London Borough of Lewisham Air Quality Annual Status Report for 2021

Date of publication: May 2022

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

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

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Abbreviations

Abbreviation	Description
AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
AQO	Air Quality Objective
BEB	Buildings Emission Benchmark
CAB	Cleaner Air Borough
COPD	Chronic Obstructive Pulmonary Disease
CCG	Clinical Commissioning Group
DEFRA	Department for Food, Environment and Rural Affairs
DPLN	Deptford Parks Liveable Neighbourhood
EV	Electric Vehicle
GLA	Greater London Authority
JNSA	Joint Strategic Needs Assessment
LAEI	London Atmospheric Emissions Inventory
LAQM	Local Air Quality Management
LLAQM	London Local Air Quality Management
MAQF	Mayor's Air Quality Fund
NRMM	Non-Road Mobile Machinery
OLEV	Office for Low Emission Vehicles
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
ULEZ	Ultra-Low Emission Zone

Table A.   Summary of National Air Quality Standards and Objectives

Pollutant	Standard / Objective (UK)	Averaging Period	Date[1]
Nitrogen dioxide (NO$_2$)	200 µg m^{-3} not to be exceeded more than 18 times a year	1-hour mean	31 Dec 2005
Nitrogen dioxide (NO$_2$)	40 µg m^{-3}	Annual mean	31 Dec 2005
Particles (PM$_{10}$)	50 µg m^{-3} not to be exceeded more than 35 times a year	24-hour mean	31 Dec 2004
Particles (PM$_{10}$)	40 µg m^{-3}	Annual mean	31 Dec 2004
Particles (PM$_{2.5}$)	25 µg m^{-3}	Annual mean	2021
Particles (PM$_{2.5}$)	Target of 15% reduction in concentration at urban background locations	3-year mean	Between 2010 and 2021
Sulphur dioxide (SO$_2$)	266 µg m^{-3} not to be exceeded more than 35 times a year	15-minute mean	31 Dec 2005
Sulphur dioxide (SO$_2$)	350 µg m^{-3} not to be exceeded more than 24 times a year	1-hour mean	31 Dec 2004
Sulphur dioxide (SO$_2$)	125 µg m^{-3} mot to be exceeded more than 3 times a year	24-hour mean	31 Dec 2004

Notes:

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

(2) A comparison of the data to the 2021 World Health Organization (WHO) published guidelines has been appended to this report.

1. Air Quality Monitoring

❖ **Continuous monitoring stations**

There were five continuous monitoring stations in operation within the London Borough of Lewisham (LBL) during 2021. The previous LW1-Catford site (now LW6) measuring nitrogen dioxide (NO_2), was relocated in November 2021 to Laurence House, 1 Catford Road due to ongoing refurbishment works that were likely to cause significant interferences on the instrument. Details of all continuous monitoring stations in operation during 2021 are given below in Table B.

❖ **Diffusion tubes**

2022 (Current): An additional 20 diffusion tubes sites were added in January 2022. Monitoring is ongoing and the results will be ratified and published in May/June 2023.

2021: Monitoring of NO_2 with diffusion tubes was carried out at 101 sites throughout 2021, one of which is a triplicate site co-located with the LW2 continuous monitor at New Cross. Details of all tube diffusion tube sites in 2021 are given in Table C. The location of all diffusion tube sites in 2021 are displayed in Figure A. 9 and Figure A. 10 within Appendix A.

2020: An additional 51 tubes were added to the network in September 2020. The 51 new sites were commissioned as part of the monitoring protocol that was introduced as part of the councils covid-19 emergency transport response, in order to understand the impact of the works on air quality. The continuity of these monitoring sites will depend on the availability of funding and resources for this work.

1.1   Locations

Table B.   Details of Automatic Monitoring Sites for 2021

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA? If so, which AQMA?	Distance to Relevant Exposure (m)	Distance to Kerb of Nearest Road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Monitoring technique
LW1	Lewisham1 (Catford)	537675	173689	Urban Background	Y-Lewisham AQMA	n/a	3.0	3.0	NO_2	Chemiluminescence
LW6	Lewisham1 (Laurence House, Catford)	537588	173606	Roadside	Y-Lewisham AQMA	n/a	3.6	1.5	NO_2	Chemiluminescence
LW2	Lewisham 2 (New Cross)	536241	176932	Roadside	Y-Lewisham AQMA	0	6.0	2.5	NO_2, PM_{10}, $PM_{2.5}$	Chemiluminescence, TEOM-FDMS
LW4	Lewisham 4 (Loampit Vale)	537912	175838	Roadside	Y-Lewisham AQMA	0	7.0	2.5	NO_2, PM_{10}	Chemiluminescence, BAM
LW5	Lewisham Deptford	537228	177471	Urban Background	Y-Lewisham AQMA	24	2.0	2.5	NO_2, $PM_{2.5}$	Chemiluminescence, TEOM-FDMS
HP1	Honor Oak Park	536473	174128	Urban Background	Y-Crofton Park and Honor Oak Park AQMA	n/a	n/a	n/a	NO_2, PM_{10}, $PM_{2.5}$	Chemiluminescence, TEOM-FDMS

Note: LW1 was decommissioned and a new one relocated to LW6 in November 2021

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

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA? If so, which AQMA?	Distance to Relevant Exposure (m)	Distance to Kerb of Nearest Road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor. (Y/N)
L1	Chubworthy Street	536109	177580	Roadside	Y-Lewisham AQMA	5	2	2.5	NO$_2$	N
L2	Bronze Street	537540	177439	Urban Background	Y-Lewisham AQMA	0	6	2.5	NO$_2$	N
L3	Grove Street	536561	178471	Urban Background	Y-Lewisham AQMA	n/a	2	2.5	NO$_2$	N
L4	Plough Way	536534	178926	Urban Background	N	n/a	2	2.5	NO$_2$	N
L5	Lee High Road	539678	175050	Roadside	Y-Lewisham AQMA	0	5	2.5	NO$_2$	N
L6	Le May Avenue	540615	172337	Urban Background	N	0	5	2.5	NO$_2$	N
L7	Bell Green	536556	171810	Roadside	N	0	3	2.5	NO$_2$	N
L8	Stondon Park	536229	174032	Roadside	Y-Crofton Park and Honor Oak Park AQMA	0	5	2.5	NO$_2$	N
L9	Ladywell Road	537500	174925	Roadside	Y-Lewisham AQMA	0	3	2.5	NO$_2$	N
L10	Whitburn Road	538062	175085	Roadside	Y-Lewisham AQMA	1	1	2.5	NO$_2$	N
L11	Sparta Street	538007	176517	Roadside	Y-Lewisham AQMA	3	3	2.5	NO$_2$	N
L12	Montague Avenue, Hilly Fields	537132	175353	Urban Background	Y-Lewisham AQMA	n/a	60	2.5	NO$_2$	N
L13	Mayow Road	535804	171567	Urban Background	N	0	5	2.5	NO$_2$	N
L14	Boyne Road	538482	175792	Urban Background	Y-Lewisham AQMA	3	1	2.5	NO$_2$	N
L15	Lewisham Road	538237	176101	Roadside	Y-Lewisham AQMA	0	10	2.5	NO$_2$	N

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA? If so, which AQMA?	Distance to Relevant Exposure (m)	Distance to Kerb of Nearest Road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor. (Y/N)
L16	Loampit Vale	537740	175930	Roadside	Y-Lewisham AQMA	0	1.5	2.5	NO$_2$	N
L17	New Cross Monitoring Station (Triplicate)	536246	176934	Roadside	Y-Lewisham AQMA	0	6	2.5	NO$_2$	Y
L18	New Cross Monitoring Station (Triplicate)	536246	176934	Roadside	Y-Lewisham AQMA	0	6	2.5	NO$_2$	Y
L19	New Cross Monitoring Station (Triplicate)	536246	176934	Roadside	Y-Lewisham AQMA	0	6	2.5	NO$_2$	Y
L20	Hatcham Park Road	535746	176969	Roadside	Y-Lewisham AQMA	1	4	2.5	NO$_2$	N
L21	Brockley Rise	536133	173341	Roadside	Y-Crofton Park and Honor Oak Park AQMA	0	3	2.5	NO$_2$	N
L22	Ringstead Road	538060	173816	Urban Background	Y-Lewisham AQMA	3	0.5	2.5	NO$_2$	N
L23	Catford Hill	537178	173365	Roadside	N	6	0.5	2.5	NO$_2$	N
L24	Hazelbank Road	538930	172713	Urban Background	N	4	2	2.5	NO$_2$	N
L25	Stanstead Road	535530	173198	Urban Background	N	0	10	2.5	NO$_2$	N
L26	Shardloes Road	536527	175935	Roadside	Y-Lewisham AQMA	3	0.5	2.5	NO$_2$	N
L27	Montpelier Vale	539604	176090	Roadside	Y-Lewisham AQMA	2	0.5	2.5	NO$_2$	N
L28	Baring Road	540051	173769	Roadside	N	5	0.5	2.5	NO$_2$	N
L29	Holy Cross, Sangley Road	538165	173406	Roadside	N	0	5	2.5	NO$_2$	N

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA? If so, which AQMA?	Distance to Relevant Exposure (m)	Distance to Kerb of Nearest Road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor. (Y/N)
L30	Christchurch, Perry Vale	535535	172679	Roadside	N	1	5	2.5	NO_2	N
L31	St Mary Magdalen's RC, Howson Road	536399	175150	Urban Background	Y-Crofton Park and Honor Oak Park AQMA	2	2	2.5	NO_2	N
L32	Grinling Gibbons, Clyde Street	536944	177665	Urban Background	Y-Lewisham AQMA	0	2	2.5	NO_2	N
L33	St Mary's CE, Lewisham High Street	537979	174792	Roadside	Y-Lewisham AQMA	0	2	2.5	NO_2	N
L34	Sydenham, Dartmouth Road	535071	172346	Urban Background	N	0	5	2.5	NO_2	N
L35	Kender Primary School	535447	176897	Roadside	Y-Lewisham AQMA	N/A	2	2.5	NO_2	N
L36	Deptford Park School	536275	178405	Roadside	Y-Lewisham AQMA	N/A	2	2.5	NO_2	N
L37	St James Hatcham School	536317	176883	Urban Background	Y-Lewisham AQMA	N/A	N/A	2.5	NO_2	N
L38	Beecroft Primary School	536564	174937	Roadside	Y-Crofton Park and Honor Oak Park AQMA	6	2.0	2.6	NO_2	N
L39	John Stainer Primary School	536308	175721	Roadside	Y-Lewisham AQMA	8	1.7	2.6	NO_2	N
L40	Myatt Garden Primary School	536792	176432	Urban Background	Y-Lewisham AQMA	4	1.4	2.6	NO_2	N
L41	Ashmead Primary School	537256	176353	Urban Background	Y-Lewisham AQMA	8	0.7	2.3	NO_2	N
L42	Lucas Vale Primary School	537032	176534	Urban Background	Y-Lewisham AQMA	0	2.2	2.7	NO_2	N
L43	Childeric Primary School	536389	177144	Urban Background	Y-Lewisham AQMA	6	2.9	2.7	NO_2	N

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA? If so, which AQMA?	Distance to Relevant Exposure (m)	Distance to Kerb of Nearest Road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor. (Y/N)
L44	Sir Francis Drake Primary School	536028	178107	Roadside	Y-Lewisham AQMA	1	2.0	2.5	NO$_2$	N
L45	Tidemill Academy	537228	177284	Roadside	Y-Lewisham AQMA	1	2.9	2.7	NO$_2$	N
L46	St Margaret Lee Primary School	539416	175315	Urban Background	Y-Lewisham AQMA	1.	2.3	2.6	NO$_2$	N
L47	Rathfern Primary School	536839	173211	Roadside	N	2	2.1	2.5	NO$_2$	N
L48	Holbeach Primary School	537433	173965	Urban Background	Y-Lewisham AQMA	25	0.9	2.6	NO$_2$	N
L49	St Saviours RC Primary School	538358	175324	Urban Background	Y-Lewisham AQMA	3	2.1	2.4	NO$_2$	N
L50	Rushey Green Primary School	537836	173400	Urban Background	N	0	4.5	2.5	NO$_2$	N
L51	290 Brownhill Rd South Circular	538803	173683	Roadside	Y-Lewisham AQMA	10	2.2	2.6	NO$_2$	N
L52	St John CofE School	538285	171877	Roadside	N	3	3.9	2.4	NO$_2$	N
L53	Greenvale School	539319	172362	Urban Background	N	1	2.9	2.5	NO$_2$	N
SSDT_1	46 Grinstead Road	536263	178099	Roadside	Y-Lewisham AQMA	12	1.4	2.4	NO$_2$	N
SSDT_2	58 Friendly Street	537250	176593	Roadside	Y-Lewisham AQMA	7	1.8	2.2	NO$_2$	N
SSDT_3	1 Lind Street	537534	176469	Roadside	Y-Lewisham AQMA	23	0.8	2.5	NO$_2$	N
SSDT_4	Goffers Road	538982	176645	Roadside	Y-Lewisham AQMA	N/A	2.0	2.1	NO$_2$	N
SSDT_5	121 Pepys Road	535947	176287	Roadside	Y-Lewisham AQMA	8	0.7	2.5	NO$_2$	N
SSDT_6	101 Jerningham Road	536197	176514	Roadside	Y-Lewisham AQMA	9.5	0.6	2.4	NO$_2$	N
SSDT_7	41 South Row	539761	176431	Roadside	Y-Lewisham AQMA	14	0.9	2.5	NO$_2$	N

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA? If so, which AQMA?	Distance to Relevant Exposure (m)	Distance to Kerb of Nearest Road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor. (Y/N)
SSDT_8	1 Belmont Park	538795	175291	Roadside	Y-Lewisham AQMA	6	0.5	2.4	NO$_2$	N
SSDT_9	19 Manor Road	538926	175030	Roadside	Y-Lewisham AQMA	14	0.5	2.7	NO$_2$	N
SSDT_10	94 Hither Green Lane	538367	174857	Roadside	Y-Lewisham AQMA	11	1.4	2.4	NO$_2$	N
SSDT_11	1 Woodville Close	540200	174781	Roadside	Y-Lewisham AQMA	14	0.5	2.5	NO$_2$	N
SSDT_12	4 Burnt Ash Road	539871	174720	Roadside	Y-Lewisham AQMA	20	0.5	2.3	NO$_2$	N
SSDT_13	101 Manor Lane	539418	174543	Roadside	Y-Lewisham AQMA	9	0.9	1.8	NO$_2$	N
SSDT_14	160 Leahurst Road	539063	174543	Roadside	Y-Lewisham AQMA	5	1.7	2.5	NO$_2$	N
SSDT_15	185 Hither Green Lane	538562	174494	Roadside	Y-Lewisham AQMA	5	1.4	2.7	NO$_2$	N
SSDT_16	140 Chudleigh Road	536975	174537	Roadside	Y-Crofton Park and Honor Oak Park AQMA	14	2.3	2.2	NO$_2$	N
SSDT_17	112 Crofton Park Road	536666	174206	Roadside	Y-Crofton Park and Honor Oak Park AQMA	2	1.9	2.4	NO$_2$	N
SSDT_18	George Lane, Holy Trinity Church	538313	174269	Roadside	Y-Lewisham AQMA	6	2.2	2.5	NO$_2$	N
SSDT_19	193 George Lane	538589	174189	Roadside	Y-Lewisham AQMA	12	1.9	2.2	NO$_2$	N
SSDT_20	208 Verdant Lane	539498	172969	Roadside	N	15	0.5	2.5	NO$_2$	N
SSDT_21	Holme Lacey Road	539892	174174	Roadside	Y-Lewisham AQMA	8	2.5	2.4	NO$_2$	N

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA? If so, which AQMA?	Distance to Relevant Exposure (m)	Distance to Kerb of Nearest Road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor. (Y/N)
SSDT_22	40B Burnt Ash Road	540014	173979	Roadside	Y-Lewisham AQMA	25	0.4	2.3	NO$_2$	N
SSDT_23	75 Leyland Road	540119	174329	Roadside	Y-Lewisham AQMA	7	0.8	2.5	NO$_2$	N
SSDT_24	131 Woodyates Road	540504	173977	Roadside	N	8	2.6	2.6	NO$_2$	N
SSDT_25	268 Manor Lane	539559	173929	Roadside	Y-Lewisham AQMA	15	0.7	2.6	NO$_2$	N
SSDT_26	389 Hither Green Lane	539352	173783	Roadside	Y-Lewisham AQMA	12	2.7	2.6	NO$_2$	N
SSDT_27	51 Polstead Road	536753	173603	Roadside	Y-Crofton Park and Honor Oak Park AQMA	5	3.0	2.3	NO$_2$	N
SSDT_28	119 Sandhurst Road	538723	173345	Roadside	N	8	1.5	2.4	NO$_2$	N
SSDT_29	18 Jevington Way	541019	173231	Roadside	N	13	0.8	2.6	NO$_2$	N
SSDT_30	7 Fordmill Road	537530	173095	Roadside	N	8	0.9	2.5	NO$_2$	N
SSDT_31	38 Thorpewood Avenue	534939	172586	Roadside	N	10	0.6	2.4	NO$_2$	N
SSDT_32	155 Woolstone Road	536217	172563	Roadside	N	8	2.2	2.2	NO$_2$	N
SSDT_33	3 Brookehowse Road	537436	172596	Roadside	N	17	3.3	2.7	NO$_2$	N
SSDT_34	136 Thornsbeach Road	538471	172660	Roadside	N	14	2.6	2.5	NO$_2$	N
SSDT_35	49 Castillion Road	539254	172658	Roadside	N	9	2.5	2.4	NO$_2$	N
SSDT_36	12 Pragnell Road	540601	172744	Roadside	N	23	2.7	2.6	NO$_2$	N
SSDT_37	147 Perry Hill	536618	172405	Roadside	N	11	1.0	2.6	NO$_2$	N
SSDT_38	Dacres Road	535533	172340	Roadside	N	3	2.5	2.4	NO$_2$	N
SSDT_39	Wells Park Road	534309	172044	Roadside	N	15	2.8	2.3	NO$_2$	N

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA? If so, which AQMA?	Distance to Relevant Exposure (m)	Distance to Kerb of Nearest Road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor. (Y/N)
SSDT_40	22 Mayow Road	535883	171754	Roadside	N	14	0.6	2.2	NO_2	N
SSDT_41	5 Stanton Way	536598	171766	Roadside	Y-Lewisham AQMA	16	0.7	2.8	NO_2	N
SSDT_42	Oakridge Road	538788	171517	Roadside	N	14	0.5	2.2	NO_2	N
SSDT_43	198 Glenbow Road	539170	170869	Roadside	N	13	3.4	2.4	NO_2	N
SSDT_44	Glenbow Road, Playing Fields	539374	171246	Roadside	N	39	3.3	2.3	NO_2	N
SSDT_45	165 Downham Way	539492	171567	Roadside	N	9	2.7	2.6	NO_2	N
SSDT_46	Daneswood Avenue, 90 Passfields	539732	172202	Roadside	N	13	0.7	2.5	NO_2	N
SSDT_47	398 Downham Way	540249	171633	Roadside	N	6	3.2	2.4	NO_2	N
SSDT_48	549 Downham Way	540331	172103	Roadside	N	12	0.7	0.2	NO_2	N
SSDT_49	72 Tyrwhitt Road	540734	175912	Roadside	Y-Lewisham AQMA	11	0.6	2.5	NO_2	N
SSDT_50	53 Tressillian Road	540965	175804	Roadside	Y-Lewisham AQMA	9	0.7	2.4	NO_2	N
SSDT_51	110 Drakefell Road	542142	176126	Roadside	Y-Lewisham AQMA	2	1.4	2.4	NO_2	N

