

London Borough of Lewisham

Air Quality Annual Status Report for 2018

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This report provides a detailed overview of air quality in *London Borough of Lewisham* during 2018. It has been produced to meet the requirements of the London Local Air Quality Management statutory process¹.

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¹ LLAQM Policy and Technical Guidance 2016 (LLAQM.TG(16)). <https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/working-boroughs>

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Abbreviations

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

Table A. Summary of National Air Quality Standards and Objectives

Pollutant	Objective (UK)	Averaging Period	Date¹
Nitrogen dioxide - NO ₂	200 µg m ⁻³ not to be exceeded more than 18 times a year	1-hour mean	31 Dec 2005
	40 µg m ⁻³	Annual mean	31 Dec 2005
Particles - PM ₁₀	50 µg m ⁻³ not to be exceeded more than 35 times a year	24-hour mean	31 Dec 2004
	40 µg m ⁻³	Annual mean	31 Dec 2004
Particles - PM _{2.5}	25 µg m ⁻³	Annual mean	2020
	Target of 15% reduction in concentration at urban background locations	3 year mean	Between 2010 and 2020
Sulphur Dioxide (SO ₂)	266 µg m ⁻³ not to be exceeded more than 35 times a year	15 minute mean	31 Dec 2005
	350 µg m ⁻³ not to be exceeded more than 24 times a year	1 hour mean	31 Dec 2004
	125 µg m ⁻³ not to be exceeded more than 3 times a year	24 hour mean	31 Dec 2004

Note: ¹ by which to be achieved by and maintained thereafter

1. Air Quality Monitoring

The London Borough of Lewisham (LBL) currently monitors air quality at 3 continuous monitoring stations. The newest monitoring station (LW4) was commissioned in 2012. A fourth station (LW3) was operational until the end of 2015, when it was decommissioned. SO₂ and O₃ monitoring was carried out at LW1 and LW2, but discontinued in October 2016. The details of the monitoring stations operational in 2018 are given below in Table B.

Monitoring of NO₂ with diffusion tubes was carried out at 50 sites in 2018, including one triplicate site co-located with the LW2 continuous monitor at New Cross. In January 2018 16 new monitoring sites were added to the network. The LBL, using the Greater London Authority's (GLA) London Atmospheric Emissions Inventory (LAEI) identified primary schools within the LBL where ambient NO₂ concentrations were approaching the AQS annual mean objective. Diffusion tubes were installed at all proposed primary school locations except St Joseph's Catholic Primary School (as this is close to construction works and the monitoring location proposed at Tidemill Academy well represents this location) and Baring Primary School (as this is very close to the existing worst-case monitoring location, L28 Baring Road). In addition, L51 is a dedicated extra site on South Circular A205 to monitor future potential increases in traffic as a result of traffic diverting onto A205 as a consequence of the London Ultra Low Emission Zone (ULEZ) expansion. L25 on Stanstead Road was decommissioned as the site had consistently low concentrations. Details of all tube diffusion tube sites in 2018 are given in Table C.

A continuous monitoring site in Honor Oak Park was opened in December 2018. The site measures PM₁₀, PM_{2.5}, modelled wind speed, modelled wind direction and modelled temperature. Results from this site will be included in the following year's report.

1.1 Locations

Table B. Details of Automatic Monitoring Sites for 2018

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA?	Distance from monitoring site 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-AQMA3	n/a	3m	3.0m	NO ₂	Chemiluminescence
LW2	Lewisham 2 (New Cross)	536241	176932	Roadside	Y-AQMA3	0	6m	2.5m	NO ₂ PM ₁₀ PM _{2.5}	Chemiluminescence TEOM-FDMS TEOM-FDMS
LW4	Lewisham 4 (Loampit Vale)	537912	175838	Roadside	Y-AQMA3	0	7m	2.5m	NO ₂ PM ₁₀	Chemiluminescence BAM

Table C. Details of Non-Automatic Monitoring Sites for 2018

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA?	Distance from monitoring site 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 St	536109	177580	Roadside	Y	5	2	2.5	NO ₂	N
L2	Bronze St	537540	177439	Urban Background	Y	0	6	2.5	NO ₂	N
L3	Grove St	536561	178471	Urban Background	Y	n/a	2	2.5	NO ₂	N
L4	Plough Way	536534	178926	Urban Background	Y	n/a	2	2.5	NO ₂	N
L5	Lee High Rd	539678	175050	Roadside	Y	0	5	2.5	NO ₂	N
L6	Le May Ave	540615	172337	Urban Background	N	0	5	2.5	NO ₂	N
L7	Bell Green	536556	171810	Roadside	Y	0	3	2.5	NO ₂	N
L8	Stondon Park	536229	174032	Roadside	Y	0	5	2.5	NO ₂	N

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA?	Distance from monitoring site 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)
L9	Ladywell Rd	537500	174925	Roadside	Y	0	3	2.5	NO ₂	N
L10	Whitburn Rd	538062	175085	Roadside	Y	1	1	2.5	NO ₂	N
L11	Sparta St	538007	176517	Roadside	Y	3	3	2.5	NO ₂	N
L12	Montague Avenue, Hilly Fields	537132	175353	Urban Background	Y	n/a	60	2.5	NO ₂	N
L13	Mayow Rd	535804	171567	Urban Background	N	0	5	2.5	NO ₂	N
L14	Boyne Rd	538482	175792	Urban Background	Y	3	1	2.5	NO ₂	N
L15	Lewisham Rd	538237	176101	Roadside	Y	0	10	2.5	NO ₂	N
L16	Loampit Vale	537740	175930	Roadside	Y	0	1.5	2.5	NO ₂	N
L17	New Cross Monitoring Station (Triplicate)	536246	176934	Roadside	Y	0	6	2.5	NO ₂	Y
L18		536246	176934	Roadside	Y	0	6	2.5	NO ₂	Y
L19		536246	176934	Roadside	Y	0	6	2.5	NO ₂	Y
L20	Hatcham Park Rd	535746	176969	Roadside	Y	1	4	2.5	NO ₂	N
L21	Brockley Rise	536133	173341	Roadside	Y	0	3	2.5	NO ₂	N
L22	Ringstead Rd	538060	173816	Urban Background	Y	3	0.5	2.5	NO ₂	N
L23	Catford Hill	537178	173365	Roadside	Y	6	0.5	2.5	NO ₂	N
L24	Hazelbank Rd	538930	172713	Urban Background	N	4	2	2.5	NO ₂	N
L25	Stanstead Rd	535530	173198	Urban Background	Y	0	10	2.5	NO ₂	N
L26	Shardloes Rd	536527	175935	Roadside	Y	3	0.5	2.5	NO ₂	N
L27	Montpelier Vale	539604	176090	Roadside	Y	2	0.5	2.5	NO ₂	N
L28	Baring Rd	540051	173769	Roadside	Y	5	0.5	2.5	NO ₂	N
L29	Holy Cross, Sangley Rd	538165	173406	Roadside	Y	0	5	2.5	NO ₂	N
L30	Christchurch, Perry Vale	535535	172679	Roadside	N	1	5	2.5	NO ₂	N

