
84	Christs School, Queens Rd, Richmond	6.8	9.6	5.4	4.8	11.4	4.7	3.2	2.4	7.2	6.7	6.8	3.5
51	Thomson Hse, Sheen Lane, SW14	9.7	9.9	7.05	4.9	11.6	4.8	3.6	2.4	7.5	5.6	6.9	3.3
30	The Russell School, Petersham Rd, TW10 7AH	6.2	7.6	5.5	4.8	12.8	5.2	2	4.5	6.3	5.2	6.6	3.2
215	Hampton Hill Jnr Schl, St James Ave, TW12	8.6	6.9	5.5	3.1	14.8	4.6	2.3	2.8	6.6	4.6	7.9	3
Annual mean UK limit value: PM2.5 = 20ug/m3; London Mayoral objective = 10ug/m3; WHO guidelines = 5ug/m3													

Appendix E Technical note bias correction review for 2024 data – Dr I. Kilbane-Dawe[2]

Diffusion tube bias observed at four sites in 2023-2024

Summary This technical note analyses nitrogen dioxide (NO_2) bias between co-located diffusion tubes and automatic monitors at four sites. At three sites, no statistically significant trend was found. At the fourth site, Castelnau, a strong and statistically significant upward trend in bias was identified. This trend is unexpected for the 50% TEA-acetone tubes used and suggests possible experimental or environmental issues. Further investigation is recommended, and the use of national correction factors should be considered until the cause is resolved.

Introduction

Bias in diffusion tube measurements of NO_2 when compared with high accuracy automatic monitors are well documented, and technical approaches for correction between the biases is set out by Government. This approach typically requires that biases are determined by co-locating three diffusion tubes (a triplet) at the inlet of a highly accurate automatic monitor, and comparing them using an annual average of monthly average measurements. This work is important for local and national policy purposes, as correction for these biases can substantially alter the NO2 values determined using diffusion tubes, significantly affecting local and national policy. Unexpected behaviours in these biases can be a cause for concern about the experimental setup. This is the subject of this technical note.

2 *Dr Kilbane-Dawe has 33 years' experience in air quality, environment policy, and sustainable transport. He led the DfT Office for Science, AEA's 125-strong air quality team, and founded ESA's AI for environment programme. He has delivered over £100M in projects, including the GCSA's VW emissions inquiry, the first AI-enabled environmental satellite, and airTEXT, the first public air pollution alert system. His background is in atmospheric physics and chemistry, with a PhD from Cambridge on atmospheric modelling and measurement.*

Causes of diffusion tube bias

2

The main sources of diffusion tube bias (see literature review section) are:

Differences in laboratory setup, being the primary source of bias;
Winds strong enough to cause turbulent flow in the tubes;
Ambient UV and temperature, most notable by season;
NO2 concentrations.

Correcting for differences in laboratory setup is the main purpose of diffusion tube bias correction, rather than factors such as distance from the road.

Seasonal variability in NO_2 diffusion tube bias is well-documented. Bias tends to be more negative in warmer months due to increased photochemical degradation by UV, while colder months often show less negative or even positive bias. This seasonal pattern is attributed to temperature-dependent reactions and varying atmospheric conditions affecting NO_2 uptake and retention in the tubes.

Reviews of biases from multiple laboratories suggests that:

The acetone-50% TEA mix when prepared by Gradko, is the most stable versus seasonal variation, with an essentially flat profile, and modest changes in a 10-20% band (see figure 1).
Water TEA solutions have more seasonal dependence.