1.2 Comparison of Monitoring Results with AQOs

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

Table D. Annual Mean NO₂ Ratified and Bias-adjusted Monitoring Results

Site ID	Site type	Valid data capture for monitoring period %[a]	Valid data capture 2021 %[b]	2015	2016	2017	2018	2019	2020	2021
LW1	Urban Background (Automatic)	86.8	80.2	**43.0**	**44.0**	**43.1**	37.5	33.3	28.6	25.6
LW6	Roadside (Automatic)	95.0	11.6	-	-	-	-	-	-	n/a
LW2	Roadside (Automatic)	58.2	58.2	**47.0**	**46.0**	**48.9**	**42.1**	37.9	29.1	32.4
LW4	Roadside (Automatic)	99.4	99.4	**51.0**	**58.0**	**53.9**	**46.4**	**42.8**	35.6	35.4
LW5	Urban Background (Automatic)	97.1	97.1	-	-	-	-	-	18.7	19.7
HP1	Urban Background (Automatic)	89.9	89.9	-	-	-	-	24.1	16.1	17.2
L1	Roadside	100.0	100.0	33.1	34.3	31.6	29.2	28.2	21.9	21.9
L2	Urban Background	100.0	100.0	28.1	30.3	29.0	25.2	25.7	20.1	19.0
L3	Urban Background	90.4	90.4	34.3	36.3	32.7	30.6	27.4	20.6	20.8
L4	Urban Background	100.0	100.0	34.4	33.6	31.7	28.8	27.7	21.1	20.8
L5	Roadside	100.0	100.0	33.4	36.1	30.0	29.9	27.7	21.8	22.7
L6	Urban Background	100.0	100.0	35.2	34.8	32.2	30.5	27.2	22.1	22.2
L7	Roadside	100.0	100.0	**48.3**	**49.2**	**43.3**	38.2	39.6	32.5	31.1
L8	Roadside	100.0	100.0	**42.2**	**42.4**	38.6	33.5	31.5	24.5	24.8
L9	Roadside	100.0	100.0	37.5	39.6	35.1	36.2	31.9	25.7	25.0
L10	Roadside	100.0	100.0	39.4	**41.5**	37.3	38.0	31.4	24.7	25.2
L11	Roadside	100.0	100.0	36.1	37.4	34.8	33.6	31.2	23.6	26.0
L12	Urban Background	100.0	100.0	26.9	27.9	26.4	25.3	23.7	19.4	18.6
L13	Urban Background	100.0	100.0	27.3	27.3	26.6	23.8	24.4	19.5	17.8
L14	Urban Background	100.0	100.0	29.9	31.1	29.2	26.3	25.8	21.4	20.0
L15	Roadside	100.0	100.0	**46.6**	**45.2**	36.3	33.9	34.0	26.9	24.1
L16	Roadside	100.0	100.0	**48.7**	**50.5**	**44.1**	**40.4**	37.0	29.5	31.6
L17	Roadside	75.1	75.1	**50.6**	**52.1**	**48.9**	**42.3**	38.6	27.7	30.2
L18	Roadside	82.5	82.5	**49.1**	**50.8**	**48.9**	**42.4**	37.7	30.1	32.1

Site ID	Site type	Valid data capture for monitoring period %[a]	Valid data capture 2021 %[b]	2015	2016	2017	2018	2019	2020	2021
L19	Roadside	66.6	66.6	**49.7**	**52.4**	**48.9**	**43.0**	38.1	28.1	29.1
L20	Roadside	82.5	82.5	**43.2**	**42.8**	38.6	37.7	34.3	25.6	24.3
L21	Roadside	100.0	100.0	**50.3**	**51.5**	**49.7**	**41.2**	39.8	30.1	28.0
L22	Urban Background	100.0	100.0	30.3	31.3	31.9	28.1	25.5	22.0	19.8
L23	Roadside	100.0	100.0	**51.8**	**49.9**	**44.5**	**43.1**	38.7	29.9	28.4
L24	Urban Background	92.3	92.3	32.4	34.6	33.3	32.8	29.9	24.1	23.0
L25	Urban Background			23.3	25.0	23.1	-	-	-	-
L26	Roadside	89.9	89.9	**47.2**	**46.4**	**43.5**	39.0	36.0	29.8	28.6
L27	Roadside	82.7	82.7	**57.1**	**55.3**	**52.4**	**43.5**	39.5	31.2	30.5
L28	Roadside	100.0	100.0	**58.6**	**58.1**	**55.5**	**46.3**	**41.0**	33.4	31.0
L29	Roadside	100.0	100.0	28.6	30.3	29.0	28.1	24.4	20.4	19.6
L30	Roadside	100.0	100.0	32.3	31.3	28.1	28.7	26.3	19.7	18.7
L31	Urban Background	100.0	100.0	23.5	26.2	24.4	25.9	21.2	17.8	17.4
L32	Urban Background	90.1	90.1	28.6	33.0	28.4	27.4	25.6	20.7	19.7
L33	Roadside	100.0	100.0	**41.8**	**44.6**	**40.7**	38.2	33.2	28.2	26.9
L34	Urban Background	100.0	100.0	27.0	27.6	26.4	23.8	24.2	18.3	17.2
L35	Roadside	100.0	100.0	-	-	31.3	27.1	25.9	19.9	19.7
L36	Roadside	100.0	100.0	-	-	**43.1**	39.2	37.0	26.3	25.4
L37	Urban Background	100.0	100.0	-	-	29.2	27.4	25.3	19.6	19.7
L38	Roadside	92.3	92.3	-	-	-	29.7	30.6	22.5	21.7
L39	Roadside	100.0	100.0	-	-	-	30.0	29.0	22.8	21.2
L40	Urban Background	100.0	100.0	-	-	-	23.7	22.7	17.7	17.7
L41	Urban Background	89.9	89.9	-	-	-	24.0	23.2	17.6	17.2
L42	Urban Background	100.0	100.0	-	-	-	26.8	26.7	20.6	20.1
L43	Urban Background	100.0	100.0	-	-	-	26.6	27.5	20.2	20.2
L44	Roadside	100.0	100.0	-	-	-	35.2	32.8	26.1	26.3
L45	Roadside	100.0	100.0	-	-	-	33.4	28.5	20.4	19.8
L46	Urban Background	100.0	100.0	-	-	-	24.9	24.7	18.8	17.9
L47	Roadside	100.0	100.0	-	-	-	27.5	24.8	20.4	17.7
L48	Urban Background	100.0	100.0	-	-	-	27.3	25.8	20.4	20.3
L49	Urban Background	100.0	100.0	-	-	-	27.4	24.0	20.3	20.6
L50	Urban Background	100.0	100.0	-	-	-	24.3	21.8	17.8	16.6
L51	Roadside	100.0	100.0	-	-	-	**53.5**	**44.9**	34.0	33.3
L52	Roadside	100.0	100.0	-	-	-	33.2	33.3	27.3	24.2
L53	Urban Background	100.0	100.0	-	-	-	22.7	20.9	15.9	16.8
SSDT_1	Roadside	100.0	100.0	-	-	-	-	-	22.5	23.3

Site ID	Site type	Valid data capture for monitoring period %[a]	Valid data capture 2021 %[b]	2015	2016	2017	2018	2019	2020	2021
SSDT_2	Roadside	77.0	77.0	-	-	-	-	-	-	20.0
SSDT_3	Roadside	100.0	100.0	-	-	-	-	-	21.5	22.6
SSDT_4	Roadside	100.0	100.0	-	-	-	-	-	24.4	25.5
SSDT_5	Roadside	100.0	100.0	-	-	-	-	-	19.6	21.1
SSDT_6	Roadside	74.2	74.2	-	-	-	-	-	22.6	21.3
SSDT_7	Roadside	100.0	100.0	-	-	-	-	-	24.6	24.5
SSDT_8	Roadside	100.0	100.0	-	-	-	-	-	25.5	24.5
SSDT_9	Roadside	100.0	100.0	-	-	-	-	-	19.2	18.8
SSDT_10	Roadside	92.3	92.3	-	-	-	-	-	27.5	27.3
SSDT_11	Roadside	89.9	89.9	-	-	-	-	-	17.7	17.4
SSDT_12	Roadside	92.1	92.1	-	-	-	-	-	26.4	25.3
SSDT_13	Roadside	89.9	89.9	-	-	-	-	-	20.9	19.7
SSDT_14	Roadside	100.0	100.0	-	-	-	-	-	17.6	20.7
SSDT_15	Roadside	92.1	92.1	-	-	-	-	-	22.2	22.7
SSDT_16	Roadside	100.0	100.0	-	-	-	-	-	21.9	20.7
SSDT_17	Roadside	100.0	100.0	-	-	-	-	-	18.5	18.1
SSDT_18	Roadside	100.0	100.0	-	-	-	-	-	20.3	20.0
SSDT_19	Roadside	100.0	100.0	-	-	-	-	-	16.7	18.5
SSDT_20	Roadside	100.0	100.0	-	-	-	-	-	23.4	22.5
SSDT_21	Roadside	100.0	100.0	-	-	-	-	-	20.9	18.6
SSDT_22	Roadside	100.0	100.0	-	-	-	-	-	24.9	25.6
SSDT_23	Roadside	100.0	100.0	-	-	-	-	-	19.3	18.5
SSDT_24	Roadside	100.0	100.0	-	-	-	-	-	22.1	23.0
SSDT_25	Roadside	100.0	100.0	-	-	-	-	-	21.3	22.8
SSDT_26	Roadside	100.0	100.0	-	-	-	-	-	26.3	24.3
SSDT_27	Roadside	92.1	92.1	-	-	-	-	-	19.1	18.5
SSDT_28	Roadside	100.0	100.0	-	-	-	-	-	25.5	25.3
SSDT_29	Roadside	100.0	100.0	-	-	-	-	-	17.8	18.2
SSDT_30	Roadside	92.3	92.3	-	-	-	-	-	20.9	20.2
SSDT_31	Roadside	100.0	100.0	-	-	-	-	-	17.6	17.0
SSDT_32	Roadside	100.0	100.0	-	-	-	-	-	20.5	18.2
SSDT_33	Roadside	100.0	100.0	-	-	-	-	-	19.8	19.8
SSDT_34	Roadside	100.0	100.0	-	-	-	-	-	19.1	18.2
SSDT_35	Roadside	92.1	92.1	-	-	-	-	-	17.8	18.1
SSDT_36	Roadside	100.0	100.0	-	-	-	-	-	17.4	15.3
SSDT_37	Roadside	100.0	100.0	-	-	-	-	-	29.5	28.7

Site ID	Site type	Valid data capture for monitoring period %[a]	Valid data capture 2021 %[b]	2015	2016	2017	2018	2019	2020	2021
SSDT_38	Roadside	100.0	100.0	-	-	-	-	-	17.4	15.8
SSDT_39	Roadside	89.9	89.9	-	-	-	-	-	19.3	18.3
SSDT_40	Roadside	90.4	90.4	-	-	-	-	-	25.1	22.5
SSDT_41	Roadside	100.0	100.0	-	-	-	-	-	29.9	30.9
SSDT_42	Roadside	84.9	84.9	-	-	-	-	-	25.3	24.3
SSDT_43	Roadside	100.0	100.0	-	-	-	-	-	17.8	16.9
SSDT_44	Roadside	92.9	92.9	-	-	-	-	-	16.6	14.5
SSDT_45	Roadside	89.9	89.9	-	-	-	-	-	17.6	17.5
SSDT_46	Roadside	100.0	100.0	-	-	-	-	-	21.4	20.5
SSDT_47	Roadside	100.0	100.0	-	-	-	-	-	25.2	24.4
SSDT_48	Roadside	100.0	100.0	-	-	-	-	-	20.1	20.7
SSDT_49	Roadside	100.0	100.0	-	-	-	-	-	19.0	17.4
SSDT_50	Roadside	100.0	100.0	-	-	-	-	-	-	17.9
SSDT_51	Roadside	100.0	100.0	-	-	-	-	-	28.0	28.2

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%.

Results have been distance corrected where applicable.

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

(b) data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%). Data for HP1 is provisional at this stage and has not been ratified.

Automatic Monitoring Results

The 2021 annual mean NO_2 concentrations at automatic monitoring sites overall exhibited a continuation of the decreasing trend observed over the seven-year period between 2015 to 2021. For the sites LW1, LW2 and LW4, the average decrease was 34% for the seven-year period. Monitoring sites LW2, LW5 and HP1 recorded a higher annual mean concentration in 2021 in comparison to 2020. In 2021, monitoring site LW4 had a similar annual mean concentration as 2020; and only monitoring site LW1 showed a 10.5% decrease in annual mean concentration in comparison to 2020. LW6 became operational end of 2021, and thus had no historical data to demonstrate a temporal pattern; however, it had an annual mean concentration for 2021 below the annual mean NO_2 AQO of 40 µg m^{-3} (24.6 µg m^{-3}). In 2021, all monitoring sites measured annual mean concentrations below the AQO.

Diffusion Tube Results

No diffusion tube locations exceeded the annual mean NO_2 AQO of 40 µg m^{-3} during 2021. L51 (Brownhill Road) measured the highest annual mean concentration at 33.3 µg m^{-3}. Within the additional 51 tubes that were added to the network in September 2020, the highest value recorded at these new locations was at SSDT_41 (Stanton Way) with an annual mean concentration of 30.9 µg m^{-3}. 66% of the monitoring sites in 2021 had lower NO_2 concentrations when compared to 2020. On average, the decrease between 2015 and 2021 at diffusion tube sites was 38% for the seven-year period. All monitoring locations measured an overall decreasing trend in annual mean NO_2 concentrations since 2015. For example, the triplicate tubes L17, L18, and L19, co-located with automatic monitoring station LW2 (New Cross), measured an overall decreasing NO_2 trend over the seven-year period (39%), albeit with some yearly variations. 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} and there have been no exceedances at roadside locations since 2019. On average, annual mean NO_2 concentrations at both roadside and urban background monitoring locations have decreased between 2015 and 2021 by an average of 42% and 34% respectively for the seven-year period. A breakdown of the changes seen each year between 2015 and 2021 is shown in Appendix C.

Table E.   NO$_2$ Automatic Monitoring Results: Comparison with 1-hour Mean Objective, Number of 1-Hour Means > 200 µg m^{-3}

Site ID	Valid data capture for monitoring period %([a])	Valid data capture 2021 %([b])	2015	2016	2017	2018	2019	2020	2021
LW1	86.8	80.2	0	0	0	0	0	0	0
LW6	95.0	11.6	-	-	-	-	-	-	n/a
LW2	58.2	58.2	7	0	0	0	0	0	0 (82)
LW4	99.4	99.4	0	9 (184)	4	0	0	0	0
LW5	97.1	97.1	-	-	-	-	-	0	0
HP1	89.9	89.9	-	-	-	-	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%)

In 2021, there were no exceedances of the hourly mean NO$_2$ AQO of 200 µg m^{-3} at any of the six automatic monitoring locations. In the past seven years, there was no discernible trend, although all monitoring locations have tended to remain below the AQO of 200 µg m^{-3} fewer than 18 times per year since 2015, and there have been no hours with concentrations greater than 200 µg m^{-3} in the last four years. The urban background monitoring site LW1 has not measured an exceedance of the hourly AQO value of 200 µg m^{-3} since pre-2014. LW2, a roadside site, has only recorded hourly concentrations greater than 200 µg m^{-3} once during the seven-

year period, in 2015 (7 hours). LW4 has achieved compliance with the hourly mean AQO since 2014, and from 2018 onwards it has not seen any hourly means exceeding 200 µg m^{-3}. As they are recently commissioned sites, HP1, LW5 and LW6 have no temporal trend; however, neither site recorded an hourly mean over 200 µg m^{-3} in 2021.

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

Site ID	Valid data capture for monitoring period %([a])	Valid data capture 2021 %([b])	2015	2016	2017	2018	2019	2020	2021
LW2	41.7	41.7	23	24	22.8	21.2	19.8	19.0	21.2
LW4	93.4	93.4	17	26	20.9	18.6	20.3	18.5	19.0
HP1	96.8	96.8	-	-	-	-	14.7	13.8	13.6

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 2021, all three monitoring sites measured annual mean PM$_{10}$ concentrations well below the AQO of 40 µg m^{-3}. In 2021, the highest annual mean concentration was measured at LW2, with a concentration of 21.2 µg m^{-3}. Nevertheless, over the entire seven-year period between 2015 and 2021, 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. PM$_{10}$ Automatic Monitoring Results: Comparison with 24-Hour Mean Objective, Number of PM$_{10}$ 24-Hour Means > 50 µg m^{-3}

Site ID	Valid data capture for monitoring period %[a]	Valid data capture 2021 %[b]	2015	2016	2017	2018	2019	2020	2021
LW2	41.7	41.7	8	9	11	4	9	5 (30)	2 (71)
LW4	93.4	93.4	1	18 (47)	7	1	9	8	3
HP1	96.8	96.8	-	-	-	-	7	4	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%).

In 2021, LW4 measured 3 instances where the 24-hour mean was greater than the AQO value of 50 µg m^{-3}, whereas HP1 had no instances above this value during the year and LW2 had 2 instances. However, these are well below the 35 permitted, meaning all monitoring stations achieved compliance with the 24-hour mean AQO. There has been a decrease in the number of 24-hour means greater than the AQO threshold value compared to 2020 at all sites. The highest recorded number of days where the monitored concentration was greater than the AQO objective value was 18 days at LW4 in 2016.

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

Site ID	Valid data capture for monitoring period %[a]	Valid data capture 2021 %[b]	2015	2016	2017	2018	2019	2020	2021
LW2	40.1	40.1	15.5	18.9	15.5	15.0	15.0	12.6	13.9
HP1	96.8	96.8	-	-	-	-	9.9	8.7	8.8
LW5	72.2	72.2	-	-	-	-	-	8.8	10.1

Notes

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

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

All means have been "annualised" in accordance with LLAQM Technical Guidance, if valid data capture is less than 75% and more than 25%.

(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. In 2021, all sites measured annual mean concentrations below the annual mean PM$_{2.5}$ AQO value of 25 µg m^{-3}. LW2 measured the highest annual mean concentration in 2021 at 13.9 µg m^{-3}.

1.3   Addressing PM$_{2.5}$ in Lewisham

LBL supports the Mayor of London's commitment to meet the World Health Organisation (WHO) guidelines for PM$_{2.5}$ which is more ambitious than the goal in the new national Clean Air Strategy. Currently PM$_{2.5}$ limit levels in UK are working towards the WHO Global Air Quality Guidelines which is 10 µg m^{-3}. In 2021, the WHO has introduced a more stringent target of 5 µg m^{-3} as an annual mean concentration. Conscious that this will be a difficult task for many countries and regions struggling with high air pollution levels, WHO has proposed interim targets to facilitate stepwise improvement in air quality and thus gradual, but meaningful, health benefits for the population. The previous WHO concentration of 10 µg m^{-3} is now an interim target to be met by 2030 as suggested by the Mayor.

Unlike other pollutants, such as NO$_2$, a large percentage of PM$_{2.5}$ in London comes from regional, and often trans-boundary (non-UK) sources. Therefore, the powers to tackle these emissions involves London, the UK and other European governments which can make it more difficult to address with direct measures. The Mayor of London stated that approximately half of PM$_{2.5}$ in London is from sources outside the city[2]. The main sources of PM$_{2.5}$ emissions in London are from tyre and brake wear, construction and wood burning.

LBL supports the Mayor's objective to work with European institutions, other European cities, and city networks to ensure that trans-boundary pollution affecting London is minimised and ensuring strong source control measures and regulations are adopted at EU level. The following interventions have been welcomed within Lewisham:

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[2] *https://www.london.gov.uk/press-releases/mayoral/every-londoner-is-exposed-to-dangerous-toxic-air#:~:text=Around%20half%20of%20PM2.,wear%2C%20construction%20and%20wood%20burning* .