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA?	Distance from monitoring site 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)
L31	St Mary Magdalen's RC, Howson Rd	536399	175150	Urban Background	Y	2	2	2.5	NO ₂	N
L32	Grinling Gibbons, Clyde St	536944	177665	Urban Background	Y	0	2	2.5	NO ₂	N
L33	St Mary's CE, Lewisham High St	537979	174792	Roadside	Y	0	2	2.5	NO ₂	N
L34	Sydenham, Dartmouth Rd	535071	172346	Urban Background	N	0	5	2.5	NO ₂	N
L35	Kender Primary School	535447	176897	Roadside	N	N/A	2	2.5	NO ₂	N
L36	Deptford Park School	536275	178405	Roadside	Y	N/A	2	2.5	NO ₂	N
L37	St James Hatcham School	536317	176883	Urban Background	Y	N/A	N/A	2.5	NO ₂	N
L38	Beecroft Primary School	536564	174937	Roadside	N	6.3	2.0	2.55	NO ₂	N
L39	John Stainer Primary School	536308	175721	Roadside	Y	7.8	1.7	2.6	NO ₂	N
L40	Myatt Garden Primary School	536792	176432	Urban Background	Y	3.6	1.4	2.55	NO ₂	N
L41	Ashmead Primary School	537256	176353	Urban Background	Y	7.7	0.7	2.3	NO ₂	N
L42	Lucas Vale Primary School	537032	176534	Urban Background	Y	0.5	2.2	2.65	NO ₂	N
L43	Childeric Primary School	536389	177144	Urban Background	Y	6.25	2.85	2.65	NO ₂	N
L44	Sir Francis Drake Primary School	536028	178107	Roadside	Y	1	2.0	2.45	NO ₂	N
L45	Tidemill Academy	537228	177284	Roadside	Y	0.7	2.9	2.7	NO ₂	N
L46	St Margaret Lee Primary School	539416	175315	Urban Background	Y	1.2	2.3	2.6	NO ₂	N

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA?	Distance from monitoring site 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)
L47	Rathfern Primary School	536839	173211	Roadside	Y	1.95	2.05	2.5	NO ₂	N
L48	Holbeach Primary School	537433	173965	Urban Background	Y	25.2	0.9	2.55	NO ₂	N
L49	St Saviours RC Primary School	538358	175324	Urban Background	Y	3.1	2.1	2.4	NO ₂	N
L50	Rushey Green Primary School	537836	173400	Urban Background	N	-0.75	4.45	2.45	NO ₂	N
L51	290 Brownhill Rd South Circular	538803	173683	Roadside	Y	9.9	2.2	2.6	NO ₂	N
L52	St John CofE School	538285	171877	Roadside	Y	3.2	3.9	2.35	NO ₂	N
L53	Greenvale School	539319	172362	Urban Background	N	1.1	2.9	2.45	NO ₂	N

1.2 Comparison of Monitoring Results with AQOs

The results of nitrogen dioxide monitoring carried out by LBL are presented in Table D. Data from the 3 automatic monitoring stations have been fully ratified. Raw data from diffusion tube monitoring sites have been adjusted for bias using the national bias adjustment factor of 0.92. A local bias adjustment factor of 0.91 was calculated based on the triplicate tubes co-located with LW2 continuous monitoring station, the calculations are shown in Appendix A2. However, the national bias adjustment factor was used to be conservative.

Data capture for all automatic monitoring sites was greater than 75%. All diffusion tube locations reported data capture rates of 75% or greater, except L20 Hatcham Park Road. The annual mean concentration for L20 has been annualised. Details of the annualisation calculations are presented in Appendix A3.

The diffusion tube monitoring results presented are after adjustments for bias and “annualisation”. A small number of diffusion tubes are not located at relevant exposure, such as on kerbside lampposts as opposed to building facades. In order to maintain consistency for analysing diffusion tube trends over several years, the NO₂ concentrations presented in Table D have not been distance-corrected. However, distance corrected diffusion tube concentrations have been calculated: these are discussed in Appendix A and are presented in tabular form in Appendix B.

Table D. Annual Mean NO2 Ratified and Bias-adjusted Monitoring Results ($\mu\text{g m}^{-3}$)

Site ID	Site type	Valid data capture for monitoring period % ^a	Valid data capture 2018 % ^b	Annual Mean Concentration ($\mu\text{g m}^{-3}$)						
				2012 ^c (Bias Adjustment Factor = 1.01)	2013 ^c (Bias Adjustment Factor = 1.00)	2014 ^c (Bias Adjustment Factor = 0.97)	2015 ^c (Bias Adjustment Factor = 1.02)	2016 ^c (Bias Adjustment Factor = 1.03)	2017 ^c (Bias Adjustment Factor = 1.00)	2018 ^c (Bias Adjustment Factor = 0.92)
LW1 (CM)	Urban Background (Automatic)	99.2	99.2	50	48	54	43	44	43.1	37.5
LW2 (CM)	Roadside (Automatic)	95.9	95.9	50	51	42	47	46	48.9	42.1
LW4 (CM)	Roadside (Automatic)	99.1	99.1	64 ^c	57	56 ^c	51	58 ^c	53.9	46.4
L1	Roadside	100	100	37.8	38.6	38.0	33.1	34.3	31.6	29.2
L2	Urban Background	100	100	31.0	29.6	29.2	28.1	30.3	29.0	25.2
L3	Urban Background	100	100	37.9	37.1	35.9	34.3	36.3	32.7	30.6
L4	Urban Background	100	100	34.9	37.3	34.9	34.4	33.6	31.7	28.8
L5	Roadside	100	100	39.0	43.3	37.7	33.4	36.1	30.0	29.9
L6	Urban Background	100	100	37.5	38.3	36.0	35.2	34.8 ^c	32.2	30.5
L7	Roadside	100	100	53.4	53.8	55.4	48.3	49.2	43.3	38.2
L8	Roadside	92	92	44.8	48.6	42.2	42.2	42.4	38.6	33.5
L9	Roadside	100	100	40.6	40.5	40.8	37.5	39.6	35.1	36.2
L10	Roadside	92	92	44.0	46.2	40.3	39.4	41.5	37.3	38.0
L11	Roadside	92	92	40.0	47.4	38.6	36.1	37.4	34.8	33.6
L12	Urban Background	100	100	33.7	34.9	30.5	26.9	27.9	26.4	25.3

Site ID	Site type	Valid data capture for monitoring period % ^a	Valid data capture 2018 % ^b	Annual Mean Concentration ($\mu\text{g m}^{-3}$)						
				2012 ^c (Bias Adjustment Factor = 1.01)	2013 ^c (Bias Adjustment Factor = 1.00)	2014 ^c (Bias Adjustment Factor = 0.97)	2015 ^c (Bias Adjustment Factor = 1.02)	2016 ^c (Bias Adjustment Factor = 1.03)	2017 ^c (Bias Adjustment Factor = 1.00)	2018 ^c (Bias Adjustment Factor = 0.92)
L13	Urban Background	100	100	32.3	33.3	28.3	27.3	27.3	26.6	23.8
L14	Urban Background	92	92	34.5	34.7	31.2	29.9	31.1	29.2	26.3
L15	Roadside	100	100	44.3	47.6	46.5	46.6	45.2	36.3	33.9
L16	Roadside	100	100	55.0	58.6	52.5	48.7	50.5	44.1	40.4
L17	Roadside (Triplicate)	92	92	58.4	56.5	49.1	50.6	52.1	48.9	42.3
L18	Roadside (Triplicate)	100	100	56.0	54.0	51.1	49.1	50.8	48.9	42.4
L19	Roadside (Triplicate)	100	100	<u>63.2</u>	50.5	49.6	49.7	52.4	48.9	43.0
L20	Roadside	67	67	45.4	44.7	43.6	43.2	42.8	38.6	37.7
L21	Roadside	100	100	54.0	54.0	54.6	50.3	51.5	49.7	41.2
L22	Urban Background	100	100	34.3	33.5	32.2	30.3	31.3	31.9	28.1
L23	Roadside	100	100	56.5	59.9	55.1	51.8	49.9	44.5	43.1
L24	Urban Background	100	100	35.1	36.3	35.6	32.4	34.6	33.3	32.8
L25	Urban Background	-	-	28.3	27.5	25.5	23.3	25.0	23.1	-
L26	Roadside	100	100	48.0	51.9	53.7	47.2	46.4	43.5	39.0
L27	Roadside	100	100	37.3	37.2	36.2	57.1	55.3	52.4	43.5
L28	Roadside	100	100	59.3	<u>61.9</u>	51.0	58.6	58.1	55.5	46.3
L29	Roadside	92	92	32.1	33.3	33.0	28.6	30.3	29.0	28.1