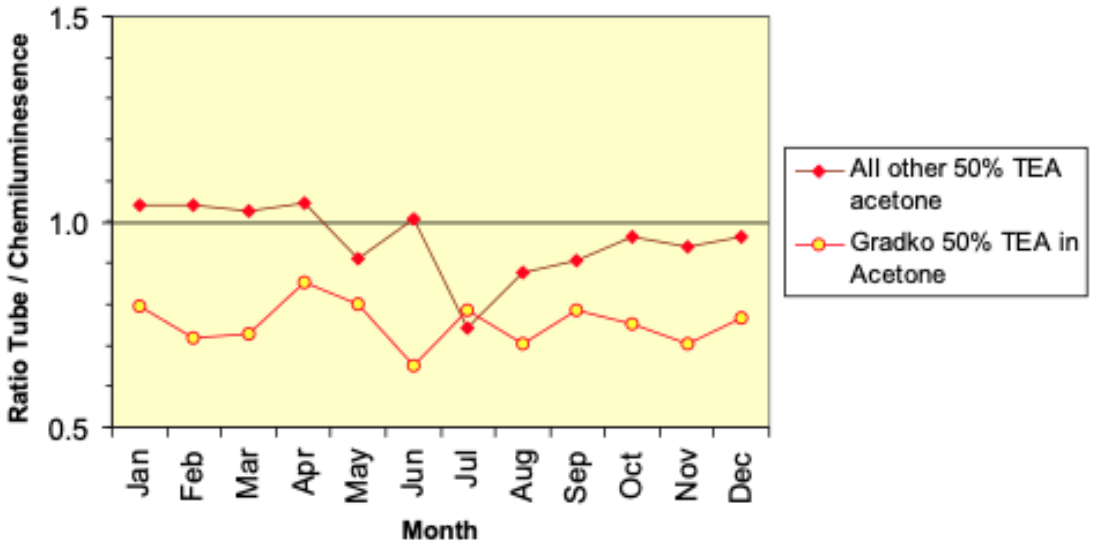


Figure 1. Seasonal variation observed in diffusion tube measurements using 50% TEA acetone doping, to a chemiluminescent detector. *Reproduced from "Compilation of Diffusion Tube Collocation Studies Carried out by Local Authorities," report for Defra by Duncan Laxen & Penny Wilson, 2002. Original caption: Ratio of tube to chemiluminescence vs time of year for tube prepares and analysed by other laboratories and by Gradko, using 50% TEA in acetone. Tubes exposed for one month intervals.*

Sustained changes in bias, for example a consistent increase or decrease over time, may indicate issues with the experimental setup (see literature review section). Potential causes include changes in laboratory analysis methods, alterations in tube preparation protocols, shifts in local environmental conditions or degradation of equipment. Such trends warrant a review to identify potential underlying issues.

Observed biases in 2023 and 2024

Monthly average biases compared with a co-located diffusion tube triplet or doublet using the 50% TEA-acetone technique were calculated for the following co-location sites, where diffusion tube monthly measurements were obtained following national technical guidance:

Castelnau automatic chemiluminescent monitor vs 3 diffusion tubes
Merton Civic Centre automatic chemiluminescent monitor vs 3 diffusion tubes
Barnes Wetlands automatic chemiluminescent monitor vs 3 diffusion tubes
Felsham Road automatic chemiluminescent monitor vs 2 diffusion tubes
Euston Road MCERTs automatic monitor vs 3 diffusion tubes.

The variation in monthly biases and secular trends in the same are shown in the figure below. This excludes Felsham Road station, which has insufficient automatic data to include in the analysis. The laboratory used for the Euston Road site was Socotec, the others were processed by Gradko.