- Real-world driving emissions testing, type-approval process arrangements, tyre and brake wear, and new emission standards (for example Euro 7).

- The introduction of the central London Ultra-Low Emission Zone (ULEZ) and cleaning up the bus and taxi fleets. The ULEZ covers most of inner London, having been expanded to include everywhere within the north and south circular roads. In October 2021, the operating area of the zone was expanded to 18 times its original size. On 20 May 2022, Transport for London (TfL) launched a consultation on proposals to further expand the ULEZ London-wide from August 2023.

- Encourage the reduction of the number of trips made by vehicle and encourage walking, cycling and public transport where possible, as laid out in the Mayor's Transport Strategy.

- Reduce emissions from biomass burning (including domestic wood burning); construction, with emissions from NRMM; and from cooking (including commercial cooking); and

- Government policies with greater ability to reduce $PM_{2.5}$ emissions from road transport as detailed the London Environment Strategy and Mayor's Transport Strategy[3].

The Government's goal is to reduce the number of people exposed to $PM_{2.5}$ above the WHO target by 50% by 2025. If achieved this would still leave many Londoners and Lewisham`s residents exposed to the health effects of high levels of pollution.

LBL will focus on reducing and monitoring $PM_{2.5}$ over the course of the 2022-2027 Air Quality Action Plan.

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[3] *Mayor of London, (2018); Mayor's Transport Strategy.*

Our intention is still to work with other authorities towards meeting the 10 µg m^{-3} annual mean concentration by 2030 and to adhere to any legally binding targets to reduce all UK concentrations of PM$_{2.5}$ to WHO recommended levels by 2030, should these be implemented. The new guideline of 5 µg m^{-3} will be re-considered when the new UK Air quality strategy has been published.

2. Action to Improve Air Quality

2.1 Air Quality Action Plan Progress

Table J provides a brief summary of London Borough of Lewisham's progress against the Air Quality Action Plan, showing progress made this year. New projects which commenced in 2021 are shown at the bottom of the table.

Table J.   Delivery of Air Quality Action Plan Measures

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
1	Emissions from developments and buildings	Ensuring emissions from construction are minimised	Emissions from buildings account for about 15% of the NO_X emissions across London so are important in affecting NO_2 concentrations. Key benefits include: • Flexible and can ensure developments are best practice even at long-running developments; • Clear requirements of, and a level playing field for all, developers; and • Less effort for the borough as construction dust management plans do not need to be checked in detail at the planning stage. Public consultation on Draft Local Plan: Main Issues and Preferred Approaches document (Regulation 18 stage) carried out from January to April 2021. Consultation feedback is being considered and used to inform the Local Plan Proposed Submission Document (Regulation 19 stage), which is scheduled for public consultation in summer or autumn 2022. Adoption targeted for 2023.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			LBL is part of a pan-London project Mayor's Air Quality Fund (MAQF) Non-Road Mobile Machinery Zone enforcement – to inspect construction sites in every borough to ensure they are using the cleanest construction equipment.
2	Emissions from developments and buildings	Ensuring enforcement of Non-Road Mobile Machinery (NRMM) air quality policies	Register of NRMM are still secured in planning conditions with Construction Environmental Management Plans (CEMPs). Data on number of planning applications with NRMM condition and also data on enforcement. Aim to register all major developments for NRMM by December 2023. Key benefits include: • NRMM used in construction currently accounts for approximately seven per cent of NOx and eight per cent of PM10 emissions in London therefore, regular enforcement (education) ensures those operators who comply see the benefits in continuing to do so; • Pollution is transboundary; therefore, compliance could result in reduced emissions on sites outside of London as operators are pushed to procure cleaner equipment; • Minimises exposure of residents near developments; and

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			• Current applicable standards were progressed to stage IV and IIIB respectively in 2020, with further tightening of the standards is planned in 2025 and 2030. 2021 MAQF NRMM project output for Lewisham is appended to this report. Negative impacts/complaints: • Hard enforcement is still currently difficult to implement and compliant NRMM is not currently readily available. Therefore, it is proposed that the GLA produce a database of suppliers' of NRMM.
3	Emissions from developments and buildings	Enforcing alternative clean and efficient energy supplies (to replace Enforcing Combined Heat and Power (CHP) and biomass air quality policies)	Public consultation on Draft Local Plan: Main Issues and Preferred Approaches document (Regulation 18 stage) carried out from January to April 2021. Consultation feedback is being considered and used to inform the Local Plan Proposed Submission Document (Regulation 19 stage), which is scheduled for public consultation in summer or autumn 2022. Adoption targeted for 2023. In February 2019, the Council agreed a motion to declare a 'Climate Emergency' and agreed a new action to make the borough of Lewisham carbon neutral by 2030. Lewisham's Climate Emergency Action Plan was approved by our Mayor and Cabinet and published in March 2020 Published Regulation 18 stage public consultation by December 2022. • Number of secondary heat sources integrated into heat networks

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			• Number of existing combustion-based CHP engines removed/replaced with cleaner, lower carbon heat sources; and • Total NOx savings from actions (and PM where biomass is replaced) undertaken in respect to heat networks. Key benefits include: Cheaper and greener heat for local people; Promoting the use of waste heat as part of district heating networks, and minimising the impacts of existing combustion-based CHP plant should reduce any negative impacts on local air quality; Even with abatement equipment fitted standard combustion-based CHP heating systems can produce as much as anywhere from 5 to 170 times the NO_x emissions per kilowatt hour unit of gas/electricity heat generated; Where existing combustion-based CHP systems are replaced, emissions reductions should be simple to calculate – for example "old system annual NO_x emissions" – "new system annual NO_x emissions" = Annual NO_x savings; and Where waste heat is captured and integrated into a heat network to replace an existing heat source then the NO_x savings will be the total NO_x emissions from the heat source being replaced on the network.
4	Emissions from	Enforcing Air Quality Neutral policies	Considered on a site by site basis as new development is proposed. Progress on the production of the Lewisham Local Plan, including completion of technical

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
	developments and buildings		studies, along with preparation of policy proposals. Main Issues and Preferred Approaches document (Regulation 18 stage) carried out from January to April 2022 The draft plan will need to reflect the Air Quality Neutral (AQN) and Air Quality Positive standards, in line with the London Plan.
5	Emissions from developments and buildings	Ensuring adequate, appropriate, and well-located green space and infrastructure is included in new developments	Green infrastructure can provide a source of social, environmental, and mental health Benefits through active travel and wellbeing. More than one fifth of the borough is green space and this includes an 8km long network along the Rivers Thames, Ravensbourne, Quaggy and Deptford Creek. Lewisham parks are among the best in the United Kingdom as 15 green spaces have been recognised by the Green Flag Award Scheme. They include Blackheath, Brookmill Park, Deptford Park and Ladywell Fields. Lewisham Council has been awarded £4.9 million from the Heritage Lottery Fund to improve Beckenham Place Park. Plans include an education centre, restored lake and new sports facilities. The Council adopted it Parks and Open Spaces Strategy 2020-2025.
6	Emissions from developments and buildings	Ensuring that Smoke Control Zones are appropriately identified and fully promoted and enforced	In 2019 a total of 108no Smoke Control Order (2010) complaint were registered by LBL Crime Enforcement and Regulation Team. Data from LBL Crime Enforcement and Regulation Team was not provided in 2020 because of lack of resources. All staff are involved in COVID- enforcement. In 2021, a total of 126no Smoke Control Order (2010) complaint were registered by LBL Crime Enforcement and Regulation Team is as follows: Therefore a small increase can be noted.

Measure	LLAQM Action Matrix Theme	Action	**Progress** • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			• Air Pollution x2 • Bonfire Domestic x 72 • Bonfire Commercial x 19 • Noxious Odour x 17 • Fumes Domestic x 3 • Fumes Commercial x 10 • Smoke Chimney Domestic x 3 The council continue to raise awareness on Smoke Control Zones and carried out enforcement actions as necessary.
7	Emissions from developments and buildings	Promoting and delivering energy efficiency 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.	Lewisham Council delivered heating, insulation and ventilation works in six corporate sites and three schools, cutting carbon emissions at these sites by 270 tonnes a year, funded through a £3.5m grant from the Government's Public Sector Decarbonisation Scheme. £825k funding was secured by the Council under the Green Homes Grant Local Authority Delivery scheme for Lewisham Homes to invest in window upgrades and solid wall insulation benefiting 160 households. 3,395 low income and vulnerable households were supported (as of the end of February 2022) through Lewisham's South London Healthy Homes project, providing practical support to help people at risk of fuel poverty. £125k funding has been secured to drive engagement with private sector landlords and support enforcement of those failing to meet minimum energy efficiency standards.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			Strategic energy-master planning has been completed which will shape future developments and has the potential to support zero carbon heating infrastructure in Catford, Lewisham Town Centre and north Lewisham. Borough of Culture has launched with climate emergency a central theme involving an exciting programme of events including air quality related commissions throughout 2022.
7A	Emissions from developments and buildings	Introduce a requirement for a minimum Energy Performance Certificate (EPC) rating for privately rented sector houses in multiple occupation (HMOs) covered by both the mandatory and additional licensing schemes	We are pursuing our application for Selective Licensing of all private rented properties in most wards. This application has restarted, having been paused during lockdown. We are currently consulting the public and will be preparing the submission to the Secretary of State after this closes on 20th May 2022. If successful, this scheme will require all private rented properties in all but 2 wards to be licensed. We intend to inspect all these properties during the 5 year life of the scheme. Our inspections will focus on removing serious hazards, including damp and excessive cold. We will also check that all rented properties have EPCs to the required standard. We are introducing an additional licensing scheme that will cover most HMOs in the borough that are not required to licence under the national mandatory scheme in April 2022. We will inspect all these properties before they are licensed and will be working with landlords to remove hazards. We require all HMO landlords to produce an EPC as part of the licensing process. We have licensed over 1000 HMOs under the National Mandatory Scheme.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			Our officers signpost landlords to the Housing Improvement Team and the Climate Resilience Team as potential sources of funding for improvements to properties that would make them more energy efficient. Temporary Accommodation has been moved from the PSHA to Housing Needs during a restructure of Housing Services that took place in 2021.
7B	Emissions from developments and buildings	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.	Every assessment for grant funded works is carried out with a view to making the property more energy efficient. Our grant surveyors provide advice to householders about steps they can take to reduce the cost of household energy and reduce their energy usage. The grants team collaborate with the Climate Resilience Team to combine grant funding so that works include those providing energy efficiency to the property as whole in addition to the works funded by DFGs and Home Repair Grants. We are exploring the possibility of training all our Grants surveyors to be EPC assessors.
8	Public health and awareness raising	Ensure that Directors of Public Health (DPHs) have been fully briefed on the scale of the problem in the local authority area, what is being done, and what is needed.	The ASR was presented, discussed and signed off at the Lewisham Health Protection Committee meeting. The ASR will be presented to the DMT for Community Services on May 2022 and signed off. The DPH sits in both the groups. The DPH is represented at both Lewisham Air Quality Working and Strategic groups. Our Councillors are all very engaged with the Air Quality work in Lewisham. We will continue to look for additional source of funding to enhance the measures described.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
8A	Public health and awareness raising	The Council's political leadership will champion the issue of air quality inside and outside of the borough.	The School Air Quality Champion Pilot is a volunteer programme organised by Lewisham Council to engage members of the local school community to help in raising awareness of local air quality issues and to encourage others and assist in the reduction of local air pollution. Councillor Samantha Latouche was the Air Quality Champion for Lewisham Council. The current Air Quality Champion is Yemisi Anifowose. Some of our councillors sit on the AQ working group and are very engaged with the Air Quality work in Lewisham.
9	Public health and awareness raising	Public Health Teams should be supporting engagement with local stakeholders (businesses, schools, community groups and healthcare providers). They should be asked for their support via the DPH when projects are being developed.	Lewisham was one of the London boroughs which implemented the School Superzone pilot project to create a healthier and safer environment for children within 400m radius around schools to protect children's health. The project by Lewisham Public Health Team encouraged healthy behaviours through interventions that target unhealthy food and drink sales; advertisements; alcohol; smoking; gambling; air quality; physical inactivity and crime. Air quality had top priority for this piece of work with Haseltine Primary School and Public Health Team engaged with local businesses, community groups and healthcare providers. Another round of GLA funded Superzone project is coming.
10	Public health and awareness raising	Director of Public Health to have responsibility for ensuring their Joint Strategic Needs Assessment (JSNA)	Joint Strategic Needs Assessment (JSNA) for Air Quality was refreshed and signed off by the JSNA Steering Group and was published in February 2018. The JSNA will be reviewed in 2022 and refreshed as per the decision by the AQ Strategy Group.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		has up to date information on air quality impacts on the population.	
11	Public health and awareness raising	Strengthening co-ordination 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.	Lewisham Health Protection Committee (HPC) is chaired by a Consultant in Public Health nominated by the DPH. The DPH is well briefed on air quality issues and updates. The HPC reports to Health and Wellbeing Board and meets twice a year.
12	Public health and awareness raising	Director of Public Health to sign off Statutory Annual Status Reports and all new Air Quality Action Plans.	The statutory ASR is normally presented and discussed at the DMT for Community services before it is presented and signed at the Health Protection Committee meeting. The DPH sits in both the groups.
13	Public health and awareness raising	Ensure Head of Transport fully briefed along with all Directors responsible for delivering air quality actions. Briefing to	The Steering Group will meet on a regular basis to provide ongoing briefing. Transport team works closely with the Lewisham Air Quality Working and Strategic Groups. The transport team is instrumental in organising sustainable transport initiatives/schemes and infrastructure to support transition away from

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		disseminate amongst transport team.	car use. It also supports the provision of electric vehicle charging infrastructure, as an option where the car is used.
14	Public health and awareness raising	Engagement with businesses.	As the lead authority for Defra funded, Cleaner Air Villages (CAV) that support businesses in reducing pollution and congestion, Public health led the liaison with Lewisham Hospital in deliveries and in Deptford High Street for use of cargo bikes. 1-2-1 business engagement took place in Lewisham Town Centre in 2020. It was anticipated, following a workshop due to be held in March 2020 (discussed below), further 1-2-1 meetings would take place to discuss business' involvement in the solution for this village. Unfortunately, both the workshop and any potential 1-2-1s were impacted by the COVID-19 lockdown. CAV4 will build on the successes of the award winning CAV1 programme, as well as CAV2 and CAV3 which all focused on interventions to support businesses, communities and hospitals. CAV4 aims to deliver ambitious Freight Solutions for a Clean Air business recovery from COVID 19. The program is still ongoing.
15	Public health and awareness raising	Promotion of availability of airTEXT and Lewisham Air App.	As before, Public Health is still promoting the Lewisham Air App through Lewisham Clinical Commissioning Group (CCG) to raise awareness, so that the GPs promote the app to Chronic obstructive pulmonary disease (COPD) and Asthma patients and their careers. The App is also promoted to the respiratory nurses as well to raise awareness amongst COPD & Asthma patients. This was launched in March 2018.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			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.
16	Public health and awareness raising	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.	STARS project continues to be a priority in Lewisham, the school travel plan mode share will be monitored and comparative data from previous years will be made. Use will be made of TFL City Planning guides and routes with higher walking potential will be considered for additional work and focus. As part of its work to address air pollution, the Council is installing signs urging drivers to switch their engines off when parked outside local schools across the borough and reminding them of enforcement action that can be taken against them if they continue to engine idle. The Council introduced an £80 fine for engine idling in 2019 to deter drivers from leaving their engines running. In 2021, School Travel Plans (STPs) that were expiring were given a year's extension at their current accreditation level due to the pandemic. We are currently engaging with schools to continue their commitments to their plans. 2021 TfL's STARS schools accreditation was as follows: • 9 gold schools

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			• 3 silver schools and • 0 bronze schools The STP programme was frozen by TfL in end 2021 and the schools accreditations were therefore extended until June/July 2022.
17	Public health and awareness raising	Air quality at schools	No change: Review ongoing opportunities for School engagement through the school action plan period. Targeting schools where air quality is poorest. This will involve working directly with parents and staff to produce individual school air quality/travel plan that encourage active travel. • This will include 121 support with schools and delivery of walking campaigns. • Work with TfL to incorporate Air Quality awareness into JTA and STARS programmes. • Engage in existing and future GLA's AQ Schools Audit Initiative. • Review monitoring at schools. • Subject to staffing resources provide presentations at schools on how to improve air quality and actions to take on high pollution days.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			• Identify further projects within schools with AQ in Focus Areas (see figure A.12). • Identify further projects within schools with AQ in Focus Areas (see figure A.12). • Investigate strategic partnership opportunities e.g. Trees for Cities and Trees for Living (STfL) for green infrastructure.
17A	Public health and awareness raising	Air quality at schools	Cycle training has been carried out at schools throughout 2021, subject to Covid restrictions. However, the children of key workers attending school were still offered training. Dr Bikes sessions have been run at schools to help support families.
18	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.	The Procurement team have been promoting the Social Value Policy and encouraging stakeholders to include this in all suitable procurements. The Highways team are preparing a new tender for Highways and Footways. FORS will be included in this tender. This will be issued financial year 2021/22. Textile Bring Bank Collection specification stipulated that the Vehicles used to perform the Service must meet the minimum Euro Emissions Standard. The appointed Contractor will need meet relevant legislation for vehicle emissions such as the Ultra-Low Emission Zone. All project tenderers have the following statement included in the Sustainable code of Practice which contractor are asked to agree to - "All vehicles used in the road for the transportation of products must comply with the requirements of the both the London Emission Zone (LEZ) and the Ultra-Low Emission Zone (ULEZ). When awarding transport related contracts, the Council will give preference to organisations that are members of the Fleet

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			Operator Recognition Scheme (FORS)." The Textile Bring Bank collection, Garden and organic waste suppliers will incorporate this.
19	Delivery servicing and freight	Update procurement policies to ensure sustainable logistical measures are implemented (and include requirements for preferentially scoring bidders based on their sustainability criteria).	"The Procurement team have been promoting the Social Value Policy and encouraging stakeholders to include in their procurements. Procurement and stakeholders will together monitor whether the social value stipulations may increase costs going forward. Currently impact of Covid, Brexit and Ukraine / Russian conflict is impacting on all cost and it therefore is not currently possible to ascertain if any specific increase is due to the inclusion of Social Value. KPIs: • Inclusion of Air Quality considerations in updated Procurement Strategy by end of 2020; • Rigorous vehicle standards included within procurement policies; and • Number of contracts with air quality requirements included.
20	Delivery servicing and freight	Re-organisation of freight to support consolidation (or micro-consolidation) of deliveries, by setting up, or participating in, new logistics facilities, and/or requiring that council suppliers participate in these.	Reduces the number of Heavy Goods Vehicles (HGVs) used for all the sites incorporated in the project, with benefits for air quality. Fosters co-operation between companies that can have benefits elsewhere. The Low Emissions Logistics considers emissions reductions which could be achieved using the efficient deliveries hierarchy to reduce the number of deliveries required by the four local authorities. Monthly NOx emissions were predicted to reduce from around 54kg to around 7kg assuming the deliveries were made using Euro V vehicles. Measures of success could include: • Rigorous vehicle standards included within procurement policies; • Number of contracts with air quality requirements included;