Site ID	Site type	Valid data capture for monitoring period % ^a	Valid data capture 2018 % ^b	Annual Mean Concentration ($\mu\text{g m}^{-3}$)						
				2012 ^c (Bias Adjustment Factor = 1.01)	2013 ^c (Bias Adjustment Factor = 1.00)	2014 ^c (Bias Adjustment Factor = 0.97)	2015 ^c (Bias Adjustment Factor = 1.02)	2016 ^c (Bias Adjustment Factor = 1.03)	2017 ^c (Bias Adjustment Factor = 1.00)	2018 ^c (Bias Adjustment Factor = 0.92)
L30	Roadside	100	100	31.1	34.3	31.3	32.3	31.3	28.1	28.7
L31	Urban Background	92	92	25.4	29.6	25.7	23.5	26.2	24.4	25.9
L32	Urban Background	100	100	29.6	31.6	30.6	28.6	33.0	28.4	27.4
L33	Roadside	92	92	51.4	51.0	44.6	41.8	44.6	40.7	38.2
L34	Urban Background	100	100	30.4	34.0	31.8	27.0	27.6	26.4	23.8
L35	Roadside	100	100	-	-	-	-	-	31.3	27.1
L36	Roadside	92	92	-	-	-	-	-	43.1	39.2
L37	Urban background	100	100	-	-	-	-	-	29.2 ^c	27.4
L38	Roadside	92	92	-	-	-	-	-	-	29.7
L39	Roadside	100	100	-	-	-	-	-	-	30.0
L40	Urban Background	100	100	-	-	-	-	-	-	23.7
L41	Urban Background	100	100	-	-	-	-	-	-	24.0
L42	Urban Background	100	100	-	-	-	-	-	-	26.8
L43	Urban Background	92	92	-	-	-	-	-	-	26.6
L44	Roadside	100	100	-	-	-	-	-	-	35.2
L45	Roadside	100	100	-	-	-	-	-	-	33.4

Site ID	Site type	Valid data capture for monitoring period % ^a	Valid data capture 2018 % ^b	Annual Mean Concentration ($\mu\text{g m}^{-3}$)						
				2012 ^c (Bias Adjustment Factor = 1.01)	2013 ^c (Bias Adjustment Factor = 1.00)	2014 ^c (Bias Adjustment Factor = 0.97)	2015 ^c (Bias Adjustment Factor = 1.02)	2016 ^c (Bias Adjustment Factor = 1.03)	2017 ^c (Bias Adjustment Factor = 1.00)	2018 ^c (Bias Adjustment Factor = 0.92)
L46	Urban Background	100	100	-	-	-	-	-	-	24.9
L47	Roadside	100	100	-	-	-	-	-	-	27.5
L48	Urban Background	100	100	-	-	-	-	-	-	27.3
L49	Urban Background	100	100	-	-	-	-	-	-	27.4
L50	Urban Background	100	100	-	-	-	-	-	-	24.3
L51	Roadside	92	92	-	-	-	-	-	-	53.5
L52	Roadside	92	92	-	-	-	-	-	-	33.2
L53	Urban Background	100	100	-	-	-	-	-	-	22.7

Notes: Exceedance of the NO₂ annual mean AQO of 40 $\mu\text{g m}^{-3}$ are shown in **bold**.

NO₂ annual means in excess of 60 $\mu\text{g m}^{-3}$, indicating a potential exceedance of the NO₂ hourly mean AQS objective are shown in bold and underlined.

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

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

^c Means should be "annualised" in accordance with LLAQM Technical Guidance, if valid data capture is less than 75%

The 2018 annual mean NO₂ concentrations decreased at all three of the automatic monitoring sites from the previous year. However, two of the three locations still exceeded the annual mean NO₂ AQO of 40 $\mu\text{g m}^{-3}$. The highest concentration was 46.4 $\mu\text{g m}^{-3}$ at LW4. Between 2012 and 2018 there has generally been a downward trend in annual mean NO₂ concentrations at the automatic monitoring stations. At LW1 annual mean NO₂ concentrations have decreased from 50 $\mu\text{g m}^{-3}$ in 2012 to 37.5 $\mu\text{g m}^{-3}$. A similar trend is seen in the data from LW4 where annual mean NO₂ concentrations have decreased from 64 $\mu\text{g m}^{-3}$ in 2012 to 46.4 $\mu\text{g m}^{-3}$ in 2018.

The annual mean NO₂ AQO of 40µgm⁻³ was exceeded at 7 individual diffusion tube locations in 2018, which is fewer than in 2017 despite the addition to the network of several new monitoring locations in 2018. There are no new exceedances compared to 2017. Three diffusion tube locations recorded concentrations below the NO₂ AQO for the first time since 2012. These sites were L7 (38.2µgm⁻³), L26 (39.0µgm⁻³) and L33 (38.2µgm⁻³). The highest concentration was measured at site L51 at 290 Brownhill Rd South Circular (53.5µgm⁻³).

In terms of temporal trends there is considerable variability between the diffusion tube monitoring locations over the 2012 to 2018 period, although there was an overall decrease in concentrations between 2012 and 2018 at most sites. The triplicate tubes co-located with LW2 continuous monitor at New Cross (L17, L18, L19) showed evidence of generally decreasing NO₂ from 2012 to 2018, although the greatest reduction occurred between 2017 and 2018. The increase in NO₂ at location L27 since 2015 is due to the site having been re-located to a worst-case location in early 2015. NO₂ concentrations at diffusion tube sites in 2018 were lower at all sites compared to 2017, with the exception of L9, L10, L30 and L31 which saw small increases.

Over the last 7 years annual mean NO₂ concentrations at all urban background sites have remained below the annual mean NO₂ AQO of 40µgm⁻³. Locations that have exceeded the AQO throughout the 2012 to 2018 period have tended to be roadside sites. On average, annual mean NO₂ concentrations at roadside and urban background monitoring locations have decreased between 2012 and 2018, albeit with fluctuations from year to year, which is principally due to meteorological factors.

Table E. NO₂ Automatic Monitor Results: Comparison with 1-hour Mean Objective

Site ID	Valid data capture for monitoring period % ^a	Valid data capture 2018 % ^b	Number of Hourly Means > 200 µg m ⁻³						
			2012 ^c	2013 ^c	2014 ^c	2015 ^c	2016 ^c	2017 ^c	2018 ^c
LW1	99.2	99.2	2	3	0	0	0	0	0
LW2	95.9	95.9	0	0	0	7	0	0	0
LW4	99.1	99.1	16 (221) ^c	26	5 (180) ^c	0	9 (184) ^c	4	0

Notes: Exceedance of the NO₂ short term AQO of 200 µg m⁻³ over the permitted 18 days per year are shown in **bold**.

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

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

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

In 2018, no exceedances of the hourly mean NO₂ AQO value (200µgm⁻³) were recorded at any of the three automatic monitoring locations. In the past 7 years there has been no obvious trend, however all locations have tended to stay within the AQO of 200µgm⁻³ fewer than 18 times a year since 2014.

At LW1, the urban background site, there have been three or fewer exceedances of the hourly NO₂ AQO value in any one year since 2012, with no exceedances recorded from 2014 onwards.

At LW2, a roadside site, during the 2012 to 2018 period, hourly averaged NO₂ concentrations greater than 200µgm⁻³ have only been recorded in 2015 (7 hours).

At LW4, also a roadside site, in 2013 there were 26 hours exceeding the hourly NO₂ AQO value, therefore the 1-hour mean objective was not achieved. In 2012, the first year of monitoring at this location, there were 16 hours exceeding the hourly NO₂ AQO value; however due to data capture being below 75% in 2012 the 99.8th percentile of hourly NO₂ concentrations was calculated for comparing against the 1-hour mean objective. The 99.8th percentile result was 221 µgm⁻³, indicating that the 1-hour mean objective was likely to have been exceeded. Since 2014 the 1-hour mean NO₂ objective has been achieved at LW4.