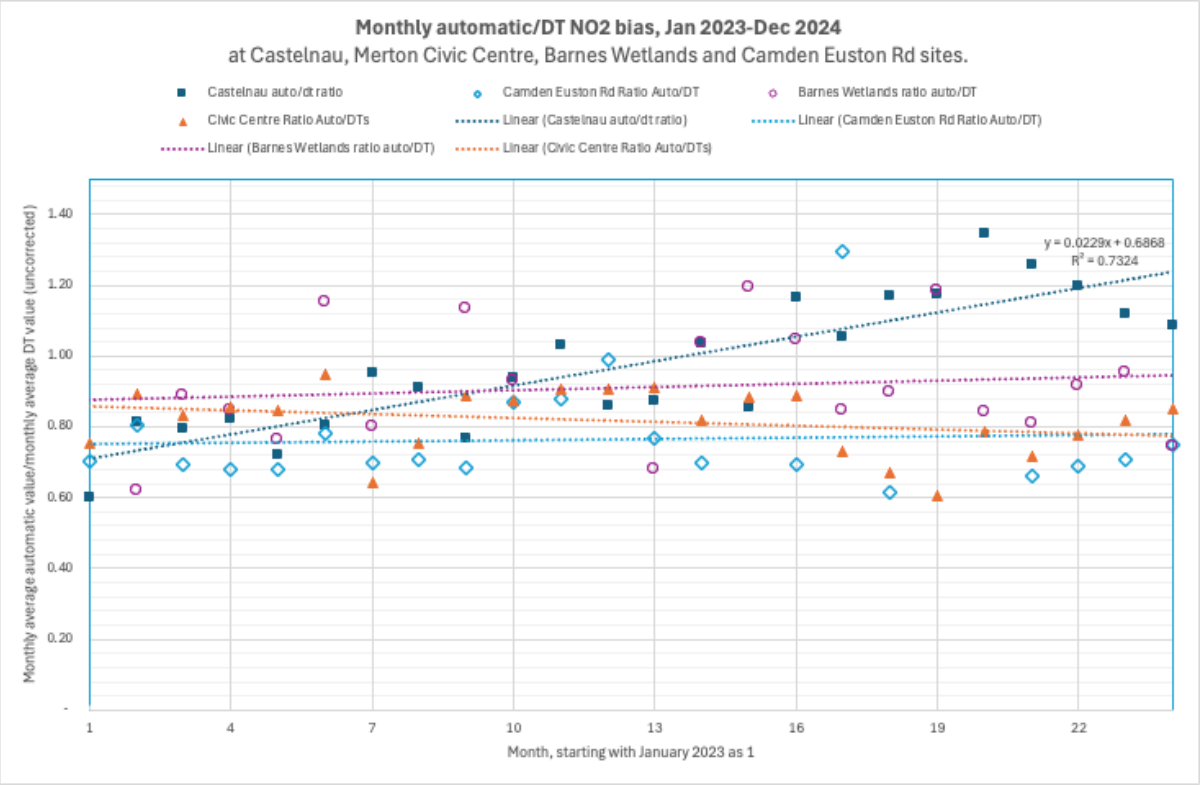


Figure 2. Observed bias between average monthly measurements of NO2 using co-located automatic measurements and unadjusted diffusion tube data Jan 2023-Dec 2024. *Castelnau: blue solid squares; Merton Civic Centre: orange triangles; Barnes Wetlands: purple rings; Euston Road: blue diamonds. Estimated secular trends in the bias shown with dashed lines of the same colour.*

Visual inspection of the monthly data from January 2023 to December 2024 (circles and squares in the figure above) suggests no or very slight trend in the bias ratios at Euston Road, Merton Civic Centre and Barnes Wetlands, and a probable secular trends in the biases at Castelnau. This has significant policy implications as Castelnau is the local bias reference site, used for diffusion tube bias correction for all of LB Richmond upon Thames for many years. Problems at this site would therefore affect measurements across the whole borough.

A linear trend in the bias was calculated for each measurement site, using the least squares method. This is also plotted in the figure above as the dotted lines.

Statistical significance of the Castelnau trend

To investigate the likelihood that the Castelnau trend is real rather than a product of random variations in the bias (Figure 3, with raw data in the appendix), significance testing was conducted. From the 24 months of measurements, significance was tested using both a linear, least squares regression and a Bayesian linear model to statistically test the probability the observed trend results from random variability in the data.