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			• Number of 'last mile' deliveries to borough premises that are ultra-low or zero emission; and • Number of Non-Road Mobile Machinery (NRMM) procured by the local authority that are zero emission or at least compliant with the NRMM Low Emission Zone standards.
21	Delivery servicing and freight	Virtual Loading Bays and priority loading for ultra-low emission delivery vehicles.	No change: As before, this type of traffic restriction remains difficult to implement in the borough. On-street loading facilities are secured as part of the planning process and in FY20/21 we have started to specify EV charging points for new loading facilities. Implementation is planned between 2021-2025. The extended ULEZ moving to the South Circular in October 2021 may give the borough more control on vehicle movements due to the associated infrastructure that brings. We will continue to investigate options for prioritizing Low and zero emission vehicles. This type of traffic restriction remains difficult to implement in the borough.
23	Borough fleet actions	Increasing the number of hydrogen, electric, hybrid, bio-methane and cleaner vehicles in the borough's fleet.	There has been no change to hybrid or electric vehicles to date. The Council continue to operate 25 hybrid petrol/hybrid vehicles and 2 hybrid refuse vehicles. Electric refuse vehicles would be reviewed at next replacement period depending on infrastructure.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
24	Borough fleet actions	Accelerate uptake of new Euro VI vehicles in borough fleet.	67 Euro 6 vehicles have now been acquired, made up of • 24 Refuse vehicles • 40 Buses • 3 Tippers The fleet is 100% ULEZ compliant
25	Borough fleet actions	Smarter Driver Training, or equivalent, for drivers of vehicles in Borough Own Fleet i.e. through training of fuel-efficient driving and providing regular re-training of staff.	The Council has ongoing CPD and training in place to cover legal requirements and best practice. This training is mandatory for vocational drivers (HGV and PSV) and is organised by the environment division not by personnel.
26	Localised solutions	Improvement and Introduction of green spaces in new developments through the Planning process by conditions and S106 obligations.	Urban greening strategies: Still considered on a site by site basis as new development is proposed. Search for funding to support green infrastructure, such as the Community Tree Planting and Green Space Grants which can help support projects to plant trees and improve green spaces, including school playgrounds. www.london.gov.uk/greener-city. Neighbourhood Community Infrastructure Levy (NCIL) projects agreed by Mayor and Cabinet on 09 March 2022. Recommended projects are included local greening projects.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
28	Cleaner transport	Discouraging unnecessary idling by vehicles near schools.	Ongoing resource required from Environmental Protection Team and from Road Safety and Sustainability Team. LBL is part of the MAQF Pan-London idling project which outputs are detailed in the following section. The Idling Action project (including enforcement) spans 27 boroughs as described in the following webpage https://idlingaction.london/ . We are implementing anti idling signage on schools in Lewisham. With up to 75 planned in 2022.
28A	Cleaner transport	Carry out a Council-wide anti-idling campaign discouraging unnecessary idling by idling vehicles	No changes. Public health has been working closely with the environmental protection team on anti-idling work with the pan-London project on anti-idling project being funded by the Mayor of London. As part of its work to address air pollution, the Council is installing signs urging drivers to switch their engines off when parked outside local schools across the borough and reminding them of enforcement action that can be taken against them if they continue to engine idle. The Council introduced an £80 fine for engine idling in 2019 to deter drivers from leaving their engines running Parking is carrying out enforcement via Civil Enforcement Officers (CEOs). A Traffic Management Order has been made, so Penalty Charge Notices (PCNs) can be served. All parking enforcement team now wear hi-vis jackets with 'anti-idling' campaign icon daily. At the point of engine idling, CEOs will first approach motorists and ask to switch off the engine or move. If after 5 mins of the observation period, the motorists do not comply, the CEO will enforce by issuing a PCN.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			Since Jan 2020, there has not been one penalty charge notice (PCN) under Code 63 for parking with engine running where prohibited. School zones are patrolled heavily during pick-up and drop-offs.
29	Cleaner transport	Speed control measures e.g. lowering the legal speed limit to 20mph in built up residential areas	All roads in Lewisham have a 20mph speed limit. Speed reduction measures are intended to improve compliance with these limits and annual speed surveys are undertaken to inform future programmes. The southern section of the Baring Rd scheme has been completed, which included a zebra crossing. A review and refresh of signs and lines has been undertaken at some locations where there are concerns about speed, for example Brockley Road. The Vehicle Activated signs are operational and some additional locations are being progressed. We continue to work with the Police and TfL to increase the level of speed enforcement in the borough.
30	Cleaner transport	Expanding car clubs and increasing the proportion of electric, hydrogen and ultra-low emission vehicles in Car Clubs.	We are Increasing the number of car club bays through Planning process. Work with car clubs towards compliment of electric vehicles.
31	Cleaner transport	Very Important Pedestrian (VIP) Days (e.g. no vehicles on certain roads on a	A small number of car free events took place through 2021. Numbers were limited this year due to Covid restrictions in place. In 2021, 40 school streets were in place in Lewisham. With more schools due to be implemented in Spring 2022. We

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		Sunday) and similar initiatives.	carried out online air quality campaign on car free days in September 2021 and we will be facilitating car free day in 2022 subject to resources. We are currently introducing more School Streets outside local primary schools, which improve air quality and road safety by closing roads outside schools to through-traffic at the start and end of the school day. The signs will be installed over the next few months outside local schools that are currently without School Streets – more School Streets will be introduced in the next school year (i.e. 2022/23).
32	Cleaner transport	Free or discounted parking charges at existing parking meters for zero emission cars.	Emission based short stay parking charges have been introduced and these charges came into effect on 1 March 2022. Further information can be found at https://lewisham.gov.uk/myservices/parking/changes-to-pay-and-display-parking
33	Cleaner transport	Free or discounted residential parking permits for zero emission cars.	An emission based parking scheme came into effect in April 2020 which means that vehicles with higher emissions will be charged a higher permit price.
35	Cleaner transport	Installation of residential electric charge points.	132 electric vehicle lamp column charge points in residential areas have been installed on the ground.
35A	Cleaner transport	Carry out a campaign to promote the use of electric charge points within the borough.	No further campaigns have been undertaken since the communication campaign in March 2017. The Council's Low Emission Vehicle Charging Strategy is due to be refreshed in 2022/23 and this will consider a communications plan.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
36	Cleaner transport	Installation of rapid chargers to help encourage the take-up of electric taxis, cabs and commercial vehicles (in partnership with TfL and/or OLEV).	Due to the pandemic and a reduction in resources expansion of rapid chargers is on hold. Future provision of all types of charging will be considered as part of the update of the Council's Low Emission Vehicle Charging Strategy.
37	Cleaner transport	Reprioritisation of road space; reducing parking at some destinations and/or restricting parking on congested high streets and A-roads to improve bus journey times, cycling experience, and reduce emissions caused by congested traffic.	We are committed to reviewing parking across the borough and are currently developing a CPZ programme which will be considered by Mayor and Cabinet in Autumn 2022.
38	Cleaner transport	Provision of infrastructure to support walking and cycling.	"The Liveable Neighbourhood funding was suspended at the start of the pandemic and therefore delivery of the full scheme has been paused. However, some available funding has been utilised to progress some elements of the scheme which support walking and cycling: - Rolt Street: installation of pedestrian and cycle zone; - Woodpecker Walk: re-surfacing

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			- Scawen Road and Prince Street: making these trial schemes permanent The Lewisham and Lee Green LTN and some individual modal filters have been introduced as part of the Council's Covid-19 emergency transport response to create a quieter and safer area for walking and cycling. The LTN has been reviewed and a decision taken to retain the scheme. The modal filters are continuing to be monitored to inform future decisions. School Streets schemes have been delivered at 40 primary schools to create a safer and quieter environment outside entrance at the start and end of the school day to encourage sustainable and active travel to school. Delivery of cycleway 4 has commenced and will create 1.4km of protected cycle lane and new and improved pedestrian crossings
39	Cleaner transport	Develop a 'stand-alone' Cycling Strategy for the borough.	Due to the pandemic and a reduction in funding resources have been focused on delivering the emergency transport response to the pandemic and supporting the economic recovery. Focus continues to be on delivery of projects to support active and sustainable travel. When the long term funding picture is known this could inform a future cycle strategy.
40	Cleaner transport	Increasing cycle parking.	Seventeen new cycle hangars have been installed in the last year, with almost another thirty having traffic order changes carried out in the next few months to then be installed on site. We current have 106 bike hangars throughout the borough with more planned in 2022.

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
41	GLA AQ Focus Area 127 & parts of 132 Cleaner Transport	Development of a Zonal Construction Logistic Framework for the Evelyn Street Corridor.	The future of the project was in jeopardy due the implication of the pandemic on funding from TFL
44	GLA AQ Focus Area 125 to 133	44 LiP projects.	Resources had to be refocused to support the Council's Covid-19 emergency transport response and the economic recovery from the pandemic therefore progress on this project has not been made. This will be considered as part of the update of the Council's Low Emission Vehicle Charging Strategy.
45	GLA AQ Focus Area 127	Liveable Neighbourhood Scheme 'Deptford Parks'.	"The Liveable Neighbourhood funding was suspended at the start of the pandemic and therefore delivery of the full scheme has been paused. However, some available funding has been utilised to progress some elements of the scheme: - Rolt Street: installation of pedestrian and cycle zone; - Woodpecker Walk: re-surfacing - Scawen Road and Prince Street: making these trial schemes permanent"
46	GLA AQ Focus Area 127	DEFRA Project: 'Cleaner Villages' Business engagement at Deptford High Street, to reduce impact of delivery.	In 2021, further funding was awarded for CAV4 project. CAV4 is a Defra funded AQ project led by Westminster City Council in collaboration with 26 project partners to improve the air quality across different London 'villages', where both air pollution and population density levels are high. CAV4 will build on the successes of the award winning CAV1 programme, as well as CAV2 and CAV3 which all focused on interventions to support businesses, communities and hospitals. CAV4 aims to deliver ambitious Freight Solutions for a Clean Air business recovery from COVID 19.
47	GLA AQ Focus Area 131	DEFRA Project: 'Cleaner Villages' Business engagement	Since 2019 CAV2 program was implemented in Deptford, eco-fleet ran a 3-month business engagement e-cargo bike trial which they engaged around 70 businesses and worked with 7. This was interrupted by COVID and we have a

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
		at Lewisham Town Centre, to reduce impact of delivery.	remaining 3 weeks on the e-cargo bike trial. The link to the project flyer can be found at https://crossriverpartnership.org/wp-content/uploads/2020/03/CAV-village-info-two-pager-Final-Deptford.pdf The Defra Partly funded CV3 was implemented in Deptford High Street. Chosen solution: cargo bike scheme extension for businesses, pharmacies, charities, community groups and food banks. Engagement: 50 businesses contacted by emails, 10 x 1-2-1s and EV interest. Monitoring: CAWR (New Cross Gate to Deptford High Street) A CAV4 Lewisham Cargo Bike project is ongoing.
48	Traffic reduction programme	Healthy Neighbourhood Cell Scheme	"Following the implementation of the Lewisham and Lee Green LTN as part of the Council's Covid-19 emergency transport response the scheme has continued to be monitored and changes made to signs and lines to assist understanding of the scheme. A comprehensive public consultation was undertaken in July 2021 to find out peoples thoughts and experiences of the scheme and inform a decision about the future of the scheme. A report was considered by Mayor and Cabinet in January 2022 which outlined the findings of the monitoring and the public consultation and recommended that the scheme is retained. Full details can be found at https://councilmeetings.lewisham.gov.uk/mgAi.aspx?ID=31225#mgDocuments The Transport Strategy states that Healthy Neighbourhood areas will be re-prioritised at least every 2 years and this process has commenced, taking into

Measure	LLAQM Action Matrix Theme	Action	Progress • Emissions/Concentration data • Benefits • Negative impacts / Complaints
			account the lessons learned from the delivery of the Lewisham and Lee Green LTN."

Lewisham's main air quality achievements in 2021 were:

- The school streets initiative has seen physical measures introduced to these streets to stop car use during school drop off and pick up. 40 school streets were implemented in 2021 and more to follow in 2022;

- Lewisham's Climate Emergency Action Plan was approved by Mayor and Cabinet in 2020 and includes a range of radical actions across the Council's corporate estate, housing, transport and green spaces intended to support delivery of the ambition for Lewisham to be carbon neutral by 2030. We secure over £5m external funding in 2020/21 for carbon reduction, fuel poverty and flooding projects;

- We adopted and published of the Low Emission Vehicle Charging Strategy in 2019 to ensure that everyone in the borough is no further than 500m from an electric vehicle charge point by 2022, then expansion of the electric vehicle charging points throughout the borough to 132 with more planned in 2022.

- We are promoting active travel and we currently have 106 bike hangars installed in Lewisham, with more to be deployed in 2022.

- LBL's Borough of Culture (BoC) successful bid, Cultural Activism, sets out plans to inspire local people to take action on climate change. On 11 February 2020, the Mayor of London announced that Lewisham had been awarded the title of London Borough of Culture for 2021. Due to the Covid-19 pandemic, LBL's year as London BoC will move to 2022. LBL was awarded £1.35m funding to deliver a year-long programme of activities that will place culture at the heart of their communities and celebrate the

unique character of local people and places; Activities and events that put Lewisham and its community in the spotlight as the Mayor's BoC 2022 can be viewed at https://www.wearelewisham.com/.

- As shown in our 2020 and 2021 ASR, the results of the most current diffusion tube monitoring regime and from our four automatic stations show no ratified annual average NO_2 concentrations in excess of 40μg m^{-3}. Since 2015, the downward trend in measured NO_2 annual mean concentrations has continued, with ten in 2017, six in 2018, only two diffusion tubes across all boroughs greater than 40 μg m^{-3} in 2019. The two recorded measurements greater than 40 μg m^{-3} become compliant with the objective after distance correction for relevant exposure in 2019. There were no exceedances in 2020 and 2021.

Lewisham's main priorities to reduce exposure to poor air quality for the year ahead are:

- Work with all stakeholders to start implementing the newly adopted 2022-2027 air quality action plan and reduce air quality around vulnerable receptors,
- Expansion of our air quality monitoring network for a better understanding of air quality spatial distribution, focus areas and management.
- Continue communication and raising public health and awareness: Lewisham has already produced a Joint Strategic Needs Assessment (JSNA) for Air Quality, which will be periodically reviewed. The Public Health and Environmental Protection Teams will work together in raising awareness on air quality issues. Working closely with the LBL's Communications Team, we will use several readily available resources to raising awareness of health impacts of air quality and monitor these health impacts more closely.

- LBL is prioritising the reduction of emissions from road traffic and supports the necessary infrastructure required to support the uptake of ultra-low emission vehicles, to facilitate cycling, walking and the use of public transport. The Council is working with partners to increase the number of electric vehicle charging points accessible to residents and businesses within the borough.

- Lewisham currently has 132 electric vehicle charging points within the borough, accessible to all residents. Usage is continually reviewed, and identification of new locations will consider residents requests.

3. Planning Update and Other New Sources of Emissions

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

Condition	Number
Number of planning applications where an air quality impact assessment was reviewed for air quality impacts	*21*[4]
Number of planning applications required to monitor for construction dust	3[5]
Number of CHPs/Biomass boilers refused on air quality grounds	Nil
Number of CHPs/Biomass boilers subject to GLA emissions limits and/or other restrictions to reduce emissions	Nil
Number of developments required to install Ultra-Low NO_x boilers	10
Number of developments where an AQ Neutral building and/or transport assessments undertaken	19[6]
Number of developments where the AQ Neutral building and/or transport assessments not meeting the benchmark and so required to include additional mitigation	Nil
Number of planning applications with S106 agreements including other requirements to improve air quality	Nil
Number of planning applications with CIL payments that include a contribution to improve air quality	Nil
NRMM: Central Activity Zone and Canary Wharf Number of conditions related to NRMM included. Number of developments registered and compliant. Please include confirmation that you have checked that the development has been registered with the GLA through the relevant NRMM website and that all NRMM used on-site is compliant with Stage IIIB of the Directive and/or exemptions to the policy.	N/A
NRMM: Greater London (excluding Central Activity Zone and Canary Wharf) Number of conditions related to NRMM included. Number of developments registered and compliant. Please include confirmation that you have checked that the development has been registered at www.nrmm.london and that all NRMM used on-site is compliant with Stage IIIA of the Directive and/or exemptions to the policy.	N/A

Lewisham is part of the Pan London NRMM project which aims to reduce emissions from construction sites and almost all major planning applications are now subject to NRMM, air quality and dust conditions. We continue to regulate and help manage and

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[4] 17 Major developments

[5] 15 with Dust Management Plan

[6] 17 Major developments

reduce emissions from developments and buildings by using planning powers to enforce air quality measures, reducing emissions, increase energy efficiency and adoption of Planning Policy that is encouraging car-free developments.

The following extract (Figure 1) from the NRMM End of Financial Year Report by Merton for Lewisham (January 2021 – December 2021) shows the NRMM compliance status of ongoing developments. The total compliance status is compliant and self-compliant combined. LBL achieved a Total compliance status of 54% which has decreased from 78% in 2018, 86% in 2019 and 100% in 2020. A number of sites failed to achieve compliance due to registration failures, had no NRMM active at the time of audit or were found complete on engagement. There are currently 23 sites registered on the GLA NRMM website.

Figure 1: NRMM Compliance Status for LB Lewisham

Engagement Status

Not Cold-Engaged
53%

Cold-Engaged
47%
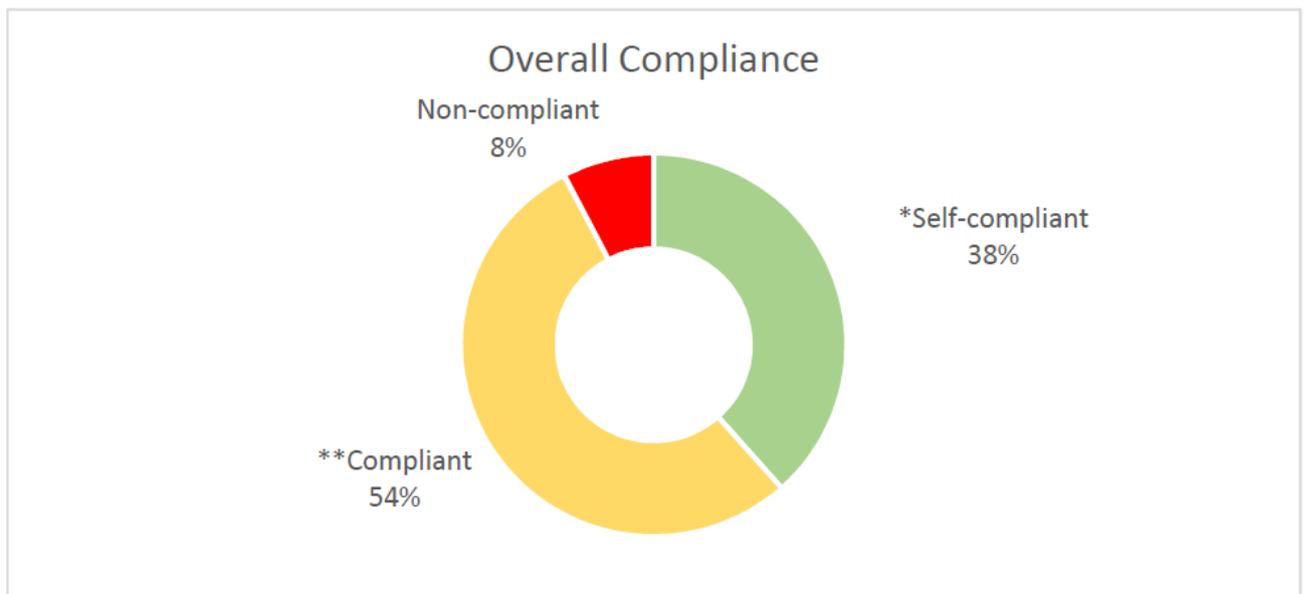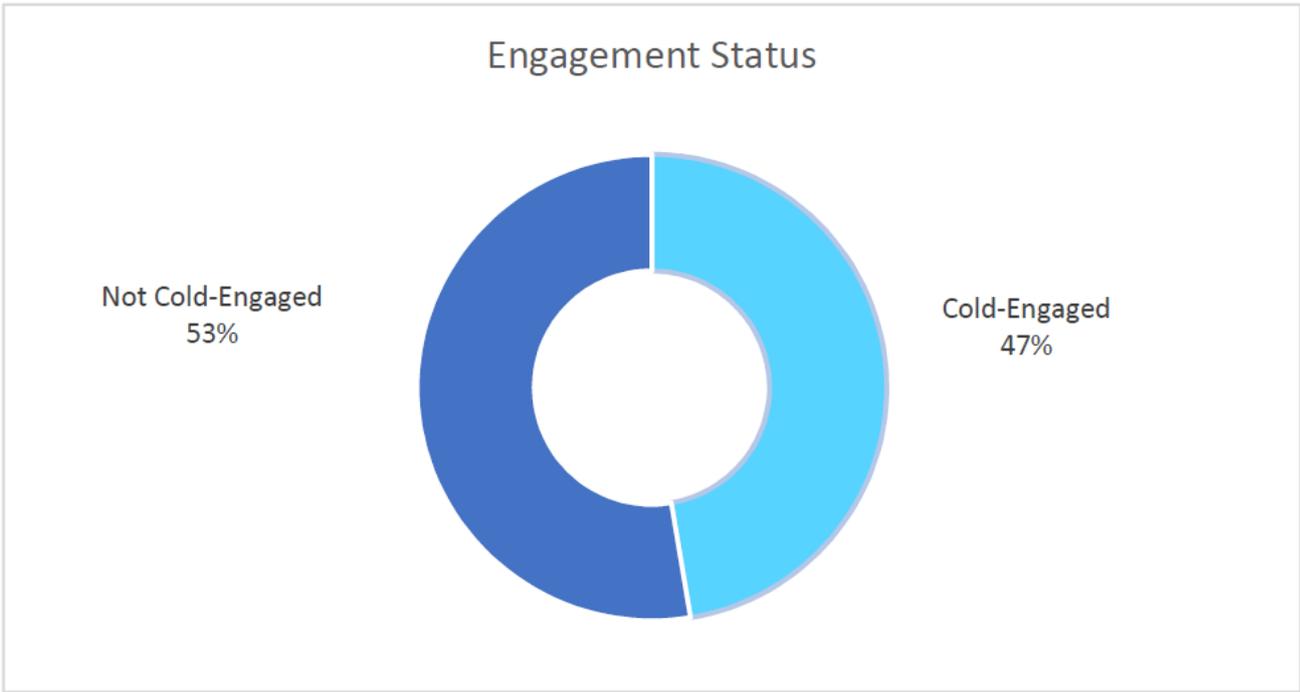
3.1   New or significantly changed industrial or other sources

No new nor significantly changed industrial or other sources were noted in 2021 across Lewisham. Our new parking policy will help address emissions from motorcycles and we will introduce an emissions-based parking for Short Stay Parking and for motorcycles.