Table F. Annual Mean PM10 Automatic Monitoring Results ($\mu\text{g m}^{-3}$)

Site ID	Valid data capture for monitoring period % ^a	Valid data capture 2018 % ^b	Annual Mean Concentration ($\mu\text{g m}^{-3}$)						
			2012 ^c	2013 ^c	2014 ^c	2015 ^c	2016 ^c	2017 ^c	2018 ^c
LW2	96.2	96.2	26	23	23 ^c	23	24	22.8	21.2
LW4	97.4	97.4	24	28	25 ^c	17	26 ^c	20.9	18.6

Notes: Exceedance of the PM₁₀ annual mean AQO of 40 $\mu\text{g m}^{-3}$ are shown in **bold**. Data capture rates are calculated based on hourly data.

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

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

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

The annual mean PM₁₀ concentrations recorded at the two automatic monitoring stations that measure particulate matter were well below the AQO of 40 $\mu\text{g m}^{-3}$ in 2018, and for all years since 2012. In 2018, LW2 recorded the highest PM₁₀ annual mean concentration of 21.2 $\mu\text{g m}^{-3}$. Both sites showed a decrease in 2018 from 2017 concentrations. The highest recorded annual mean PM₁₀ concentration during the 2012 to 2018 period was 28 $\mu\text{g m}^{-3}$ at LW4 in 2013.

Over the last 7 years annual mean PM₁₀ concentrations at LW2 automatic monitoring station has been stable with only small changes from one year to the next. At LW4 there have been larger variations in concentrations from year to year, with a notable decrease in 2015 compared to 2014 and 2016.

Table G. PM10 Automatic Monitor Results: Comparison with 24-Hour Mean Objective

Site ID	Valid data capture for monitoring period % ^a	Valid data capture 2018 % ^b	Number of Daily Means > 50 µg m ⁻³						
			2012 ^c	2013 ^c	2014 ^c	2015 ^c	2016 ^c	2017 ^c	2018 ^c
LW2	95.3	95.3	15 (47) ^c	15	14 (38) ^c	8	9	11	4
LW4	97.8	97.8	3 (36) ^c	19	13 (41) ^c	1	18 (47) ^c	7	1

Notes: Exceedance of the PM₁₀ short term AQO of 50 µg m⁻³ over the permitted 35 days per year or where the 90.4th percentile exceeds 50 µg m⁻³ are shown in **bold**. Where the period of valid data is less than 85% of a full year, the 90.4th percentile is shown in brackets after the number of exceedances. Data capture rates are calculated based on daily average PM₁₀ concentration data

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

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

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

Both LW2 and LW4 achieved the 24-hour mean PM₁₀ AQO in 2018. In all years since 2012, both of the PM₁₀ monitoring locations have achieved the 24-hour mean PM₁₀ AQO. The highest number of exceedances of the daily mean PM₁₀ objective value (50 µgm⁻³) was 18 days in 2016 at LW4. This is well within the 35 permitted exceedances per year for compliance with the AQO. However, due to data capture at LW4 in 2016 being less than 75%, the 90.4th percentile of daily mean PM₁₀ concentrations was calculated (47 µgm⁻³). This value, which is less than 50 µgm⁻³, indicates the AQO was likely to have been achieved. Both sites showed a decrease in the number of daily means below the objective value in 2018 compared to 2017.

Table H. Annual Mean PM2.5 Automatic Monitoring Results ($\mu\text{g m}^{-3}$)

Site ID	Valid data capture for monitoring period % ^a	Valid data capture 2018 % ^b	Annual Mean Concentration ($\mu\text{g m}^{-3}$)						
			2012 ^c	2013 ^c	2014 ^c	2015 ^c	2016 ^c	2017 ^c	2018 ^c
LW2	83.9	83.9	-	17.6	16.5	15.5	18.9	15.5	15.0

Notes: Exceedance of the PM_{2.5} annual mean AQO of 25 $\mu\text{g m}^{-3}$ are shown in **bold**.

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

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

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

Since 2013, the LBL has monitored PM_{2.5} concentrations at site LW2. In 2018, the annual mean PM_{2.5} concentration measured was 15.0 $\mu\text{g m}^{-3}$, which is below the annual mean PM_{2.5} target value of 25 $\mu\text{g m}^{-3}$; this is a decrease from the value of 15.5 $\mu\text{g m}^{-3}$ recorded in 2017 and is the lowest annual mean PM_{2.5} concentration at this site since monitoring began in 2013. The annual mean PM_{2.5} concentration has been below the annual mean PM_{2.5} target value in all years since monitoring commenced.

2. Action to Improve Air Quality

London Borough of Lewisham contains eight Air Quality Focus Areas (AQFAs), which are areas with some of the poorest air quality in Lewisham, and these are the focus of targeted actions to improve air quality. The AQFAs in LBL are:

125. Brockley Cross

126. Catford Road and Catford Gyratory

127. Deptford Town Centre

128. Forest Hill and Perry Vale Junction

129. St Mildreds Road (A205) from Hither Green Lane to Burnt Ash Hill (A2212)

130. Honor Oak Park junction Brockley Road

131. Lewisham Loampit Vale and Lewisham High Street

132. New Cross Gate and New Cross

133. Brockley Road (B218) between Adelaide Avenue and Wickham Road

A map of the focus areas can be found in Appendix A, Figure A.7.

2.1 Air Quality Action Plan Progress

Table J provides a brief summary of London Borough of Lewisham progress against the Air Quality Action Plan, showing progress made this year. New projects which commenced in 2018 are shown at the bottom of the table.

2018 was an exciting year for the borough in focusing on air quality. The Mayor appointed his own Air Quality Champion who has continued to raise the profile, through Local Assembly meetings. In March 2018 Lewisham held an Air Quality Conference open to the public and a School Air Quality Event. During these events the new Lewisham Air app was launched. Work around schools, included anti-idling events, STARS and a public health led school Superzone project. Projects within Air Quality Focus Areas continued including the MAQF funded Evelyn Corridor Construction Logistics Plan and the DEFRA funded Cleaner Air Village project managing emissions from businesses within Lewisham Town Centre and Deptford High Street.

Lewisham's Air Quality monitoring was expanded with the introduction of an additional 16 diffusion tube locations (bringing the total to 51 locations) and a contribution made by the Council towards the installation of an Air Quality Supersite, at Honour Oak Park Sports Ground, which started taking measurements from December 2018. This is a new million-pound air pollution research lab, with primary funding from Natural Environment Research Council (NERC). In collaboration with Tideway project who owned the Air Quality Station near Deptford Church Street, we agreed to take over ownership and in 2019 this new site for Lewisham will be commissioned. The original PM₁₀ monitor has been upgraded to monitor PM_{2.5}. This will increase the number of PM_{2.5} reference sites within the borough to two (three including the Honor Oak Park, Kings Supersite).

The 'Take Care of our Air' publicity campaign was launched in 2018, which included details on air quality in a Lewisham Life article, in January 2018, encouraging people to sign up to the Lewisham Council pledge: <https://lewisham.gov.uk/myservices/environment/air-pollution/sign-our-clean-air-pledge> . On Wednesday March 28th 2018, Lewisham News Shopper promoted the Lewisham Air app to all local residents. The News Shopper is delivered free to all residents in the borough. In February 2019 over 500 billboards throughout the borough displayed the image (see cover).

Table I. Delivery of Air Quality Action Plan Measures

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
1	Emissions from developments and buildings	Ensuring emissions from construction are minimised	42 Construction Logistics Plan applications and 47 Construction (Environmental) Management Plan discharged. A new Local Plan is being developed in 2018. Environmental Protection Policies are being considered as part of this process and these will be informed by policies developed in the new London Plan. As part of the process wording for the conditions/controlling emissions from construction will be considered, along with the review and development of current guidance.	Lewisham is currently in the process of reviewing its Local Plan, having regard to changes in the higher level policy framework introduced since the adoption of its Core Strategy (2011) and the Development Management Development Plan Document (DPD) (2014). This includes consideration of the London Plan (2016) and draft new London Plan (2017) and National Planning Policy Framework (NPPF) (2019). Detailed policies on environmental protection and management will be updated taking into account these higher level policies. It is expected that a Regulation 18 stage public consultation on a 'preferred approach' document will be published in early 2020.
2	Emissions from developments and buildings	Ensuring enforcement of Non-Road Mobile Machinery (NRMM) air quality policies	Referred to Table K in 2017 ASR. The development of policy in the new London Plan will strengthen enforcement of NRMM.	Register of NRMM are secured in planning conditions with Construction Environmental Management Plan's (CEMPs).