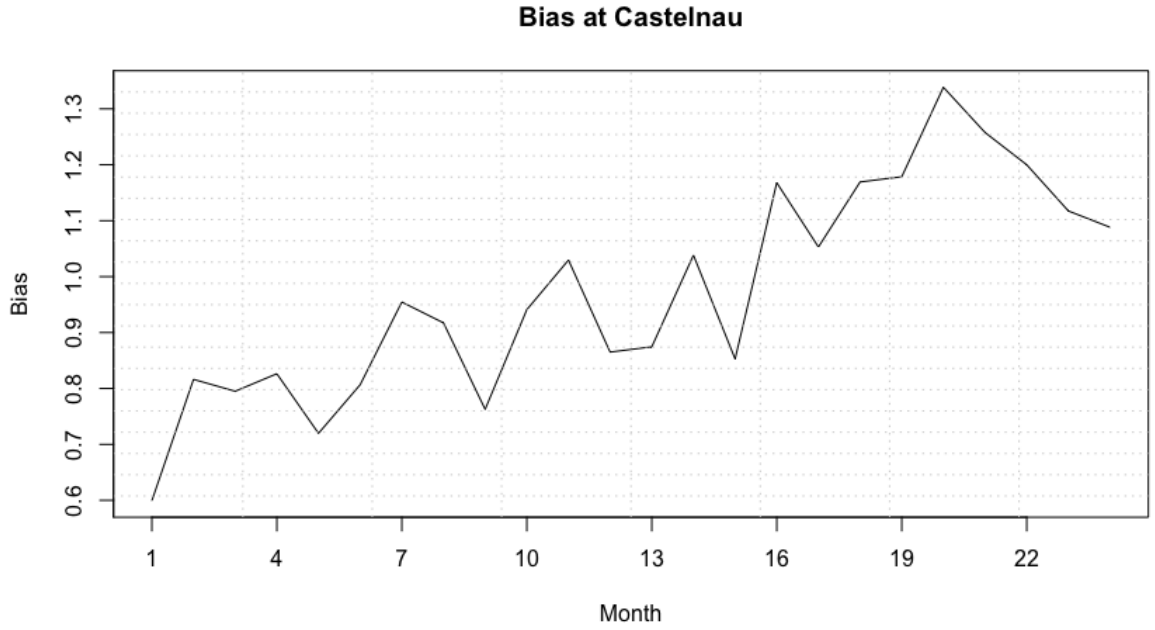


Figure 3. Bias between the automatic monitoring and diffusion tube triplet at Castelnau over the period January 2023 to December 2024.

For the linear regression, a t-test was conducted on the bias, giving a t-value of 7.73, and a likelihood that this is due to chance (p-value) around 1/10,000,000. This suggests is it exceptionally improbable that the trend is due to random data. This also estimated that around 73% of the observed changes in the bias were due to the secular trend.

Using a Bayesian approach, the probability of a trend being present is effectively 100%.

While these statistics do not explain the underlying cause of the trend, they confirm the visual suggestion that the trend is real. Since such a trend is not expected in an experimentally sounds setup, this offers a good reason to investigate the site to determine possible causes for this trend.

Conclusions

Diffusion tube biases are primarily intended to correct for inconsistencies between laboratories, with a lesser effect of correcting for local conditions. For 50%TEA-acetone mixtures, a seasonal variation in bias is not usually expected. A consistent trend in biases between a co-located diffusion tube triplet and an automatic monitor is considered a cause for investigation of the experimental setup. At the Castelnau site a statistically significant positive trend was found in the bias, which would not be expected from a normally operating co-location site.

Recommendations

Sustained changes in bias have the potential to be indicative of problems with the experimental setup, either of the diffusion tubes or the automatic monitors. Biases identified in data for two years at Castelnau were found to be highly likely to be caused by some uncontrolled factor causing a steady shift over time between the measurements made using the automatic monitor and the diffusion tubes, thus creating a trend in the biases. Further work should be conducted to investigate the source of these changes, and consideration given as to whether diffusion tube statistics for 2023 and 2024 should be corrected based on national correction factors pending resolution of these investigations. Given the policy implications of the use of biases at this site for correction of both diffusion tube data in LB Richmond upon Thames and in the national bias estimation, it is recommended that the average bias at this site not be used until the underlying causes of the secular trend are determined.