4. Additional Activities to Improve Air Quality

4.1 London Borough of Lewisham Fleet

There are currently no zero emission or zero emission capable vehicles in the borough's fleet.

4.2 NRMM Enforcement Project

Lewisham will continue to support the Pan London NRMM project.

4.2 Air Quality Alerts

Lewisham will continue to support airTEXT 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 the GPs promote the app to Chronic obstructive pulmonary disease (COPD) and Asthma patients and their careers. The App is also promoted to the respiratory nurses as well to raise awareness amongst COPD & Asthma patients.

This was launched in March 2018. There are currently more than 2,271 downloads. 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.

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 Authority Officer for LW1 and LW4. At LW2, a nightly auto-calibration is invoked. The calibration data are sent to ERG-King's College London, who are responsible for data management, data validation and ratification. Site audits are carried out 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 LBL 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 percentage of results submitted by Gradko International Ltd that were subsequently deemed to be satisfactory was 25% in AIR-PT Round AR042 (January-March 2021).

National Bias Adjustment Factor

The national bias adjustment factor for 2021 is available from the Defra website[7]. The results of multiple co-location studies are collated, and the average bias adjustment

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[7] Defra, Diffusion Tube Bias Adjustment Factors Spreadsheet, April 2022

factor is taken for studies using the 50% TEA/acetone preparation method, analysed by Gradko. The national bias adjustment factor for 2021 is 0.83, based on 14 studies. 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: 03/22							
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 2022 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 If a laboratory is not shown, we have no data for this laboratory.	Select a Preparation Method from the Drop-Down List If a preparation method is not shown, we have no data for this method at this laboratory.	Select a Year from the Drop-Down List If a year is not shown, we have no data[2]	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 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	2021	UC	Falkirk Council	12	35	34	3.5%	G	0.97
Gradko	50% TEA in acetone	2021	UB	Falkirk Council	12	16	13	22.5%	G	0.82
Gradko	50% TEA in acetone	2021	SU	Redcar & Cleveland Borough Council	11	14	11	29.2%	G	0.77
Gradko	50% TEA in acetone	2021	R	Royal Borough of Windsor and Maidenhead	12	29	26	9.3%	G	0.91
Gradko	50% TEA in acetone	2021	R	Royal Borough of Windsor and Maidenhead	11	26	25	7.2%	G	0.93
Gradko	50% TEA in Acetone	2021	R	Sandwell MBC	12	37	28	31.4%	G	0.76
Gradko	50% TEA in Acetone	2021	UB	Sandwell Metropolitan Borough Council	11	23	19	22.2%	G	0.82
Gradko	50% TEA in acetone	2021	UB	Middlesbrough	12	18	14	32.6%	G	0.75
Gradko	50% TEA in acetone	2021	R	London Borough of Richmond upon Thames	12	24	21	15.1%	G	0.87
Gradko	50% TEA in acetone	2021	B	London Borough of Richmond upon Thames	9	16	13	21.5%	G	0.82
Gradko	50% TEA in acetone	2021	KS	Marylebone Road Intercomparison	10	52	41	24.2%	G	0.81
Gradko	50% TEA in acetone	2021	R	Reading Borough Council	12	30	26	15.9%	G	0.86
Gradko	50% TEA in acetone	2021	R	Merton Council	9	50	32	55.4%	G	0.64
Gradko	50% TEA in acetone	2021	UB	Wandsworth Council	11	29	26	9.8%	G	0.91
Gradko	50% TEA in acetone	2021		Overall Factor[3] (14 studies)					Use	0.83

Factor from Local Co-location Studies

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[8].

Discussion of Choice of Factor to Use

The national bias adjustment factor was chosen in this ASR. The data capture at New Cross (LW2) was poor in 2021, with only 58.2% valid data capture for the whole year. Due to low data capture the local bias adjustment factor was not calculated and the national bias adjustment factor was used.

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[8] Defra, Diffusion Tube Precision Accuracy Bias Spreadsheet, February 2011

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 L details both the local and national bias adjustment factors for this and previous years in LBL and includes the choice of factor used.

Table L.   Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
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
2016	National	03/18	1.03
2015	Local	-	1.02

A.3 Adjustments to the Ratified Monitoring Data

Short-term to Long-term Data Adjustment

Where data capture is less than 75% of a full calendar year (less than 9 months), the mean should be "annualised" – i.e. adjusted using the methodology outlined in LAQM.TG(16) before being compared to annual mean objectives. Annualisation was required at sites L19, LW2 and LW6 due to low data capture.

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 µgm^{-3}, therefore distance correction has not been completed at any site for 2021.

A.4 Adjustments to the Ratified Monitoring Data

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 to Figure A.8, 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).

Figure A.3 Trend in NO$_2$ concentration at roadside diffusion tube locations (1)
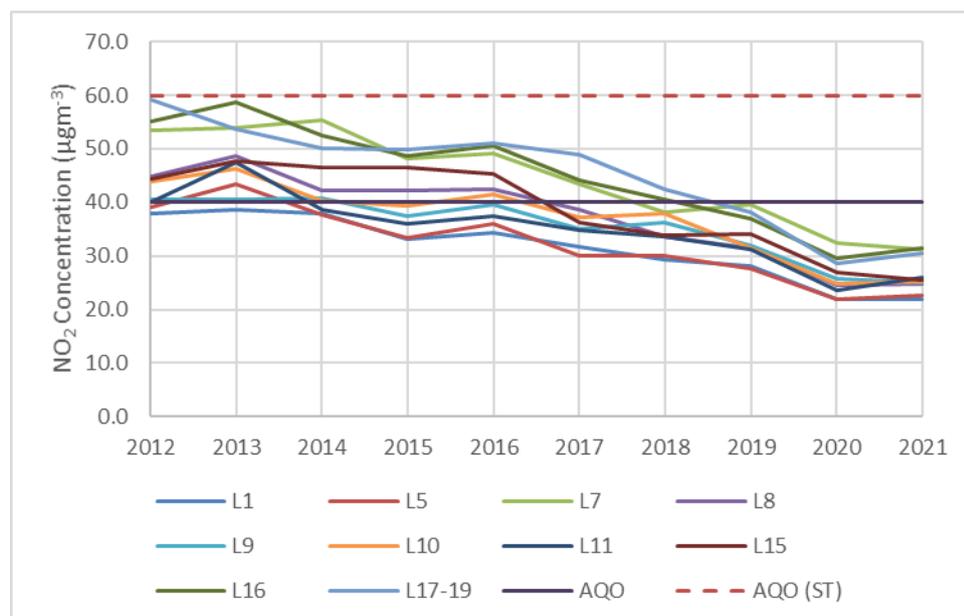
Note: AQO (ST) = 60 µg m^{-3}. Diffusion tubes cannot be used to directly compare against the 1-hour mean NO$_2$ objective. However, LLAQM.TG19 states that at locations where annual mean NO$_2$ concentrations of greater than 60 µg m^{-3} are monitored the 1-hour mean NO$_2$ objective is likely to be exceeded.

Figure A.4 Trend in NO₂ Concentration at roadside diffusion tube locations (2)
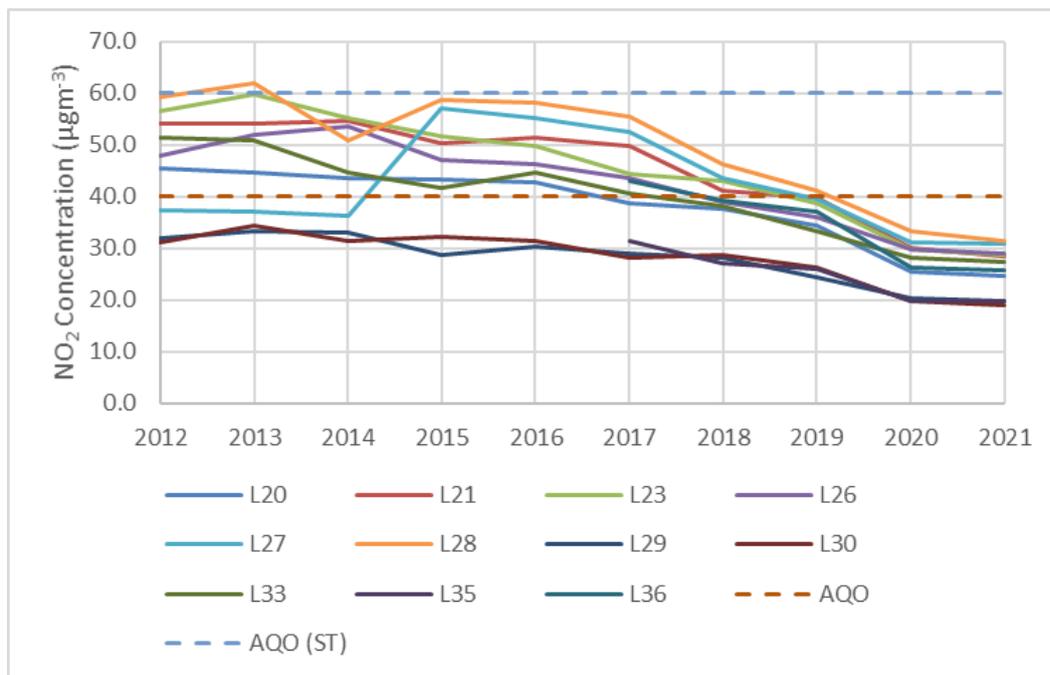
Note: AQO (ST) = 60 µg m⁻³. Diffusion tubes cannot be used to directly compare against the 1-hour mean NO₂ objective. However, LLAQM.TG19 states that at locations where annual mean NO₂ concentrations of greater than 60 µg m⁻³ are monitored the 1-hour mean NO₂ objective is likely to be exceeded.

Figure A.5 Trend in NO₂ concentration at roadside diffusion tube locations (3)

Note: AQO (ST) = 60 µg m⁻³. Diffusion tubes cannot be used to directly compare against the 1-hour mean NO₂ objective. However, LLAQM.TG19 states that at locations where annual mean NO₂ concentrations of greater than 60 µg m⁻³ are monitored the 1-hour mean NO₂ objective is likely to be exceeded.

Figure A.6 Trend in NO₂ concentration at urban background diffusion tube locations (1)
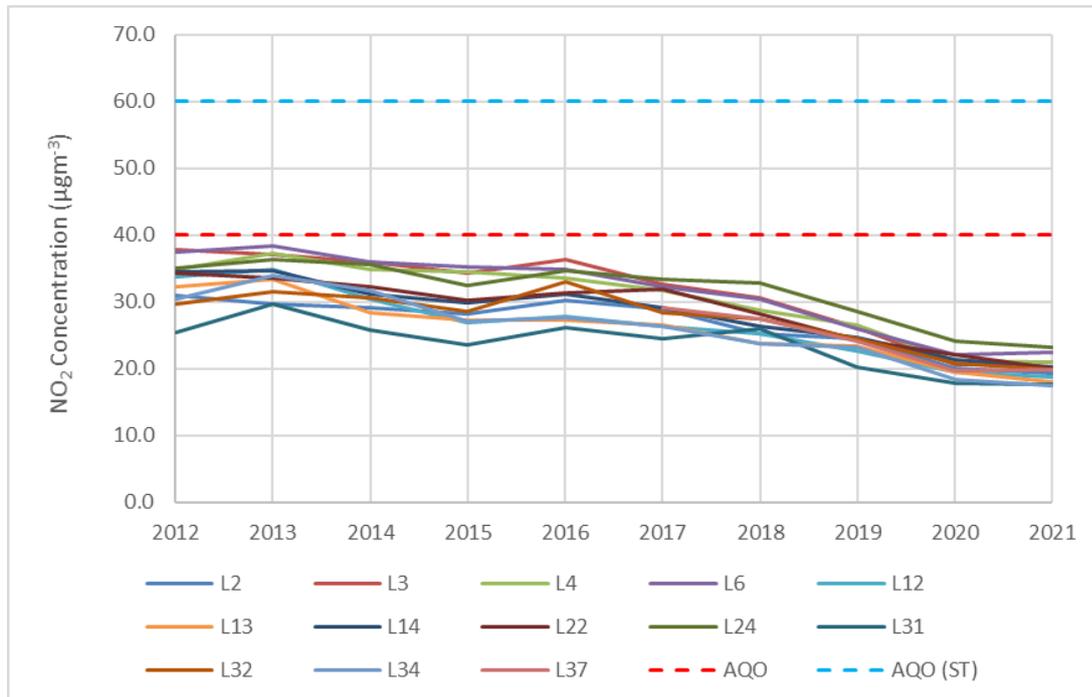
Note: AQO (ST) = 60 µg m⁻³. Diffusion tubes cannot be used to directly compare against the 1-hour mean NO₂ objective. However, LLAQM.TG19 states that at locations where annual mean NO₂ concentrations of greater than 60 µg m⁻³ are monitored the 1-hour mean NO₂ objective is likely to be exceeded.

Figure A.7 Trend in NO₂ concentrations at urban background diffusion tube locations (2)
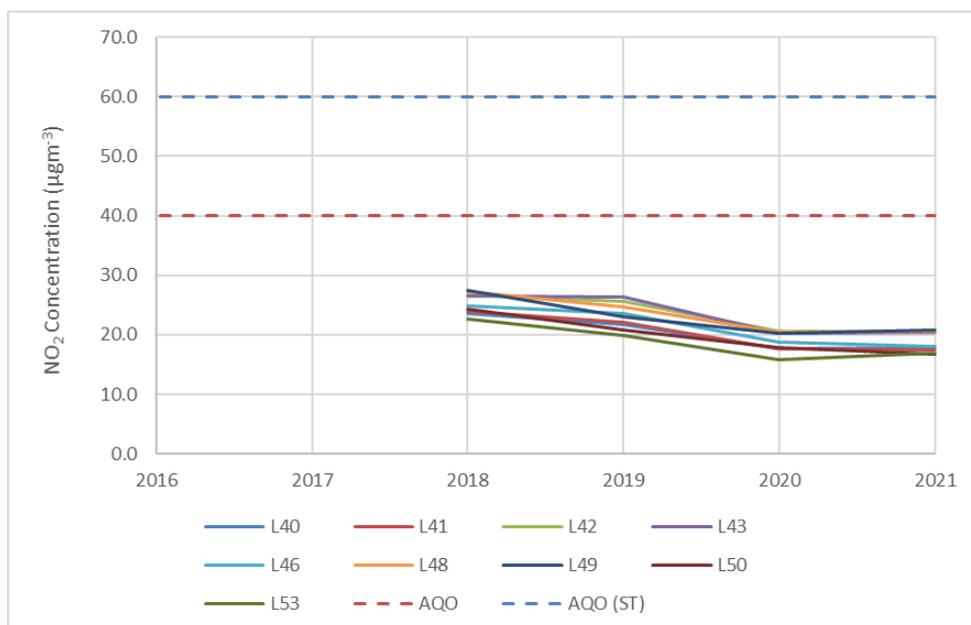
Note: AQO (ST) = 60 µg m⁻³. Diffusion tubes cannot be used to directly compare against the 1-hour mean NO₂ objective. However, LLAQM.TG19 states that at locations where annual mean NO₂ concentrations of greater than 60 µg m⁻³ are monitored the 1-hour mean NO₂ objective is likely to be exceeded.