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
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)	<p>An energy assessment is required for every major application. An energy assessment must include:</p> <ul style="list-style-type: none"> - a response to the 3 stages of the Mayor's Energy hierarchy demonstrating compliance with each stage - a calculation of the baseline energy demand and carbon dioxide emissions (with evidence of how it has been calculated) - details of the performance of the building - a feasibility study of all renewable technologies - the proposed technical solution - an explanation of where and why the proposed development does not meet identified standards. - a fully completed 'Monitoring for Sustainability' form (can be downloaded from the Council's website: http://www.lewisham.gov.uk/myservices/planning/policy/Documents/SustainabilityMonitoringForm.pdf). 	Lewisham is currently in the process of reviewing its Local Plan, having regard to changes in the higher level policy framework introduced since the adoption of its Core Strategy (2011) and the Development Management DPD (2014). This includes consideration of the London Plan (2016) and draft new London Plan (2017) and NPPF (2019). Detailed policies on environmental protection and management will be updated taking into account these higher level policies. It is expected that a Regulation 18 stage public consultation on a 'preferred approach' document will be published in early 2020.
4	Emissions from developments and buildings	Enforcing Air Quality Neutral policies	<p>Referred to Table K in 2017 ASR</p> <p>The development of policy in the new London Plan will strengthen the Air Quality Neutral requirements.</p>	The new London Plan policy requirements for Air Quality Neutral are expected to be included in the revised Council's Local Plan Policies.

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
5	Emissions from developments and buildings	Ensuring adequate, appropriate, and well-located green space and infrastructure is included in new developments	<p>Public realm improvements provided in community green space at: GARAGES AND GREEN SPACE (AT REAR OF 182-244 WOOD VALE), BUCKLEY CLOSE, LONDON, SE23 3EQ. In addition to this, Quietway routes provided in 2016 improved aesthetics and greening and had initial increase in use of 38% over 2017.</p> <p>The Council is encouraging community tree planting: https://www.lewisham.gov.uk/myservices/environment/trees/Pages/Tree-planting-scheme.aspx. A list of Tree species for air quality improvement has not been produced as there is only general advice on species available i.e. Due to the larger total surface area of needles, coniferous trees have a larger filtering capacity than trees with deciduous leaves². This capacity is also greater because the needles are not shed during the winter, when the air quality is usually worse. However, coniferous trees are sensitive to air pollution and deciduous trees are better at absorbing gases². A mix of species therefore seems to be the best alternative. Air pollution filtering capacity increases with more leaf area and is thus higher for trees than bushes or grassland³.</p>	<p>There have been 620 street/community trees added in the last 3 and half years within the borough of Lewisham. Locations and species are available on request.</p> <p>https://lewisham.gov.uk/myservices/environment/trees/how-to-get-new-trees-planted</p> <p>Provision of open space approved within</p> <ol style="list-style-type: none"> 1. LAND BOUNDED BY GROVE STREET, DRAGOON STREET AND EVELYN STREET, OXESTALLS ROAD, LONDON, SE8.EXCALIBUR ESTATE REGENERATION AREA, BAUDWIN ROAD, LONDON, SE6 2. HEATHSIDE & LETHBRIDGE ESTATES - (PHASE 4), LEWISHAM ROAD, BLACKHEATH HILL, LONDON, SE10 7QR 3. FAIRCHARM TRADING ESTATE, CREEKSIDE, LONDON, SE8 3DX

² Stolt, E., 1982. The ability of vegetation in decreasing exposure to car fumes. (quoted from Svensson and Eliasson 1997, in Swedish).

³ Givoni, B., 1991. Impact of planted areas on urban environmental quality: a review. Atmos. Environ. 25B (3), 289– 299.

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
6	Emissions from developments and buildings	Ensuring that Smoke Control Zones are appropriately identified and fully promoted and enforced	Lewisham focused on the Lewisham Mayor's Air Quality campaign (See 2.1 introduction to table) Publicity around Smoke Control Zones is now planned for Winter 2018, where we'll work with the London Mayor in providing information and requirements to reduce the air quality impact.	<p>The Lewisham website has now been updated and information around Smoke Control Zones is easier to find and view: https://lewisham.gov.uk/myservices/environment/air-pollution/rules-for-chimneys--bonfires-and-open-fires. Some work carried out to ensure all text on page will pick up enquiries that access the website from google search engine.</p> <p>There was a publicity campaign in February 2019, which included aspects of smoke control (see 2.1 introduction to table).</p>
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's Warm Homes Healthy People fuel poverty advice service was delivered in 250 homes in 2017/18. Actions taken by residents reduced emission by 83 tCO ₂ e. In 2018/19 the project will extend to cover Bexley, Bromley, Greenwich, Lewisham and Southwark with support from the GLA. Lewisham, in partnership with South East Community Energy and Retrofit Works, are enabling residents to access energy company funding for heating and insulation improvements, in 2017/18 152 measures were installed.	<p>In 2018/19 Lewisham Council led a partnership with Bexley, Bromley, Greenwich and Southwark to establish a coordinated 5 borough fuel poverty project, offering practical advice through home visits and events across south east London to over 875 residents with 450 home visits delivered.</p> <p>Lewisham has also supported 464 vulnerable households to access external grant funding for heating, insulation and ventilation works. It is estimated that in 2018/19 the project has brought in £600,000 funding</p>

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
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	Works recommended in EPC inspection report to ensure property has a rating of 'E' or above is included in licensing conditions of HMOs. Enforcement action carried out if EPC forms not submitted. Also, where the Council procure properties for use by the Council for temporary accommodation this also meets a minimum EPC rating of 'E'.	<p>All properties other than those on an exemption list must now legally have an EPC of E or above to legally rent a property for residential use.</p> <p>Where a property is inspected without an EPC of E or above action is taken to ensure the landlord improves its efficiency.</p> <p>Work has commenced to employ 2 compliance officers to work with the procurement team to ensure all relevant documentation including gas/electrical safety certificates and fire risk assessments are kept up to date. These officers will also ensure properties have and EPC of E or above.</p> <p>The strategic plan has committed to introduce new licensing schemes that will target more HMO types and if agreed all single occupancy private rented property. As part of this process consideration is being given to the viability of offering discounts to landlords that show a significant commitment reducing the use of energy and carbon emissions.</p>

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
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.	The action has not been implemented due to staffing changes and reorganisation but has been raised with the new team management and will be considered in any future reviews of the Council's housing assistance policy and an update will be provided in the next ASR. However, from 1st April with Empty Homes Grants (Discretionary grant) officers will make sure that properties brought back into use under these grants meet the Government's requirement of at least a minimum EPC rating of 'E' on completion. The mandatory Disabled Facilities Grant helps homeowners and tenants to fund home adaptations and this is not something the Council can currently include.	In line with legislation all properties brought back into use for private renting by discretionary grants are required to meet a minimum EPC standard of E. When assessing disabled facilities grants consideration is given to the eligibility of further support to improve energy rating levels.
8	Public health and awareness raising	Ensure that Directors of Public Health (DsPHs) 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 discussed at the Health Protection Committee (HPC) meeting held on 12 February and was presented to the DMT for Community Services on 17 th May and signed off. The Director of Public Health (DPH) is part of this management team.	The ASR was presented and discussed at the HPC meeting held on 3 July 2019 and was signed off. The ASR was presented to the DMT for Community Services on 20 th June and signed off. The DPH sits in both the groups. The DPH is represented at both Lewisham Air Quality Working and Strategic groups.
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 Lewisham Mayor's Air Quality campaign (See 2.1 within the ASR 2017 introduction to table), included the appointment of the Mayor's Air Quality Champion.	Councilor Louise Krupski is the Clean Air Champion for Lewisham Council. Councilors Brenda Dacres and Sophie McGeevor are Cabinet Members for Environment and Transport (job share). They are all very engaged with the Air Quality work in Lewisham.