Acknowledgements

Thanks to Tom Parkes and LB Camden for sharing raw data at Euston Rd, and David Butterfield at National Physical Laboratory for useful feedback on initial calculations.

Linear analysis of the data was conducted in the R language using the LM model developed by the R Core Team (2024), described in *R: A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing, Vienna, Austria. https://www.R-project.org/

Bayesian analysis of the data was conducted in the R language using the brms package developed by Bürkner, P.-C. (2017). *brms: An R Package for Bayesian Multilevel Models Using Stan*. *J. Stat. Softw.*, 80(1), 1–28. https://doi.org/10.18637/jss.v080.i01

Appendix: Literature reviewed and notable points

(1) Compilation of Diffusion Tube Collocation Studies Carried out by Local Authorities, Duncan Laxen & Penny Wilson (2002)

Original studies by Tony Bush, Steven Moorcroft, Smith S, Stevenson K (2001) Validation of NO_2 Diffusion Tube Methodology in the UK, Atmos. Environ., 35, 289-296.
See also Review & Assessment: Pollutant Specific Guidance, LAQM.TG4(00), DETR (2000)
Gradko and 50% TEA in acetone the least seasonal variability in bias, so this suggests that for this setup we should not expect a bias drift over time.
No evidence of any pattern of differences in bias between roadside and other sites.
In 8 out of the 9 data sets there is a more negative bias at higher concentrations so there may be a relationship between tube performance and concentration. The exception is for Gradko 50% TEA in water tubes whose pattern is quite variable and no firm conclusions are possible.

(2) The Relationship Between Diffusion Tube Bias and Distance From the Road, Duncan Laxen & Ben Marner, AQC, 2006

PDT bias adjustment is primarily for laboratory techniques.
Roadside distance correction isn't required although it exists.
Corrections for chemistry in the tube can be done but this is pointless at or below 40µg/m3.

(3) Diffusion Tubes for Ambient NO2 Monitoring: Practical Guidance for Laboratories and Users, Defra (2008)

Diffusion tubes are categorised as an "indicative" monitoring technique. This refers to a technique with relatively high uncertainty, in the case of diffusion tubes quoted as ± 25%. By contrast, the chemiluminescence method, used in most automatic ambient monitoring apparatus for NO2, is defined as the reference method for this pollutant. There is a CEN standard for the chemiluminescent method14 (EN 14211:2005 "Ambient air quality - Standard method for the measurement of the concentration of NO_2 and nitrogen monoxide by chemiluminescence") and its uncertainty is typically quoted as ± 15%.
For diffusion tubes the determination of the absorbed NO2 to for nitrite is temperature dependent, proportion with a power law of T^1.81. Accounting for different months temperatures was not recommended in 2008, as these were only being used for indicative monitoring (my emphasis).
The standing recommendation is to assume an average UK T of 11 C (giving 1.07412). If T was 25 C this would be 1.17186, a 9% difference.
Reject any DTs where there have been bonfires etc. near the site, or unusual traffic activity. Also those found on the ground or with dirt, insects or spiders inside.

(4) Investigation of the Effects of Harmonising Diffusion Tube Methodology, 2011

Performance of labs in preparing and analysing diffusion tubes varies wildly.

(5) Biases in the Measurement of Ambient NO_2 (NO2) by Palmes Passive Diffusion Tube: A Review of Current Understanding, Mathew R. Heal, Duncan P. H. Laxen, Ben B. Marner, Atmosphere 10(7), 357 (2019);

Strong evidence that measurement of NO2 by PDT can be subject to bias from a number of sources. The most significant positive biases in normal usage are ambient wind flow at the entrance of the tube potentially leading to bias of tens of percent, and within-tube chemical reaction between NO and O3 causing bias up to ~25% at urban background locations (but much less at roadside and rural locations). Sources of potentially significant negative bias are associated with deployments in atmospheres with relative humidities <~75% that cause incomplete conversion of NO2 to NO2, and with long deployment times (i.e., several weeks) in warm and sunny conditions. There is also evidence to suggest that biases (positive or negative) can be introduced by individual laboratories in the PDT preparation and NO2 quantification steps.