Figure A.8 Trend in NO₂ concentrations at automatic monitoring stations, roadside and urban background diffusion tube locations (averaged)
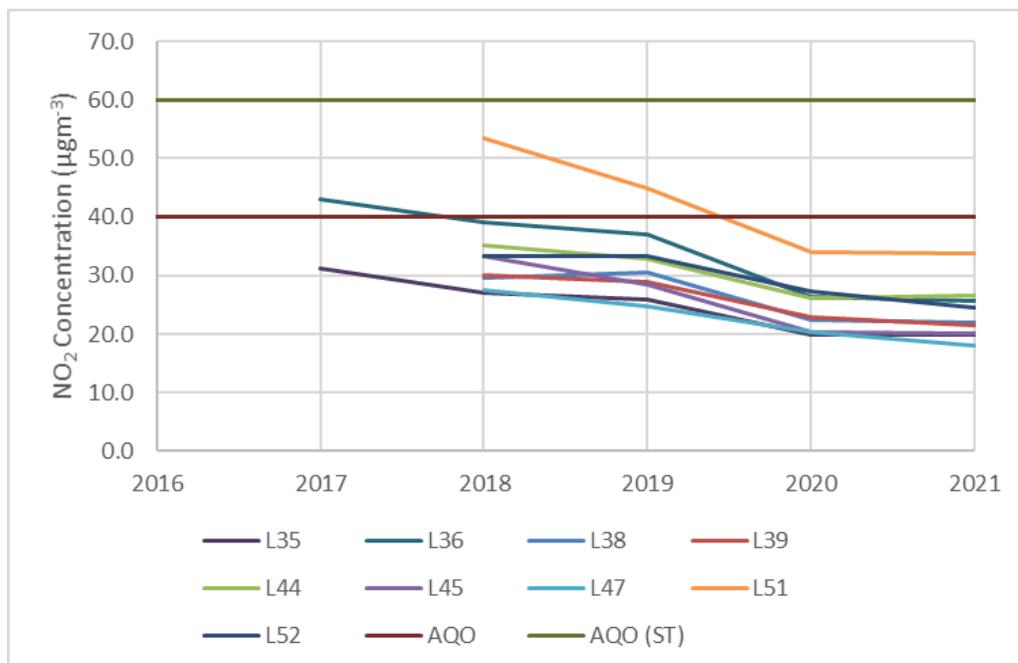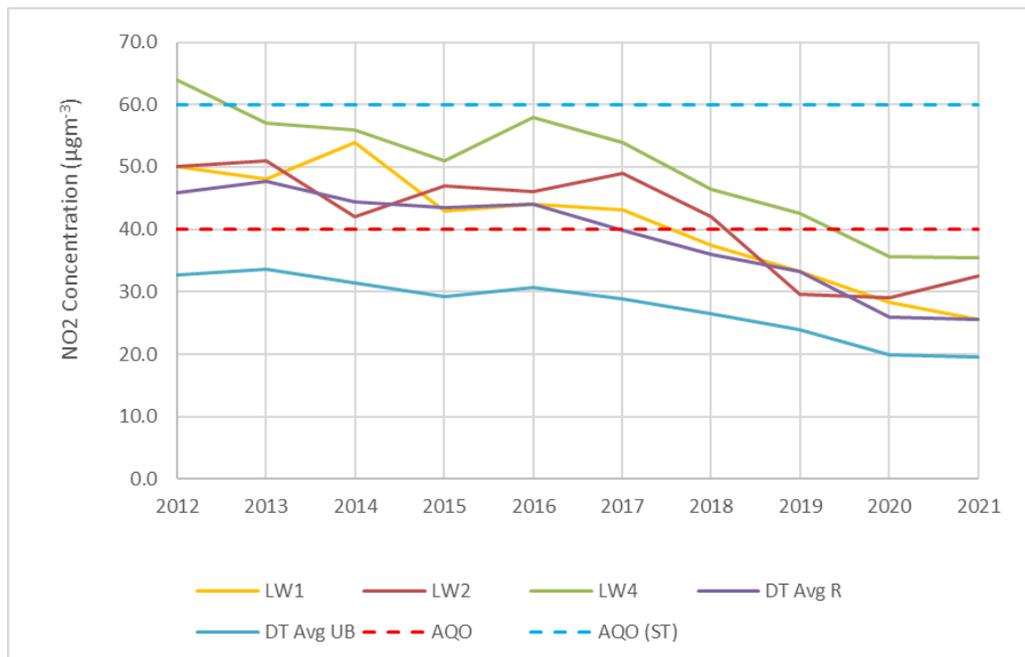

Note: AQO (ST) = 60 µg m⁻³. Diffusion tubes cannot be used to directly compare against the 1-hour mean NO₂ objective. However, LLAQM.TG19 states that at locations where annual mean NO₂ concentrations of greater than 60 µg m⁻³ are monitored the 1-hour mean NO₂ objective is likely to be exceeded.

Figure A.9 London Borough of Lewisham 2021 Diffusion Tube Network (North)
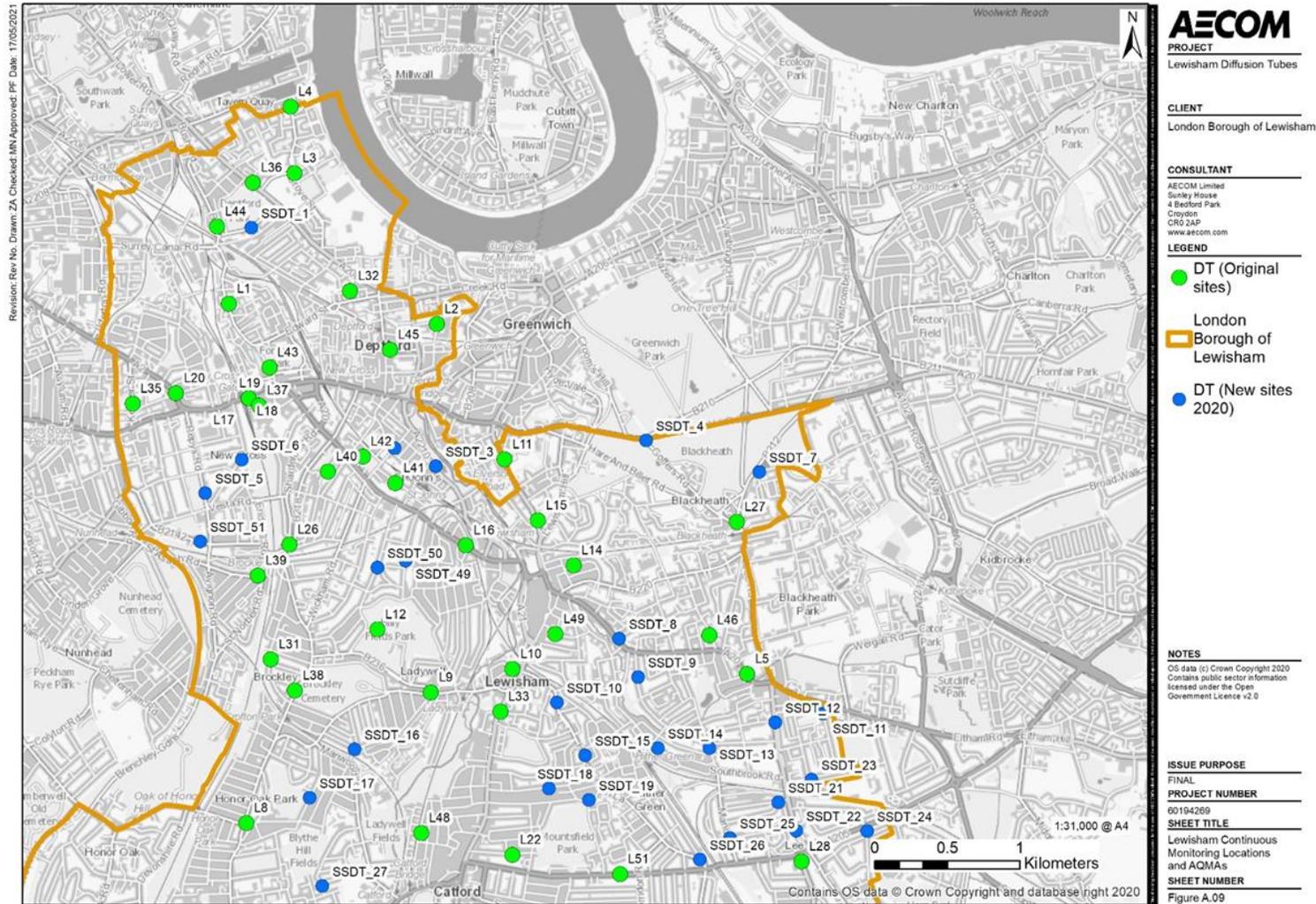
Figure A.10 London Borough of Lewisham 2021 Diffusion Tube Network (South)
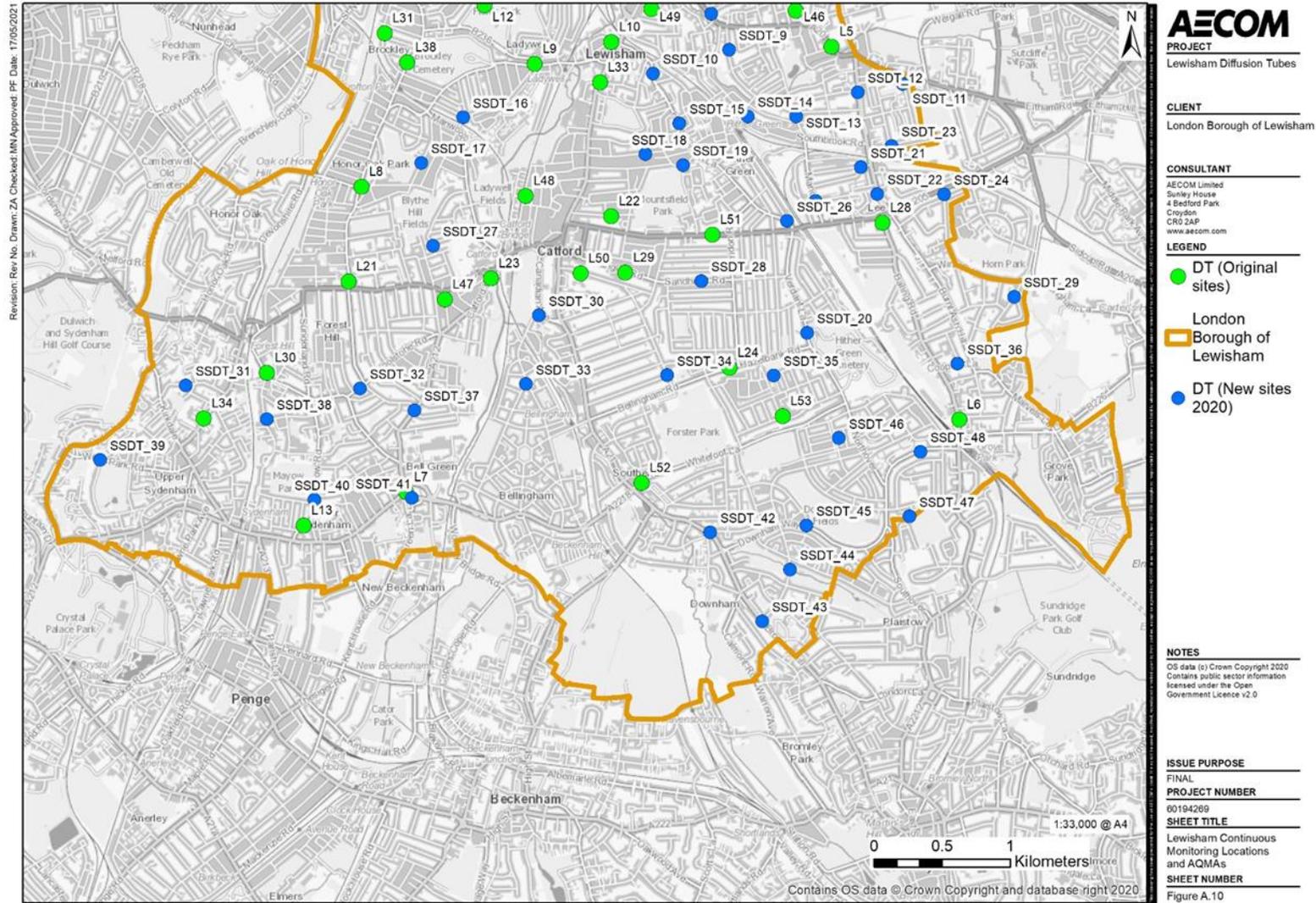
Figure A.11 Air Quality Management Areas and Continuous Monitoring Locations in London Borough of Lewisham
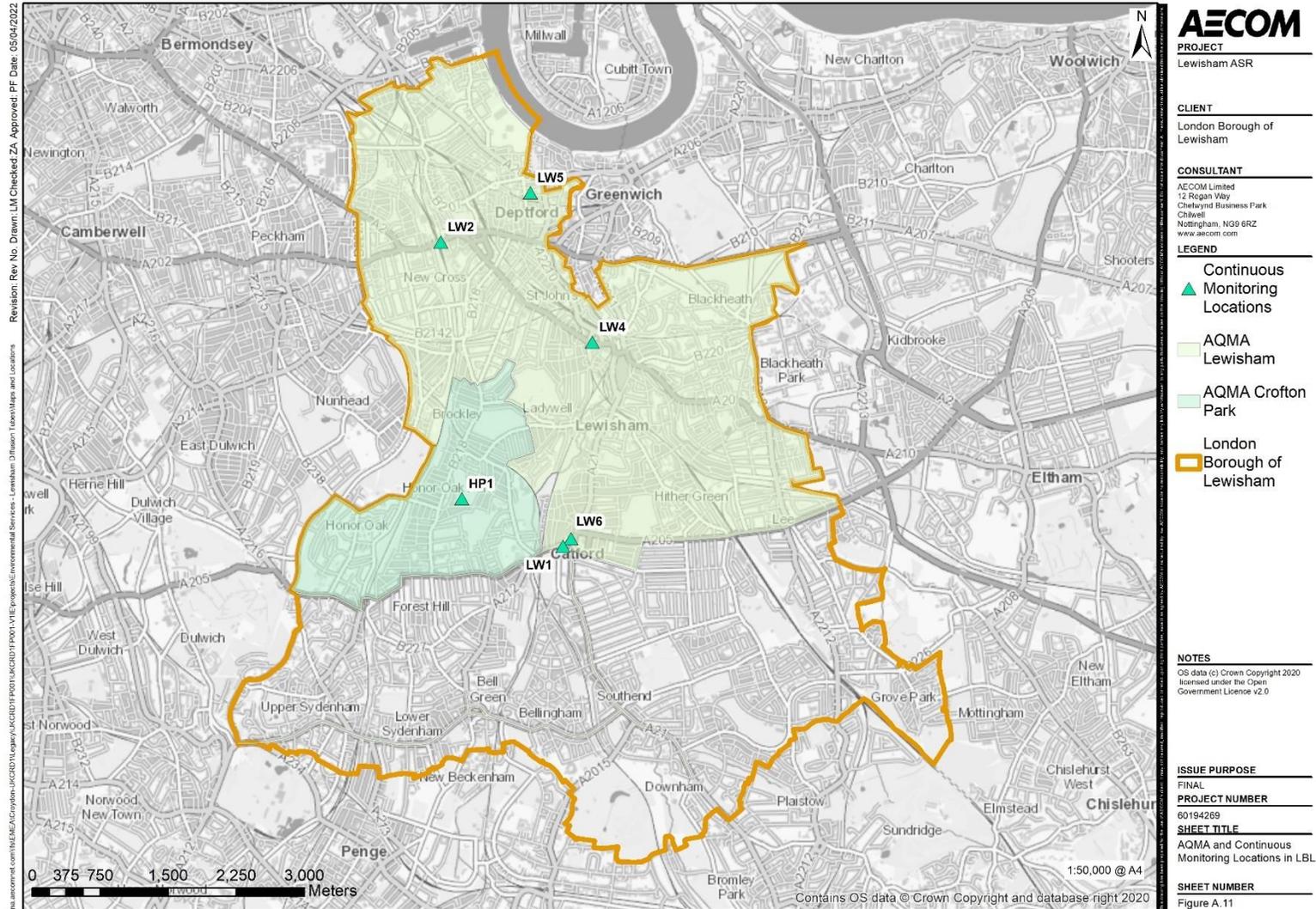
Table M. Short-Term to Long-Term Monitoring Data Adjustment

Site ID	Annualisation Factor Honour Oak Park	Annualisation Factor Deptford	Annualisation Factor London Bexley	Average Annualisation Factor	Raw Data Annual Mean (µg m^{-3})	Annualised Annual Mean (µg m^{-3})	Comments
L19	0.9488	0.9679	0.9782	0.9650	36.3	35.1	
LW2	1.1449	1.0278	1.0232	1.0618	30.7	32.6	

Appendix B   Full Monthly Diffusion Tube Results for 2021

Table N.   NO$_2$ Diffusion Tube Results

Site ID	Valid data capture for monitoring period %[a]	Valid data capture 2021 %[b]	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual mean – raw data	Annual mean – bias adjusted
L1	100.0	100.0	33.0	28.3	25.0	25.0	24.3	20.9	23.4	18.8	32.7	30.5	30.6	24.7	26.4	21.9
L2	100.0	100.0	29.7	26.6	24.4	23.6	21.2	17.4	18.5	13.1	25.1	24.0	27.1	24.1	22.9	19.0
L3	90.4	90.4	34.4	28.1	20.1	25.2	22.5	19.4	20.6	16.2	31.2	-	30.5	27.1	25	20.8
L4	100.0	100.0	33.2	30.1	23.3	26.2	23.3	18.1	19.4	16.2	29.7	26	32.8	22.3	25	20.8
L5	100.0	100.0	28.6	31.0	30.6	35.9	28.5	25.9	22.0	18.4	30.6	23.1	28.3	25.5	27.4	22.7
L6	100.0	100.0	33.5	28.4	29.4	26.4	25.9	23.1	22.8	20.1	27.2	26.7	32.7	24.7	26.8	22.2
L7	100.0	100.0	45.2	41.0	39.5	38.3	39.9	37.9	32.4	29.7	41.1	36.3	38.3	30.5	37.5	31.1
L8	100.0	100.0	37.4	32.7	29.5	35.3	29.2	28.8	25.4	19.5	33.4	28.8	33.8	24.7	29.9	24.8
L9	100.0	100.0	32.4	35.7	29.6	35.1	30.4	28.8	26.1	23.1	34.4	28.2	33.5	24.5	30.2	25.0
L10	100.0	100.0	35.0	31.3	30.7	34.1	28.9	26.7	26.6	22.2	37.5	32.3	33.1	26.0	30.4	25.2
L11	100.0	100.0	35.1	35.9	32.4	35.3	28.8	27.1	29.6	21.3	40.7	29.1	34.4	26.6	31.4	26.0
L12	100.0	100.0	31.7	28.1	27.2	23.3	18.8	13.6	15.9	12.5	23.3	22.1	31.2	21.5	22.4	18.6

Site ID	Valid data capture for monitoring period %[a]	Valid data capture 2021 %[b]	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual mean – raw data	Annual mean – bias adjusted
L13	100.0	100.0	29.8	24.5	23.4	19.8	20.8	16.2	14.9	11.4	20.7	21.6	32.5	21.7	21.4	17.8
L14	100.0	100.0	33.8	23.8	25.7	22.0	20.0	17.6	17.4	18.2	23.6	27.3	31.4	28.7	24.1	20.0
L15	100.0	100.0	11.9	35.8	32.2	25.0	33.2	26.4	29.9	24.1	37.7	29.5	34.2	28.9	29.1	24.1
L16	100.0	100.0	44.1	40.8	39.6	40.6	38.1	37.7	36.8	29.8	44.0	32.1	41.1	31.8	38.0	31.6
L17	75.1	75.1	40.3	26.8	-	-	39.8	35.1	34.2	47.2	38.9	32.8	-	31.9	36.3	30.2
L18	82.5	82.5	41.0	-	36.6	45.1	38.4	38.4	34.3	43.6	39.3	-	39.4	30.4	38.7	32.1
L19	66.6	66.6	42.4	-	36.6	-	-	36.5	34.3	-	39.9	31.7	41.3	28.1	36.3	29.1
L20	82.5	82.5	37.3	30.2	32.6	-	27.2	23.0	27.3	21.3	-	31.9	34.5	27.5	29.3	24.3
L21	100.0	100.0	43.9	34.8	35.4	32.8	34.2	33.4	27.6	24.1	35.7	36.6	38.5	28.5	33.8	28.0
L22	100.0	100.0	31.4	27.9	26.9	24.5	21.7	17.1	17.7	16.1	24.5	24.9	30.2	22.8	23.8	19.8
L23	100.0	100.0	35.0	38.7	34.9	35.3	32.9	32.9	29.8	27.3	40.0	34.3	36.8	32.2	34.2	28.4
L24	92.3	92.3	-	33.6	30.8	28.9	26.3	22.6	22.9	19.8	32.8	28.8	30.1	28.3	27.7	23.0
L25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L26	89.9	89.9	42.3	40.7	36.1	31.3	33.1	27.7	-	24.3	39.4	36.5	34.7	32.9	34.4	28.6