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
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 DsPH when projects are being developed.	The Healthy Weight Strategy developer in 2017 has as one of its main aims to ‘promote an environment that supports healthy weight and wellbeing as the norm, making it easier for our residents to choose healthier diets and active lifestyles.’ There are synergies to air quality improvement with a more active lifestyle and these links are being developed.	Lewisham has signed up to the London Devolution (Public Health England) School Superzones pilot project. The aim of the project is to create a healthier and safer environment for children to live, learn and play. Superzones are a 400m radius around schools in which actions are taken to protect children’s health and encourage healthy behaviours through interventions that target unhealthy food and drink sales; advertisements; alcohol; smoking; gambling; air quality; physical inactivity and crime (added by Lewisham). Air quality has the top priority for this piece of work as the identified school, Haseltine Primary School was one of the 3 primary schools in Lewisham identified for Mayor of London’s Air Quality School Audit. The school is also quite engaged and was keen to be involved in this process.
10	Public health and awareness raising	Director of Public Health to have responsibility for ensuring their Joint Strategic Needs Assessment (JSNA) has up to date information on air quality impacts on the population.	JSNA for Air Quality was refreshed in 2017.	JSNA for Air Quality was refreshed and signed off by the JSNA Steering Group and was published in February 2018.

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
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.	Provided Lewisham Health Protection Committee air quality updates. The Health and Wellbeing Strategy is still being drafted.	Lewisham Health Protection Committee (HPC) is chaired by 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 ASR was presented to the DMT for Community Services. The Director of Public Health is part of this management team.	The Statutory Annual Status Reports was presented and discussed at the HPC meeting held on 3 July 2019 and was signed off. The ASR was presented to the DMT for Community Services on 20 th June and signed off. 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 disseminate amongst transport team.	Provided brief through Bi monthly Air Quality Working Groups and also Strategic Air Quality Board meetings every quarter. Also separate focused meetings with transport in relation to electric vehicle provision and school projects.	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 car use. It also supports the provision of electric vehicle charging infrastructure, as an option where the car is used. See Clean Transport Section.

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
14	Public health and awareness raising	Engagement with businesses.	<p>Number of applications for the discharge of the DSP condition approved: 11 applications.</p> <p>Promoted deliverBEST at the 2017 Mayor's Business Award. As a result of this, one Lewisham-based business (Fronte) linked in with the scheme as they promote their new sustainable delivery option (see: https://www.fronte.co.uk/sustainable-parcel-delivery-with-click-and-collect/), along with contacts with many local businesses.</p> <p>DEFRA bid application for Cleaner Villages was successful, which will provide engagement with businesses with two of the Air Quality Focus Areas, i.e. Lewisham Town Centre and Deptford Church Street. See ID 46 and 47 for new action to report for next ASR.</p>	<p>Air Quality Grant 2018-19 Lot 1 – Cleaner Air Villages 2: Cross River Partnership will be leading on this project with action to reduce emissions resulting from the delivery of goods and services to businesses in 13 of London's most polluted town centres ('villages'). <i>Lewisham is the lead authority</i> along with 6 boroughs (Lambeth, Hammersmith and Fulham, Royal Borough of Kensington and Chelsea, Camden, Westminster and Wandsworth), as well as in Cadogan Estates (landowners), and Euston Town Business Improvement District (BID). For Lewisham the focus will continue to be on Lewisham town centre and Deptford High Street.</p>

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
15	Public health and awareness raising	Promotion of availability of airTEXT and Lewisham Air App.	Total subscribers to airTEXT in Lewisham in 2017 was 173. In 2017 continued to target the same groups as last year. In 2017 the Lewisham Air app was developed. 'The promotion of availability of airTEXT' action next year also to include 'The promotion of availability of Lewisham Air app' action. Launched in March 2018, the numbers downloaded have risen to 300 (end of April).	Lewisham Air App was launched in the Lewisham Air Quality Conference in March 2018. Public Health is promoting the 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 carers. This is along with sign up to the Air Quality Pledge in the Lewisham Council Website. The Lewisham Air App is also promoted to the respiratory nurses as well to raise awareness in the COPD & Asthma patients. In 2019, will be working with the Respiratory Nurse Consultant to update the Asthma and COPD Care Plans which will include information on the app to be issued to patients.
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.	Schools continue to take part in the STARS programme. More targeted work is planned for 2018/19 to look at detailed travel planning and support to reduce the number of parents driving to school. A before and after evaluation will be monitored and known behaviour change models will be used to maximize change.	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.

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
17	Public health and awareness raising	Air quality at schools	Through the Mayor's Air Quality campaign, we have worked with schools to develop the School Travel Plan. This has included the running of idling action events at three schools and the procurement of 50 anti-idling signs that will be introduced at designated schools in 2018. In 2017, work was carried out in the development of a School Air Quality Accreditation scheme for Lewisham, which is being piloted and planned to launch in 2018/19 academic year. A new School Travel Plan officer is to be appointed to work with schools from 2018 and an Air Quality apprentice is working with them to visit and support schools.	An anti-idling banner competition was run with banners being placed at participating schools and car parks in the borough. School Travel plans are being submitted with AQ activities being monitored and awards will be made to schools that have achieved higher than average AQ actions through the school year.
17A	Public health and awareness raising	Air quality at schools	All primary schools are offered Bikeability for their Year 5/6 pupils. Balance Bike training was carried out at 20 schools. Scooter training courses are booked for the Summer term in 2018.	All schools are offered Bikeability training. Balance bike and/or Scooter training is an annual offer to schools for their lower school pupils.
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.	A programme of internal staff training was provided in 2017 with a specific focus on air quality and procurement delivery.	During 2018 a new Social Value policy at Lewisham, was developed and adopted on the 6 February 2019 which covers these requirements and therefore will be included (where relevant) in each procurement under the relevant KPI for Social Value. The standardised templates will also cross-refer to the policy.

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
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).	A programme of internal staff training was provided in 2017 with a specific focus on air quality and procurement delivery.	Over 2018 a new Social Value policy at Lewisham, was developed and adopted on the 6 February 2019 which covers these requirements and therefore will be included (where relevant) in each procurement under the relevant KPI for Social Value. The standardised templates will also cross-refer to the policy.
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.	Considered as a potential action as part of the Local Implementation Plan (LIP) 3 process, which will develop a transport strategy and implementation plan for the borough. Draft document for consultation in Autumn 2018, with final version approved by February 2019.	Still waiting on the results of the Mayor's Air Quality Fund (MAQF) 2019 -2021, but Lewisham are part of the proposed consolidation centre developed by Croydon Council bid application which has been developed over 2018.
21	Delivery servicing and freight	Virtual Loading Bays and priority loading for ultra-low emission delivery vehicles.	This has been reviewed but is not currently seen as being appropriate given the logistics of delivery and servicing areas within the borough.	As before this type of traffic restriction is currently difficult to implement in the borough due to the reasons stated before. 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.