More than one bias may be present in any given PDT deployment. The biases act independently so the net effect on PDT NO2 determination is the linear summation of individual biases acting in a particular deployment. For some PDT deployments, positive and negative biases may offset each other leading to smaller net bias.

Studies examining experimental evidence for potential biases arising in PDT preparation have usually involved a spread of laboratories preparing and analysing the PDTs, and have concluded that PDT performance varied more with the laboratory than with any particular preparation variable.

The individual and net magnitude of bias that may impact NO2 determination in an individual PDT deployment cannot easily be predicted or quantified. In theory, laboratory-derived biases can be minimised by adherence to good QA/QC procedures and participation in inter-analyst comparisons. Positive bias from wind effects can be substantially reduced either by use of a coarse mesh across the tube and/or with the tubes placed within a shelter. Membranes across the mouth of the tube should not be used since these may overcompensate for wind-induced positive bias by providing resistance to free molecular diffusion. The positive bias from within-tube chemical reaction between NO and O3 can, in principle, be eliminated by use of tube material that fully transmits the UV wavelengths relevant to NO2 photolysis, but in practice this is hard to achieve and is likely incompatible with placing the tubes within a wind shelter.

There is also an unresolved question concerning the accuracy of the value of the diffusion coefficient for NO2 in air that is used to covert the mass of absorbed NO_2^- to average ambient NO2 concentration. Any inaccuracy in D would proportionally apply universally to all NO2 passive sampler measurements.

The effect of net bias can be reduced by application of a local "bias adjustment" factor derived from co-locations of PDTs with chemiluminescence analyser. When this is carried out, the PDT is suitable as an indicative measure of NO2 for air quality assessments. However, it must be recognised that individual PDT exposures may be subject to unknown variation in the true bias adjustment factor for that exposure.

(6) Methodology review of the NO2 Compliance Assessment: Evidence for using high quality measurements over PCM modelled concentrations (2020)

PCM performs less well than diffusion tubes, hence switch to PDTs.

(7) Environment Agency/Joint Air Quality Unit UK Urban NO2 Network Operational Annual Report 2021 (2022)