Site ID	Valid data capture for monitoring period %[a]	Valid data capture 2021 %[b]	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual mean – raw data	Annual mean – bias adjusted
L27	82.7	82.7	43.6	34.2	42.6	37.4	32.4	-	-	27.6	36.8	38.0	42.9	32.4	36.8	30.5
L28	100.0	100.0	45.9	40.7	46.1	38.8	35.2	40.0	30.0	26.5	36.2	35.3	43.0	30.5	37.3	31.0
L29	100.0	100.0	32.4	31.2	26.3	23.4	21.6	18.2	19.1	13.8	24.5	23.6	25.0	24.3	23.6	19.6
L30	100.0	100.0	26.1	27.6	22.9	20.7	20.7	17.9	17.6	15.9	25.7	22.7	29.4	23.5	22.6	18.7
L31	100.0	100.0	25.7	26.4	21.0	23.4	18.5	15.3	16.5	13.0	22.0	25.0	26.6	18.8	21	17.4
L32	90.1	90.1	32.6	23.9	24.9	24.5	22.5	18.0	19.4	15.1	25.9	25.9	27.8	-	23.7	19.7
L33	100.0	100.0	35.3	37.4	41.1	32.1	30.4	27.5	27.9	28.1	32.0	26.1	40.1	31.6	32.5	26.9
L34	100.0	100.0	30.4	22.4	23.9	21.1	16.1	17.1	16.2	12.9	21.7	19.3	24.3	22.8	20.7	17.2
L35	100.0	100.0	32.6	28.1	25.7	23.8	20.4	16.8	17.9	15.3	26.1	24.1	28.1	25.2	23.7	19.7
L36	100.0	100.0	38.6	36.6	28.7	32.6	30.9	27.9	30.3	22.1	32.9	28.2	31.7	26.8	30.6	25.4
L37	100.0	100.0	30.1	25.5	26.8	25.2	22.5	19.7	19.1	15.4	25.5	22.4	28.3	24.1	23.7	19.7
L38	92.3	92.3	32.7	32.5	29.1	30.0	26.2	24.4	25.0	16.1	29.4	19.3	-	23.3	26.2	21.7
L39	100.0	100.0	34.0	30.5	29.2	28.0	24.1	20.2	20.7	16.5	26.1	23.8	32.3	21.4	25.6	21.2
L40	100.0	100.0	29.0	26.0	22.5	22.2	18.7	15.3	16.5	12.9	23.8	20.1	26.7	21.6	21.3	17.7

Site ID	Valid data capture for monitoring period %[a]	Valid data capture 2021 %[b]	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual mean – raw data	Annual mean – bias adjusted
L41	89.9	89.9	27.9	25.0	23.5	20.4	17.3	15.0	-	11.8	22.6	18.5	26.5	19.6	20.7	17.2
L42	100.0	100.0	33.3	26.7	24.6	24.6	21.6	18.5	18.6	15.2	27.0	25.6	31.2	24.4	24.3	20.1
L43	100.0	100.0	33.8	27.4	22.6	21.0	21.7	17.6	19.5	15.4	29.1	26.8	31.2	25.8	24.3	20.2
L44	100.0	100.0	39.6	35.4	32.8	29.0	26.5	25.0	27.2	15.1	39.2	39.5	39.5	31.9	31.7	26.3
L45	100.0	100.0	31.8	27.8	24.3	24.3	21.2	17.0	20.2	14.4	26.8	24.3	29.9	24.7	23.9	19.8
L46	100.0	100.0	31.3	24.2	24.2	20.4	19.2	17.1	16.8	13.9	22.3	21.6	25.9	21.7	21.5	17.9
L47	100.0	100.0	19.9	28.3	24.7	22.2	18.0	17.6	16.6	12.2	23.6	23.7	27.7	21.6	21.3	17.7
L48	100.0	100.0	32.5	31.7	25.7	25.1	23.9	19.3	16.6	15.8	25.1	25.3	25.1	27.5	24.5	20.3
L49	100.0	100.0	34.0	27.6	26.9	24.7	22.4	19.3	17.9	18.8	24.8	23.8	29.3	28.0	24.8	20.6
L50	100.0	100.0	29.3	21.2	23.0	20.8	16.4	15.2	13.6	12.4	20.0	19.3	28.2	20.0	20	16.6
L51	100.0	100.0	47.5	45.6	47.0	44.5	43.3	42.9	29.2	28.8	45.6	41.2	32.2	33.2	40.1	33.3
L52	100.0	100.0	37.3	26.7	38.0	25.4	29.6	24.5	23.9	25.0	31.5	32.5	27.8	28.0	29.2	24.2
L53	100.0	100.0	26.7	23.3	22.7	18.9	15.4	15.6	14.6	9.6	22.6	19	34.1	20.6	20.2	16.8
SSDT_1	100.0	100.0	38.3	24.8	26.1	28.5	27.2	21.7	23.7	17.7	37.4	31.1	31.9	28.1	28.0	23.3

Site ID	Valid data capture for monitoring period %[a]	Valid data capture 2021 %[b]	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual mean – raw data	Annual mean – bias adjusted
SSDT_2	77.0	77.0	-	23.7	26.5	27.7	-	21.1	21.8	16.3	-	25.3	30.0	24.1	24.1	20.0
SSDT_3	100.0	100.0	36.1	30.7	31.4	25.1	25.1	21.1	21.0	18.2	30.4	26.9	32.6	28.7	27.3	22.6
SSDT_4	100.0	100.0	38.7	31.5	34.0	29.8	31.8	26.5	24.8	21.5	38.0	31.0	31.0	30.2	30.7	25.5
SSDT_5	100.0	100.0	34.2	24.8	26.8	27.9	22.2	21.4	20.8	18.1	27.7	25.3	30.7	25.2	25.4	21.1
SSDT_6	74.2	74.2	-	32.3	29.3	-	-	21.4	21.6	16.7	30.2	26.9	27.4	25.7	25.7	21.3
SSDT_7	100.0	100.0	39.3	28.4	34.9	24.6	27.5	26.0	22.0	22.3	31.3	31.0	37.3	29.8	29.5	24.5
SSDT_8	100.0	100.0	36.6	33.7	29.8	30.1	27.3	25.6	24.1	22.1	33.3	28.4	33.3	30.2	29.5	24.5
SSDT_9	100.0	100.0	31.8	24.1	25.4	22.6	17.0	17.6	18.5	14.9	22.6	23.5	29.4	24.7	22.7	18.8
SSDT_10	92.3	92.3	39.9	38.1	38.1	32.3	31.1	27.4	27.1	21.5	36.2	35.7	-	33.8	32.8	27.3
SSDT_11	89.9	89.9	26.3	26.6	22.9	24.2	18.0	16.4	0.0	10.7	21.0	19.9	23.3	21.3	21.0	17.4
SSDT_12	92.1	92.1	38.0	34.8	31.6	32.9	0.0	25.5	25.9	22.2	34.4	29.6	35.7	24.7	30.5	25.3
SSDT_13	89.9	89.9	34.7	27.3	27.0	0.0	21.2	16.4	18.8	15.1	23.8	23.9	26.4	26.6	23.7	19.7
SSDT_14	100.0	100.0	30.2	26.8	25.6	25.6	21.6	17.1	19.0	15.0	26.6	23.8	39.5	27.8	24.9	20.7
SSDT_15	92.1	92.1	33.5	31.7	30.0	28.6	0.0	23.8	23.8	18.4	32.6	26.5	29.9	21.9	27.4	22.7

Site ID	Valid data capture for monitoring period %[a]	Valid data capture 2021 %[b]	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual mean – raw data	Annual mean – bias adjusted
SSDT_16	100.0	100.0	33.9	30.6	27.4	25.6	23.5	17.8	19.8	15.5	26.6	26.9	29.0	23.1	25.0	20.7
SSDT_17	100.0	100.0	31.4	26.2	24.3	19.2	19.0	16.4	16.2	12.8	23.8	20.9	29.8	21.0	21.7	18.1
SSDT_18	100.0	100.0	32.6	29.6	24.8	20.0	24.4	17.1	20.7	17.0	25.5	23.4	28.8	25.8	24.1	20.0
SSDT_19	100.0	100.0	29.2	25.6	25.1	24.8	21.1	20.2	19.3	13.1	23.3	20.3	25.9	19.2	22.3	18.5
SSDT_20	100.0	100.0	35.0	27.9	31.5	27.6	27.5	27.5	19.9	20.2	29.7	27.9	26.8	23.5	27.1	22.5
SSDT_21	100.0	100.0	31.6	24.0	26.0	24.0	21.8	16.7	16.5	13.8	23.8	22.1	28.4	20.6	22.4	18.6
SSDT_22	100.0	100.0	39.3	36.0	33.3	33.0	30.8	28.0	23.8	20.6	32.0	30.1	34.1	29.6	30.9	25.6
SSDT_23	100.0	100.0	33.9	27.6	23.9	22.4	19.0	16.7	17.0	11.8	23.7	22.0	27.2	21.7	22.2	18.5
SSDT_24	100.0	100.0	34.0	26.9	31.1	31.1	27.2	27.5	22.1	21.6	28.8	24.6	32.9	24.2	27.7	23.0
SSDT_25	100.0	100.0	35.6	26.3	29.4	30.6	26.7	24.5	22.9	18.2	29.3	26.8	35.9	22.9	27.4	22.8
SSDT_26	100.0	100.0	36.1	37.8	29.9	30.1	29.7	23.5	21.2	20.2	28.7	30.5	36.0	27.8	29.3	24.3
SSDT_27	92.1	92.1	26.9	29.5	22.6	23.2	0.0	16.1	16.8	12.9	22.1	22.7	28.7	23.8	22.3	18.5
SSDT_28	100.0	100.0	40.7	31.2	34.0	35.3	30.9	26.1	22.1	21.7	35.6	29.4	29.3	30.0	30.5	25.3
SSDT_29	100.0	100.0	32.1	26.6	21.8	22.0	17.7	15.6	16.2	13.8	22.2	21.0	31.2	22.8	21.9	18.2

Site ID	Valid data capture for monitoring period %[a]	Valid data capture 2021 %[b]	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual mean – raw data	Annual mean – bias adjusted
SSDT_30	92.3	92.3	33.2	31.3	26.3	23.3	23.2	20.8	17.5	15.2	25.8	24.5	0.0	26.3	24.3	20.2
SSDT_31	100.0	100.0	30.8	25.4	22.4	21.9	16.8	14.8	13.4	12.9	20.1	19.5	25.9	21.8	20.5	17.0
SSDT_32	100.0	100.0	28.6	28.7	24.0	24.7	20.9	18.4	18.1	14.9	24.5	6.2	30.3	24.2	22.0	18.2
SSDT_33	100.0	100.0	33.7	29.5	25.9	24.1	20.0	17.3	17.3	14.9	24.5	23.4	33.2	22.9	23.9	19.8
SSDT_34	100.0	100.0	27.4	26.2	22.9	23.7	18.1	17.6	17.1	13.7	22.7	20.2	31.0	23.1	22.0	18.2
SSDT_35	92.1	92.1	29.4	25.6	22.9	23.7	0.0	16.6	16.4	13.9	22.8	21.7	25.5	21.3	21.8	18.1
SSDT_36	100.0	100.0	25.8	23.7	18.7	20.2	16.2	12.6	13.0	10.3	17.8	16.9	28.9	17.4	18.5	15.3
SSDT_37	100.0	100.0	41.0	42.2	40.4	34.1	31.3	31.4	26.1	27.0	37.5	36.1	38.9	28.6	34.6	28.7
SSDT_38	100.0	100.0	23.9	20.2	21.2	21.2	16.5	14.0	14.0	13.2	19.7	19.8	24.7	19.5	19.0	15.8
SSDT_39	89.9	89.9	30.2	22.5	24.8	19.0	20.2	17.7	0.0	14.4	23.3	20.0	27.9	22.1	22.0	18.3
SSDT_40	90.4	90.4	34.7	31.5	32.7	26.2	25.0	24.2	21.4	15.9	27.9	0.0	31.7	26.5	27.1	22.5
SSDT_41	100.0	100.0	47.7	36.0	41.1	40.3	34.8	39.1	26.6	27.7	47.1	34.4	38.4	33.7	37.2	30.9
SSDT_42	84.9	84.9	40.1	31.7	29.3	25.6	29.6	24.8	25.5	0.0	31.1	31.4	0.0	23.8	29.3	24.3
SSDT_43	100.0	100.0	28.1	23.8	20.6	21.9	17.4	16.5	14.8	13.5	19.9	20.9	25.8	20.9	20.3	16.9

Site ID	Valid data capture for monitoring period %[a]	Valid data capture 2021 %[b]	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual mean – raw data	Annual mean – bias adjusted
SSDT_44	92.9	92.9	22.8	22.6	17.0	14.3	13.2	0.0	13.2	11.2	14.9	18.5	24.2	20.4	17.5	14.5
SSDT_45	89.9	89.9	35.4	24.4	20.8	21.0	18.1	16.0	0.0	11.1	21.6	21.1	25.0	17.6	21.1	17.5
SSDT_46	100.0	100.0	32.8	28.3	28.3	24.5	21.0	19.8	19.0	14.6	24.9	27.2	30.3	25.4	24.7	20.5
SSDT_47	100.0	100.0	27.9	30.5	36.8	30.3	28.0	29.6	23.6	19.4	33.5	28.5	36.6	28.0	29.4	24.4
SSDT_48	100.0	100.0	32.6	31.2	26.5	26.8	23.7	19.4	18.8	15.5	28.1	25.6	27.9	22.7	24.9	20.7
SSDT_49	100.0	100.0	27.3	24.5	18.8	23.5	20.0	15.9	15.9	13.6	22.3	21.8	25.0	23.2	21.0	17.4
SSDT_50	100.0	100.0	31.1	27.1	22.9	23.2	19.9	16.3	17.6	13.7	21.7	20.7	25.0	19.6	21.6	17.9
SSDT_51	100.0	100.0	41.4	41.9	35.1	27.9	37.2	30.8	29.7	24.9	40.1	35.1	34.8	29.4	34.0	28.2

Notes

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

Exceedances of the NO$_2$ annual mean AQO of 40 µg m^{-3} are shown in **bold**.

NO$_2$ annual means in excess of 60 µg m^{-3}, indicating a potential exceedance of the NO$_2$ hourly mean AQS objective are shown in **bold and underlined**.

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

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

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

Table O. Local Implementation Plan Projects in Air Quality Focus Areas in 2021 and Ongoing

No.	GLA ref.	Focus Area	Local Implementation Plan Projects[9]					
1	125	Deptford Church Street	Quietway 1 (Implemented)	Cycle Superhighway 4 (in design) *This is now being delivered on Evelyn Street. Due to be fully complete in Autumn 2022.* *We are also undertaking a feasibility study into segregated cycle lanes on DCS although this is not LIP funded.*	Quietway 2 (in design)	S106 New Bus Services	New Electric Vehicle CP Sites *With the OZEV funding secured for 22/23 we're seeking to deliver a further 40 on-street EVCPs.*	New 20mph limits[10]
2	126	New Cross	Bakerloo Line Extension (Consultation)	A2 Corridor Study – TfL	Old Kent Road OA work with LB Southwark & GLA	S106 New Bus Services	New Electric Vehicle CP Sites	New 20mph limits Deptford Parks Liveable Neighbourhood (DPLN) Project *The implementation is subject to funding.* Woodpecker Walk improvements that come into New Cross Ward.

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[9] The future implementation of the ongoing/planned projects will depend on the availability of the appropriate level of funding. Current funding is in place 24 June 2022 and then there is no certainty of funding beyond this point.

[10] There is a borough-wide 20mph limit in place. Any new 20mph limits will be on TfL roads

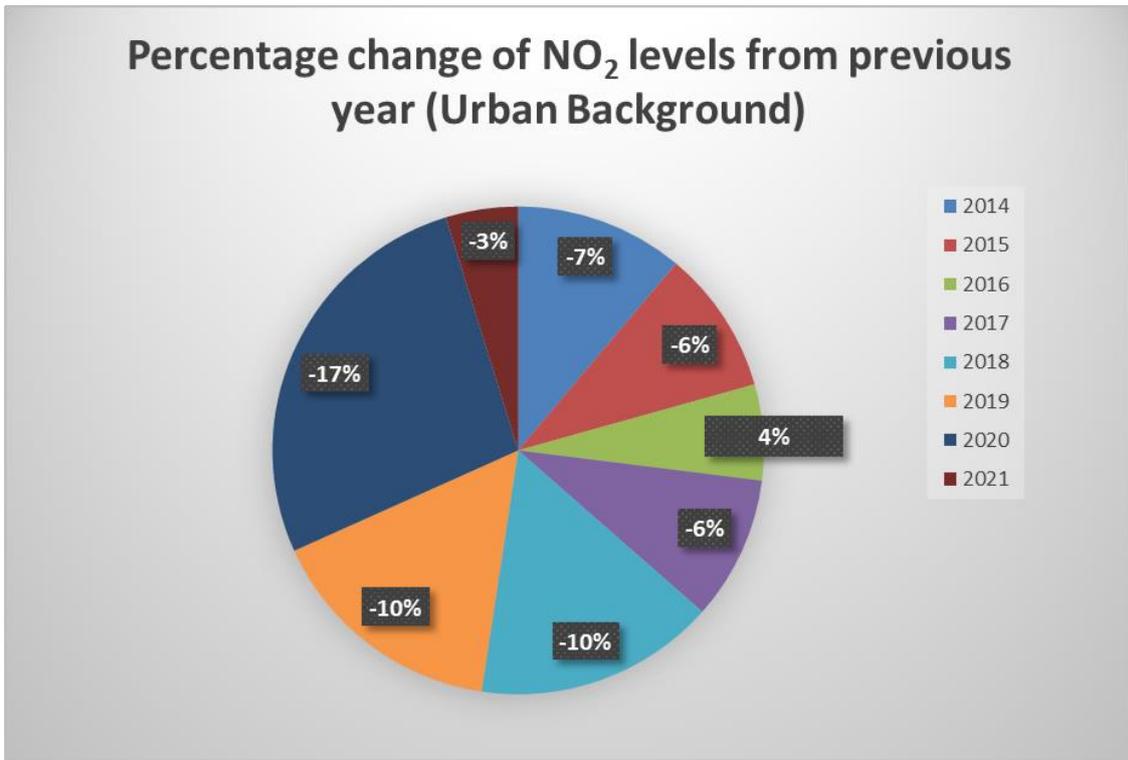| No.	GLA ref.	Focus Area	Local Implementation Plan Projects[9]					
3	127	Brockley Cross	Rail Strategy including Overground proposals	B218 Corridor Study *The delivery of future phases will be subject to funding.*	New EVCP Sites	New 20mph limits		
4	128	Honor Oak Park	New speed camera at Stondon Park Junction (implemented)	B218 Corridor Study	New EVCP Sites	New 20mph limits		
5	129	Loampit Vale & L. High St	Bakerloo Line Extension (Consultation)		New EVCP Sites	New 20mph limits		
6	130	Catford Road	Major regeneration programme, including A205 alignment (feasibility) *We're continuing to work with TfL and the next milestone is to submit the strategic outline business case to DfT*	Quietway 2 (in design)	New EVCP Sites *With the OZEV funding secured for 22/23 we're seeking to deliver a further 40 on-street EVCPs.*	New 20mph limits		

No.	GLA ref.	Focus Area	Local Implementation Plan Projects[9]					
7	131	A205 Brownhill Road	A205 Brownhill Road Corridor improvements (in design)	New EVCP Sites	New 20mph limits	TFL road *Further improvements are being proposed by TfL at the Brownhill Rd / Torridon Rd junction.*		
8	132	Forest Hill	A205 Devonshire Rd minor junction improvement (implemented)	Dartmouth Road streetscape improvements (including 20mph measures)	New EVCP Sites	New 20mph limits	Air Quality Assessment commissioned with recommendations in 2017	
9	133	Deptford Parks	Copenhagen crossings	Prince Street and Scawen Rd modal filters *Initially introduced as temporary measure, these have now been made permanent.*		Streets in North Deptford will see reduced traffic owing to new restrictions.	Improvements to Woodpecker Walk and Rolt Street are due to be implemented – *These have now been delivered. As per update in Table J*	Liveability Neighbourhoods-Streets in North Deptford will see reduced traffic owing to new restrictions. The funding picture and the scope of work for this action remain unclear *There is currently no Liveable Neighbourhoods funding for the Deptford Park Liveable Neighbourhood Scheme.*