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
22	Borough fleet actions	Join the Fleet Operator Recognition Scheme (FORS) for the borough's own fleet and obtain Gold accreditation.	<p>No longer considered necessary to join the FORS scheme due to the admin burden that it will place on the reduced staff levels. Also question the benefits in terms of improving air quality as the rolling driver CPC training includes in the syllabus "driving effectively, efficiently to reduce emissions and improve safety."</p> <p>This action will be discontinued</p>	This Action has been discontinued, and will be removed from the next report. See previous years consideration.
23	Borough fleet actions	Increasing the number of hydrogen, electric, hybrid, bio-methane and cleaner vehicles in the borough's fleet.	Added to the fleet another HY-BRID refuse vehicle to work on Lewisham market; this takes the total to 2.	<p>25 petrol/hybrid vehicles now on fleet plus 2 hybrid refuse vehicles.</p> <p>Considering electric refuse vehicles and are reviewing options for the future.</p>
24	Borough fleet actions	Accelerate uptake of new Euro VI vehicles in borough fleet.	<p>Reduced the order to 33 from 48 due to fleet rationalising and route analysis.</p> <p>The next step is to replace 15 Euro 5 refuse trucks and 49 Euro 5 buses before the ULEZ deadline (Oct 2020), which may reduce due to further rationalisation. Once this next order is placed and delivered all of LBL fleet will be at Euro 6.</p> <p>Any short-term hired in vehicles that are required are always Euro 6 as standard.</p>	<p>75 Euro 6 vehicles on order:</p> <p>24 refuse vehicles</p> <p>50 buses</p> <p>1 tipper</p> <p>Fleet will be 100% compliant with ULEZ by the October deadline .</p>

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
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.	Continue to run Driver Certificate of Professional Competence (CPC) training which includes in the syllabus “driving effectively, efficiently to reduce emissions and improve safety.”	Training on-going to meet legal requirements.
26	Localised solutions	Improvement and Introduction of green spaces in new developments through the Planning process by conditions and S106 obligations.	See Action 5 for further information. Also, new linear park for Pepys Estate being extended, opening up the former canal bridge, to connect the Deptford Wharves development. Proposals for improving Beckenham Place Park in progress over 2017. Lewisham Gateway confluence park planned progress 2018/2019.	Lewisham Gateway confluence park is now to open in June 2019. 203 parkland trees and 3030 whips have gone in at Beckenham Place Park over the past year.
27	Localised solutions	Low Emission Neighbourhoods (LENs).	N/A	Looking at resourcing and current work already being carried out by Transport around Liveability Funded Neighbourhood and the Healthy Neighbourhood borough wide schemes, LENs were not considered possible and resource effective, given commitments to other schemes. See Action ID45 and ID48 (new action).
28	Cleaner transport	Discouraging unnecessary idling by vehicles near schools.	Idling action events held at 3 schools. The end of year report provided details on success. Also a priority within the Lewisham Mayor’s Air Quality Campaign (see introduction to Table).	Through https://idlingaction.london/ , idling action events were held at four primary schools within 2018, with a further five events planned for 2019. 30 anti-idling signs were erected at identified schools in 2018. Also see Action 17.

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
28A	Cleaner transport	Carry out a Council-wide anti-idling campaign discouraging unnecessary idling by idling vehicles	Idling action events held at 3 schools. The end of year report provided details on success. Also a priority within the Lewisham Mayor's Air Quality Campaign (see introduction to Table)	<p>Many STARS schools carried out their own anti-idling campaigns throughout the year and were involved in initiatives that contributed to improving air quality. i.e. cycling, walking, bikeability, scooting, park and stride etc. which are ongoing.</p> <p>The council is seeking delegated powers for enforcement and will be going to Mayor and Cabinet in Autumn 2019. As a lead up and part of the Clean Air Day 2019, there will a launch of a newly designed anti-idling card which will be distributed to all schools in Lewisham agreeing to take part. Also see Action 17A.</p>
29	Cleaner transport	Speed control measures e.g. lowering the legal speed limit to 20mph in built up residential areas	The borough wide 20mph limit was implemented in September 2016. Monitoring has been carried out which has shown reductions in speed as a result. However, physical measures will be required on some streets to assist with compliance. These streets are currently being prioritised and potential measures identified. The borough is also encouraging TfL to introduce 20mph on the parts of the network that it is responsible for.	A programme of speed reduction measures on 30mph roads was approved by Mayor and Cabinet. Following surveys and design work speed reduction measures are programmed to be implemented on the first 8 roads between August and November 2019. Design work is continuing on the remaining roads in the programme.

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
30	Cleaner transport	Expanding car clubs and increasing the proportion of electric, hydrogen and ultra-low emission vehicles in Car Clubs .	<p>1 Car Club bay provided at HAZELHURST COURT, BECKENHAM HILL ROAD, BROMLEY, SE6 3AG development.</p> <p>For all car-free developments we have secured car club memberships. For instance, in 2017 this was conditioned and discharged for 437-439 BROCKLEY ROAD, LONDON, SE4 2PJ, KENT WHARF, CREEKSIDE, LONDON, SE8 3DZ.</p> <p>Officers are currently in discussions with Zipcar (the borough's only current car club) about the potential introduction of further electric vehicles to its fleet. Zipcar has plans to gradually introduce more EVs to their Zipcar flex operations (point to point model). However, for the fixed bays it is harder to achieve without the necessary supporting infrastructure. Boroughs are limited on the degree to which they can assist with the implementation of EVCPs in fixed car club bays due to state aid rules. The Council is in discussion with other car club providers.</p>	The borough Low Emission Vehicle strategy has a clear objective to encourage and to eventually insist that car clubs move to zero emission vehicles. It also requires they clearly demonstrate how they intend to refresh their fleet with more and more low/zero emission vehicles. With an intermediate target of 50% of all their vehicles being low/zero emission by 2025 and 100% by 2030.

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
31	Cleaner transport	Very Important Pedestrian (VIP) Days (e.g. no vehicles on certain roads on a Sunday) and similar initiatives.	Considering roads but need to assess full impact on surrounding streets. For Walk to School Week in 2018, Athelney Primary School is trialling this and will provide feedback. VIP campaign will take place in September 2018.	In 2018 there were approx. 75 (community) street parties and 5 or 6 school fair events. There were also 2 or 3 school parades that had rolling road closures. Schools have been contacted in 2019 to encourage more Play and Community Play Streets across the borough with links to Car Free Day.
32	Cleaner transport	Free or discounted parking charges at existing parking meters for zero emission cars.	This will be considered within the Parking review, which has been delayed and will go to Mayor and Cabinet at the end of 2018/19. Air quality is being factored into this review.	The update to the Parking policy is being undertaken in 2019 with consultation during summer. Results of this will be considered by Sustainable Development Scrutiny Committee and then go to Mayor and Cabinet at the end of 2019.
33	Cleaner transport	Free or discounted residential parking permits for zero emission cars.	<p>During the year (2016/2017) a total of 16,000 resident and business parking permits were issued. Permits issued to lower emission vehicles and sold at a concessionary rate was 345, and represent 5.75% of the total which is an increase of 4% from that of last year.</p> <p>The Parking review, which has been delayed and will go to Mayor and Cabinet at the end of 2018/19, will consider charges and concessions. Air quality is being factored into this review.</p>	The update to the Parking policy is being undertaken in 2019 with consultation during summer. Results of this will be considered by Sustainable Development Scrutiny Committee and then go to Mayor and Cabinet at the end of 2019.

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
34	Cleaner transport	Surcharge on diesel vehicles below Euro 6 standards for Resident and Controlled Parking Zone permits.	This will be considered within the Parking review, which has been delayed and will go to Mayor and Cabinet at the end of 2018/19. Air quality is being factored into this review.	The update to the Parking policy is being undertaken in 2019 with consultation during summer. Results of this will be considered by SDSC and then go to Mayor and Cabinet at the end of 2019.
35	Cleaner transport	Installation of residential electric charge points.	<p>There are currently 29 EVCPs in 10 locations, including 6 in Council managed car parks.</p> <p>The Council will be consulting on its EVCP strategy in late spring/early summer 2018, with a final document approved by the end of the year. This will set out our plans for expansion of the charging network over the next four years (to 2022).</p> <p>In partnership with Source London we are currently consulting on a further 14 sites for 7kW chargers, with a view to seeing these implemented by the end of 2018, subject to consultation. This has been delayed from last year in order to agree on legal arrangements.</p> <p>Officers are also starting to talk to other providers about introducing lamp column charging and complementing the Source London network with additional 7kW chargers run by other operators.</p>	<p>The EV strategy has been consulted on and is due to go to M and C in July 2019.</p> <p>The legal arrangements with Source London are nearing completion, the contract had more complications and progress throughout 2018 was slow but we are nearing a signed contract which will enable further Source London 7kW chargers to be installed. Of the 14 sites that were consulted on last year 7 sites have been successfully taken through the planning process and are ready to be installed.</p> <p>Residential charging infrastructure measures have moved forward to the procurement stage. Using the TfL Go Ultra Low City Scheme (GULCS) framework, the borough is currently running a procurement for a contractor to install residential charging, due to the borough lamp columns being at the back of footway we have had to move away from the chargers that are attached to the columns in favour of satellite bollard options. Once appointed we expect to have approximately 20 residential charger locations by December 2019.</p>