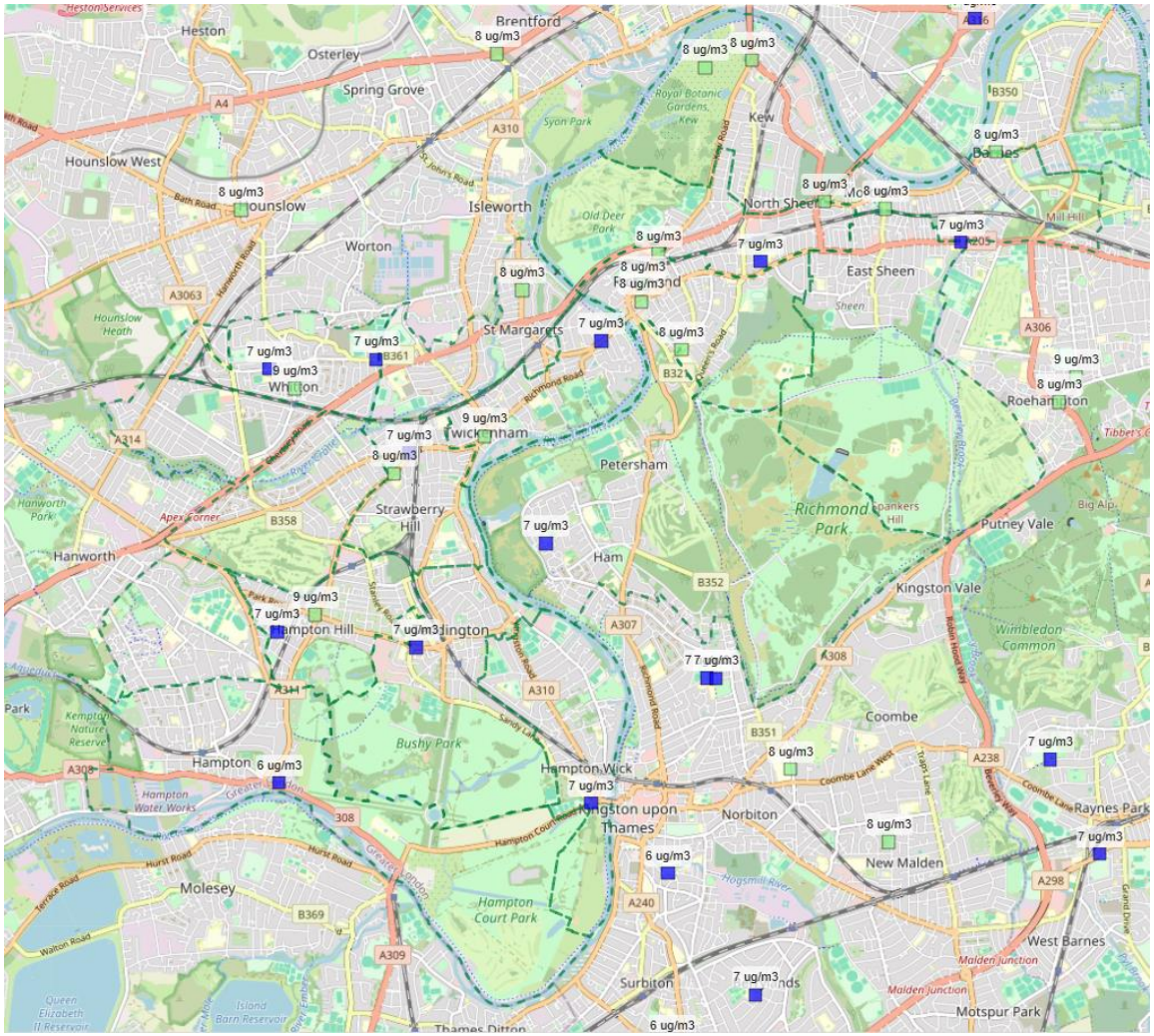
There are 34 sites with collocated PDTs and automatic AURN monitors, but the monthly bias data are not available.

Appendix: Automatic measurements using a chemiluminescent monitor and unadjusted diffusion tube triplet data at Castelnau, months 1-24 of 2023-2024.

Month	Average of Castelnau Diffusion Tubes 23/1,2,3	Castelnau automatic	Month	Average of Castelnau Diffusion Tubes 23/1,2,3	Castelnau automatic
1	28.7	17.2	13	24.7	21.6
2	28.3	23.1	14	18.3	19.0
3	20.0	15.9	15	19.7	16.8
4	19.0	15.7	16	14.3	16.7
5	15.7	11.3	17	17.0	17.9
6	15.0	12.1	18	13.0	15.2

7	11.0	10.5	19	14.0	16.5
8	13.3	12.2	20	12.7	17.0
9	17.7	13.5	21	16.3	20.5
10	20.3	19.1	22	20.0	24.0
11	23.7	24.4	23	24.7	27.6
12	16.3	14.1	24	17.0	18.5

Appendix F PM2.5 Monitoring by Breathe London Nodes in 2024



Legend

Annual average PM2.5 (μg m^{-3})

- 5-7.5
- 7.5-10 under GLA interim target 1

Breathe London nodes were operational in LBRuT in 2024 up until 1st October 2024. In October 2024 the Breathe London contract expired, so Richmond Council arranged a temporary contract directly with the sensor provider, Clarity, operational from 1st November 2024. Annual average PM2.5 measured by Breathe London nodes since 2021 can be viewed here:

https://swlonrsp.github.io/LBRUT_Map_PM25_2021_2024_BL.html