Appendix C   Changes in NO$_2$ average annual mean concentrations (2014-2021)

Figure C.1 Percentage change of NO$_2$ average annual mean concentrations from previous year (Roadside Sites)
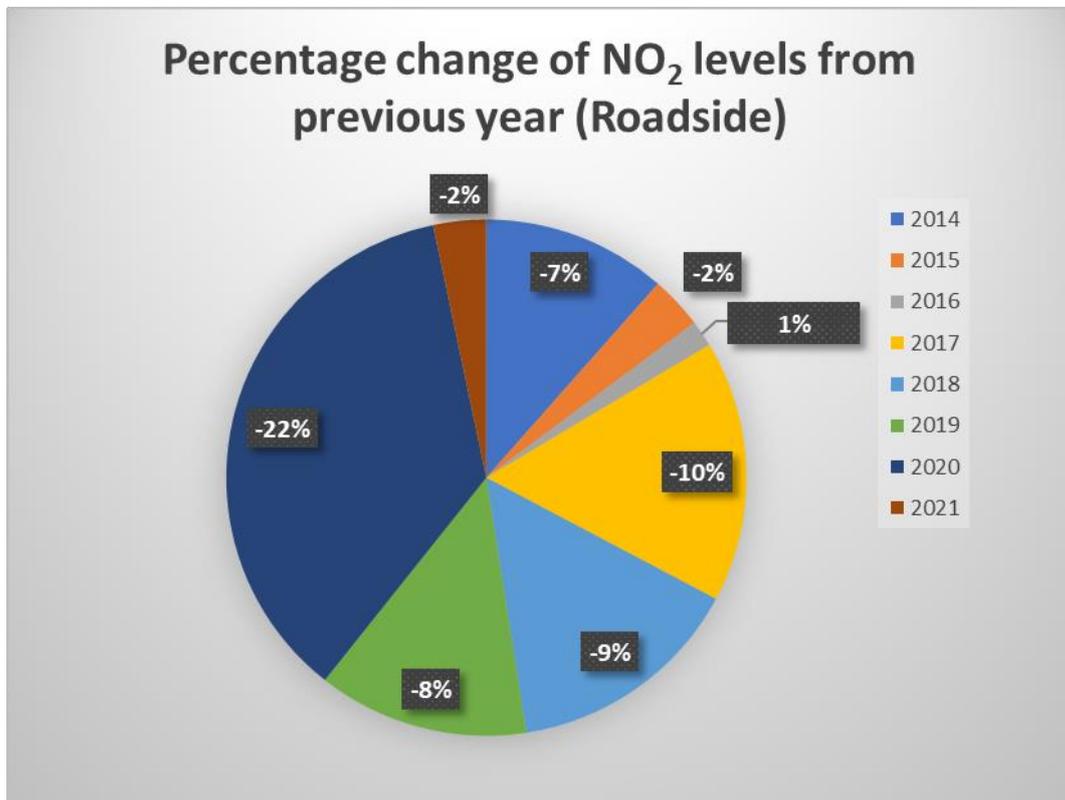
Figure C.2 Percentage change of NO₂ average annual mean concentrations from previous year (UB Sites)

Percentage change of NO₂ levels from previous year (Urban Background)

Legend:
- 2014
- 2015
- 2016
- 2017
- 2018
- 2019
- 2020
- 2021

Values: -7%, -6%, 4%, -6%, -10%, -10%, -17%, -3%

Appendix D   Air Pollution Concentrations and the World Health Organisation (WHO) recommendations

D.1   New 2021 World Health Organisation (WHO) Guideline

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities.

New WHO Global Air Quality Guidelines (AQGs)[11] published in September 2021 provide clear evidence of the damage air pollution inflicts on human health, at even lower concentrations than previously understood. The guidelines recommend tighter air quality levels to protect the health of populations, by reducing levels of key air pollutants, some of which also contribute to climate change. The following presents the new air quality levels. The reader should refer to the full document for further details.

Pollutant	Averaging time for pollutants/Definition	Summary of WHO (2021) recommended Pollutants AQG levels and interim targets (IT)				AQG level/Target
		IT1	IT2	IT3	IT4	
$PM_{2.5}$, $\mu g\ m^{-3}$	Annual	35	25	15	10	**5**
$PM_{2.5}$, $\mu g\ m^{-3}$	24-hour	75	50	37.5	25	**15**
PM_{10}, $\mu g\ m^{-3}$	Annual	70	50	30	20	**15**
PM_{10}, $\mu g\ m^{-3}$	24-hour	150	100	75	50	**45**
O_3, $\mu g\ m^{-3}$	Peak season	100	70	na	na	**60**
O_3, $\mu g\ m^{-3}$	8-hour	160	12	na	na	**100**
NO_2, $\mu g\ m^{-3}$	Annual	40	30	20	na	**10**
NO_2, $\mu g\ m^{-3}$	24-hour	120	50	na	na	**25**
NO_2, $\mu g\ m^{-3}$	1-hour	NC	NC	NC	NC	**200**
SO_2, $\mu g\ m^{-3}$	24-hour	125	50	na	na	**40**
SO_2, $\mu g\ m^{-3}$	10- minute	NC	NC	NC	NC	**500**
CO, $\mu g\ m^{-3}$	24-hour	7	na	na	na	**4**
CO, $\mu g\ m^{-3}$	8-hour	NC	NC	NC	NC	**10**
CO, $\mu g\ m^{-3}$	1-hour	NC	NC	NC	NC	**35**
CO, $\mu g\ m^{-3}$	15-minute	NC	NC	NC	NC	**100**

Note: Extract WHO global air quality guidelines: particulate matter ($PM_{2.5}$ and PM_{10}) , ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide (World Health Organisation, 2021).

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[11] https://www.who.int/news/item/22-09-2021-new-who-global-air-quality-guidelines-aim-to-save-millions-of-lives-from-air-pollution

Whilst not legally-binding, like all WHO guidelines, AQGs are an evidence-informed tool for policy-makers to guide legislation and policies, in order to reduce levels of air pollutants and decrease the burden of disease that results from exposure to air pollution worldwide. Conscious that this will be a difficult task for many countries and regions struggling with high air pollution levels, WHO has proposed interim targets (IT) to facilitate stepwise improvement in air quality and thus gradual, but meaningful, health benefits for the population.

D.2   NO$_2$ concentration versus WHO AQG and ITs

The concentrations of NO$_2$ recorded in Lewisham are all above the new AQG of 10 µg m^{-3} but still below the first interim target (IT) of 40 µg m^{-3}. The overall average concentrations have been below the first interim target since 2018.

The urban background monitoring site LW1 has also not seen an exceedance of the hourly AQO value of 200 µg m^{-3} since pre-2014. The WHO AQG remain 200 µg m^{-3}.

Considering that the overall background concentration of NO$_2$ is more than 10µg m^{-3}, it would be a challenge to try to achieve the recommended guideline by 2030 as shown in Figure D.1.

**Figure D.1 Trend of overall NO₂ annual mean concentrations with time vs WHO interim targets/AQG**

Change of NO2 average annual mean concentrations with time

■ Roadside ■ Background AQO
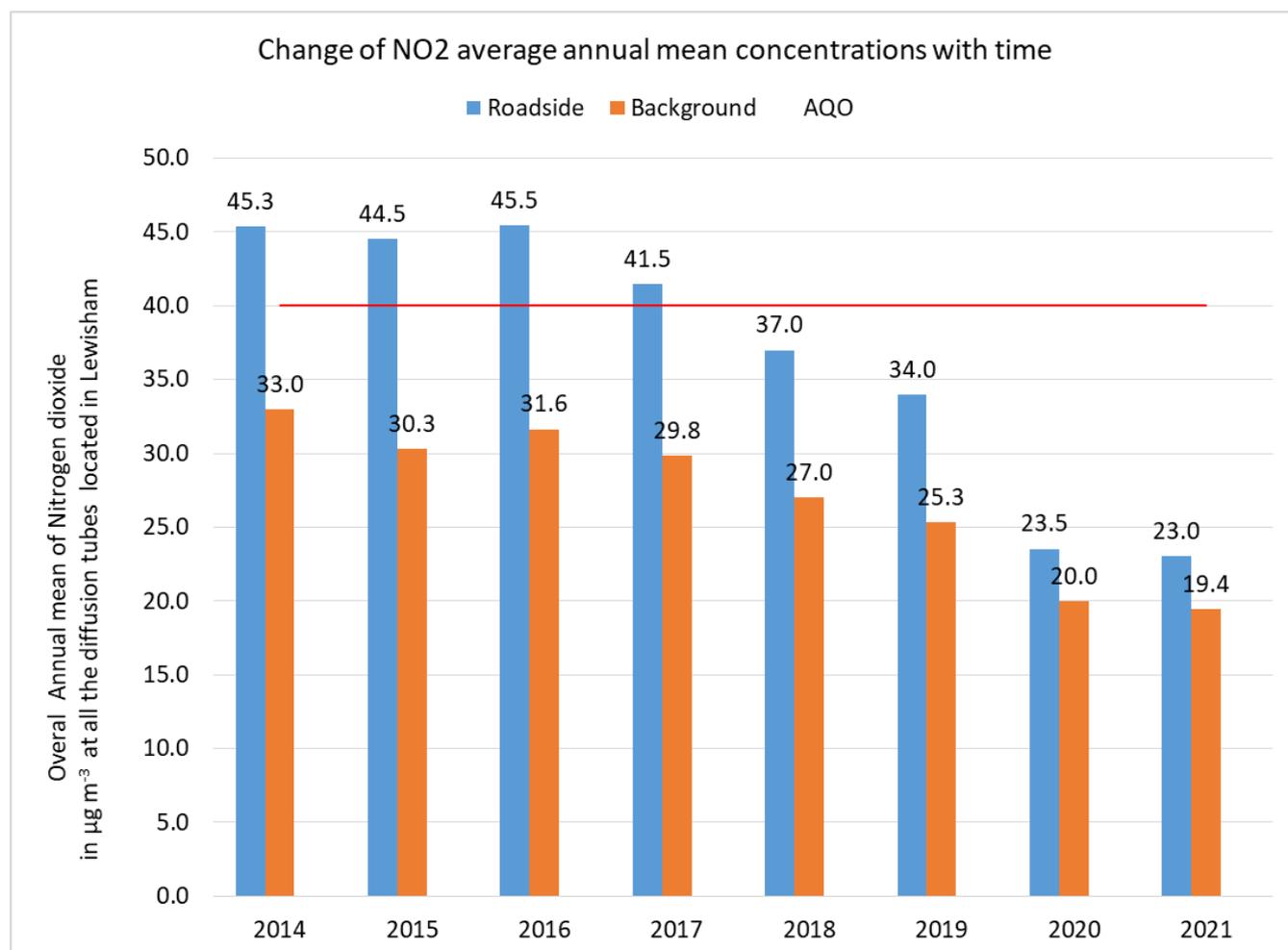
Note: The horizontal lines denote WHO (IT) 1, 2 and 3 and AQGs of 40, 30, 20 and 10 µg m⁻³ respectively. The IT is currently equal to the current AQS.

D.3 PM₁₀ Concentrations versus WHO AQG and ITs

Figure D.2 gives a comparison of the Annual Mean PM₁₀ Automatic Monitoring Results (µg m⁻³) with the new WHO guidelines. The concentrations of PM₁₀ were all above the new AQG of 15 µg m⁻³ but still below the first, second and third interim targets (IT) of 70 µg m⁻³, 50 µg m⁻³ and 30 µg m⁻³ respectively since 2014. All concentrations have been below the third IT value of 30 µg m⁻³ in 2021.

LBL will work towards achieving the AQG by 2027 at the latest.

Figure D.2 PM₁₀ Concentration vs WHO interim targets/AQG
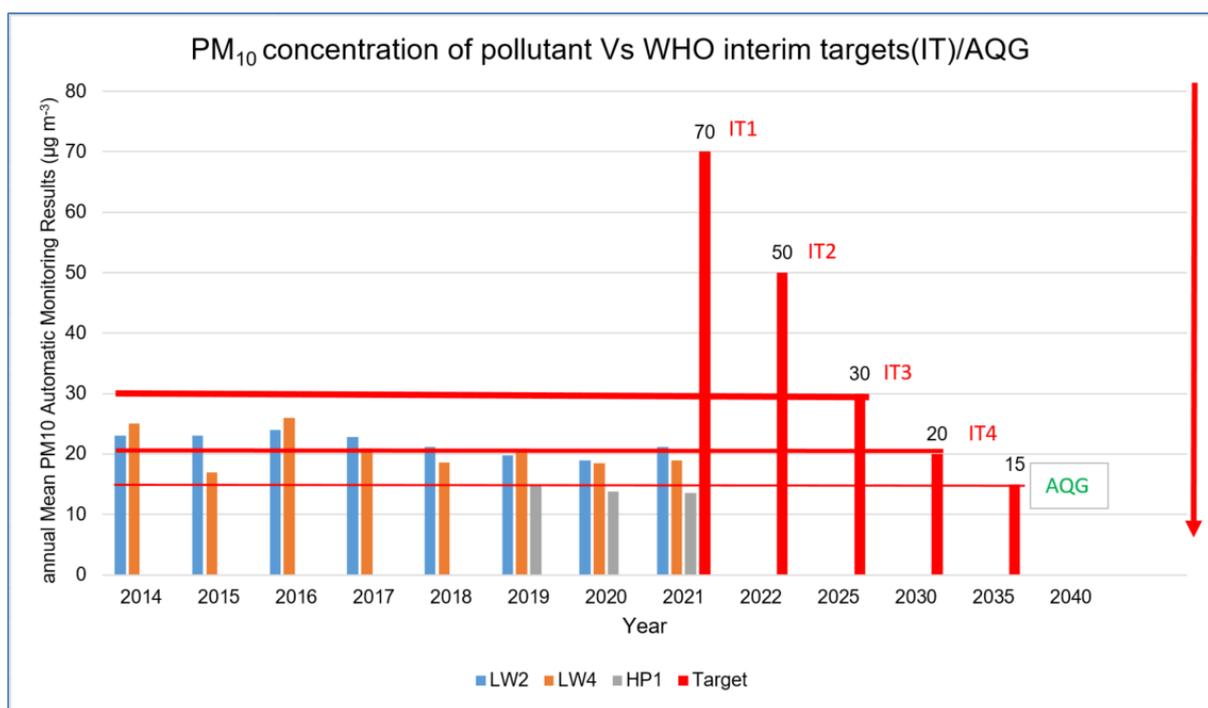
Figure D.2 PM$_{10}$ Concentration vs WHO interim targets/AQG

Notes: The annual mean concentrations are presented as µg m^{-3}. All means have been "annualised" in accordance with LLAQM Technical Guidance, if valid data capture is less than 75% and more than 33%.

A comparison of the 24 hour mean results are shown in Table P.

Table P. PM₁₀ Automatic Monitoring Results: Comparison with 24-Hour Mean Objective and Number of PM₁₀ 24-Hour Means > 50 ug m^{-3}

Site ID	2014	2015	2016	2017	2018	2019	2020	2021	Interim targets (IT)				AQG
									1	2	3	4	
LW2	14 (38)	8	9	11	4	9	5 (30)	2 (71)	150	100	75	50	45
LW4	13 (**41**)	1	18 (**47**)	7	1	9	8	3					
HP1	-	-	-	-	-	7	4	0					

Notes: the Interim targets (IT) are for 99th percentile, (i.e. 3-4 exceedances per year).

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%).
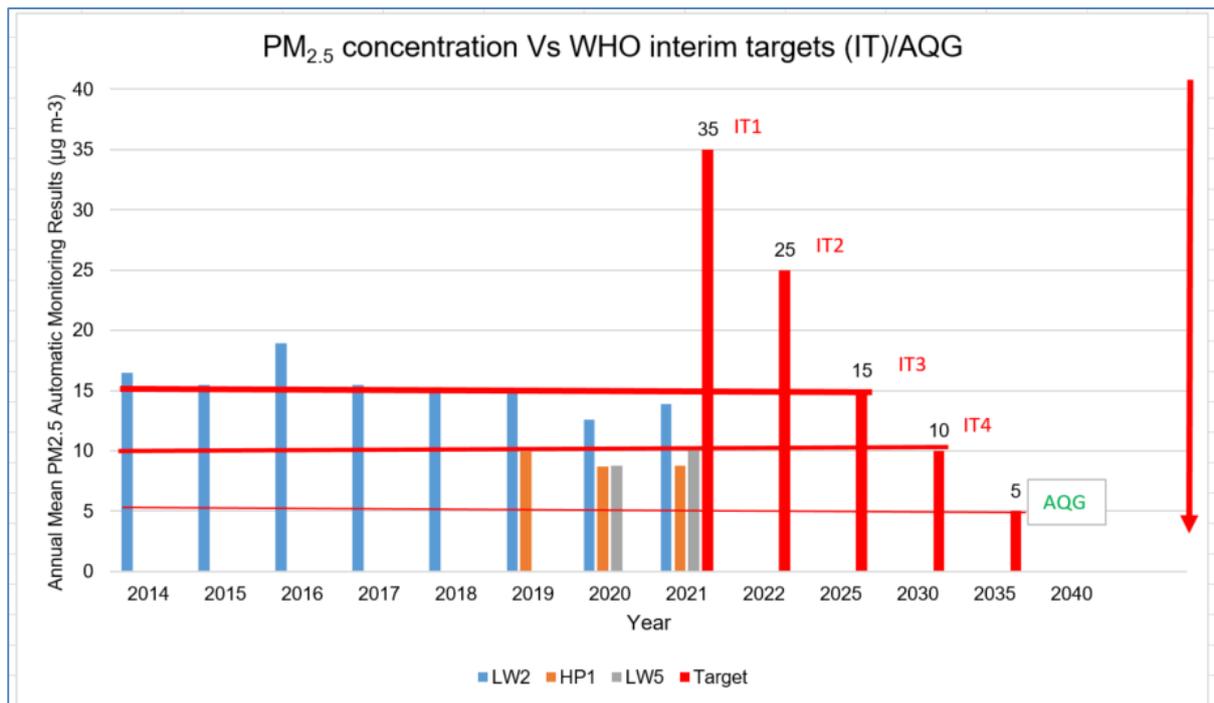
In 2021, LW4 saw 3 instances where the 24-hour mean was greater than the AQO value of 50 µg m^{-3} (i.e. the IT target 4), whereas HP1 saw 0 instances during the year and LW2, 2 instances. However, these are well below the 35 permitted (the IT allow 3-4 exceedance days per year), meaning all monitoring stations achieved compliance with the 24-hour mean AQO/IT target 4. There has been a decrease in the number of 24-hour means greater than the AQO threshold value in comparison to 2019 and 2021 at all sites.

D.4   PM$_{2.5}$ Concentrations versus WHO AQG and ITs

Figure D.3 provides a comparison of the Annual Mean PM$_{2.5}$ Automatic Monitoring Results (µg m^{-3}) with the new WHO guidelines. The concentrations are all below the interim targets 1 and 2 but however above the new 2021 AQG of 5 µg m^{-3}., which are lower than the previous guideline of 10 µg m^{-3}. Exceedance of the IT of 10 µg m^{-3} has occurred since 2014 to 2021 at LW2. All concentrations recorded at LW5 and HP1 have been below the interim target 4 of 10 µg m^{-3}.

LBL will work towards achieving the IT by 2030 at the latest as shown in Figure D.3.

Figure D.3 PM$_{2.5}$ Concentrations vs WHO Interim Targets/AQG

Notes:

The annual mean concentrations are presented as µg m^{-3}. All means have been "annualised" in accordance with LLAQM Technical Guidance if valid data capture is less than 75% and more than 25%.