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
35A	Cleaner transport	Carry out a campaign to promote the use of electric charge points within the borough.	<p>Campaign wasn't carried out in 2017, as the production of the strategy was still being consulted internally. Lewisham had an Air Quality Conference in March 2018 where the principles of the strategy were communicated.</p> <p>As part of the launch of the draft EVCP strategy, public consultation, the Council will make a call for suggestions for new EVCP locations. A publicity campaign is planned for the end of the 2018/19 financial year, with details on new locations.</p>	Once the Strategy has been formally adopted and a contractor appointed through the GULCS framework the borough will be in a better position to launch any coms campaign. However, the borough need to be measured in its approach as we do not want to over publicise the use of Low/zero emission vehicles as wider transport objective are looking to reduce traffic and private car use to 'essential journeys only'.
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).	Officers are working in partnership with TfL to progress a number of rapid charging points. An initial long list of 20 sites across the borough (mixture of land ownership) has been identified, with two sites implemented to date.	20 potential rapid charge locations have been submitted to TfL for consideration. 3 to 5 rapid sites will be chosen from this long list to take forward. These sites are due to be selected by August 2019. A focus on serving Taxi ranks has been the main factor in deciding potential locations.

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
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.	<p>See link for the Annual Parking report (2016/17):</p> <p>http://www.lewisham.gov.uk/myservices/parking/Pages/default.aspx</p> <p>The total number of controlled parking zones (CPZs) operating in the borough at the end of 2016/17 was 22. This will increase to 23 in 2017/18 as part of the CPZ implementation programme.</p> <p>Also, approval for 18/19 CPZ programme has been received with proposals for a further four zones. Designs have gone through public consultation in September 2017, the full results of this consultation have not been published (expected June 2018). Expect detailed design to start in 2018, and construction to start in 2019 for approximately 1 year.</p> <p>Over the past 6 months the Council have been assessing sites for the locating of bike hangers; consultation on the 1st phase of hangers is complete, and we are awaiting the award of the new contract to the supplier to start installation. Once the contractor is on board the Council will continue to roll out phases of hangers every 6 months, funding dependant.</p>	A new CPZ in Ladywell was installed during 2018/19 as part of the current CPZ implementation programme. The CPZ implementation programme includes a review of the existing Grove Park CPZ and consultation on proposals for a new CPZ in Leegate, with the latter being coordinated with Healthy Neighbourhood projects in the same area. A further CPZ in Sydenham is to be consulted on, currently programmed for the end of the 2019/20 financial year.

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
38	Cleaner transport	Provision of infrastructure to support walking and cycling.	3 Quietway routes are in development with completion expected in 2019. Lewisham Council was successful in securing feasibility funding for the Deptford parks Liveable Neighbourhoods fund from TfL. This feasibility work is going to be carried out over 2018 to inform concept designs hopefully available by early 2019. Schemes include: re assigning road space to create a pocket park, reducing traffic and greening roads, creating a traffic-free walking route from the River Thames to New Cross via a new green way and other smaller intervention identified through public consultation.	All 3 Quietway routes complete bar four sections at Southend Lane, Waterlink Way, Armoury Way and Lower Sydenham. Deptford Parks Liveable Neighbourhood – feasibility study carried out and approved by TfL at Stage Gate 2 in May 2018. Prelim design/detailed design to be carried out in 2019 as well as Copenhagen Crossing programme construction.
39	Cleaner transport	Develop a 'stand-alone' Cycling Strategy for the borough.	The Cycling Strategy was adopted in late 2017.	See ID 38 & 40.
40	Cleaner transport	Increasing cycle parking.	See Section 10 of the Cycling Strategy .	31 bike hangers installed in 2017/18. A further 30 bike hangers are due to be installed in 2019/20.

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
41	GLA AQ FOCUS AREA 127 & parts of 132 Cleaner Transport	Development of a Zonal Construction Logistic Framework for the Evelyn Street Corridor.	The main focus of work following the completion of the Construction Logistics Plan (CLP) has been to engage with developers in the Evelyn Street area. The primary engagement mechanism has been the three Evelyn Street CLP Forum meetings held in 2017. Air Quality (AQMesh) and traffic monitoring have been installed on Evelyn Street and Deptford Church Street in partnership with Kings College, to establish the current baselines against which the additional construction traffic can be monitored. More details on progress: http://www.llecp.org.uk/evelyn-street-clp-project	The MAQF funding for the project finished at the end of March 2018. An Evelyn Street CLP Forum was held in January 2018 where it was agreed that project should continue. Tideway have agreed to chair the Forum meetings and follow up with administrative aspect. King's College London will continue to provide air quality monitoring and management aspect to support the project.
42	GLA AQ FOCUS AREA 125, 130 & 133 Public health and awareness raising	Provision of public art along the Brockley Corridor to raise awareness on air quality.	All art installations completed. Update provided to Local Assembly in March 2017 .	ACTION COMPLETED.
43	GLA AQ FOCUS AREA 130 & 133 Cleaner Transport	Road Layout changes along the Crofton Park area of the Brockley corridor.	Progress given at Local Assembly in March 2017 . A public consultation was carried out in 2017: https://www.pclconsult.co.uk/projects/crofton-park-2/	Phase 1 of the Crofton park scheme has been programmed for delivery in 2019. Measure include speed reduction measure, and pedestrian priority measures along with general public realm improvements.
44	GLA AQ FOCUS AREA 125 to 133 Cleaner Transport	LiP projects.	Previously present in Table K3 within ASR 2017.	SEE Table K2.

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
45	GLA AQ FOCUS Area 127 Cleaner Transport	Liveable Neighbourhood Scheme 'Deptford Parks'.	NEW ACTION for reporting at next ASR.	<p>Deptford Parks Liveable Neighbourhood – feasibility study carried out and approved by TfL at Stage Gate 2 in May 2018. Prelim design/detailed design to be carried out in 2019 as well as Copenhagen Crossing programme construction.</p> <p>Streets in North Deptford will see reduced traffic owing to new restrictions. Walking and cycling will be transformed by a new north-south traffic-free route along the former Grand Surrey Canal, new Copenhagen crossings, cycle parking and street lighting. New cycle routes through the park will also link to the proposed new Bakerloo line station (New Cross Gate).</p>
46	GLA AQ FOCUS AREA 127 Cleaner Transport Public Health and Awareness Raising	DEFRA Project: 'Cleaner Villages' Business engagement at Deptford High Street, to reduce impact of delivery.	NEW ACTION for reporting at next ASR.	<p>As part of the Cleaner Air Village 1 project recommendations for following up after engagement with businesses were:</p> <ul style="list-style-type: none"> Shared EV van for small businesses; Shared supplier scheme at the Albany; Micro consolidation; and <p>An Ultra-Low Emission Supplier Directory will be launched in 2019 and work will continue as part of Clean Air Village 2. Lewisham are the lead authority for this 6 borough consortium with Cross River Partnership managing.</p>

ID	Action Category	Action	Progress and planned action presented in 2017 ASR	Progress 2018 and Planned Future Action
47	GLA AQ FOCUS AREA 131 Cleaner Transport Public Health and Awareness Raising	DEFRA Project: 'Cleaner Villages' Business engagement at Lewisham Town Centre, to reduce impact of delivery.	NEW ACTION for reporting at next ASR.	As part of the Cleaner Air Village 1 project recommendations for following up after engagement with businesses were: Shared EV van for small businesses; Cargo bike lease for small businesses; Market: cheap and local storage; Market: permanent stalls with storage inside; Coordinate market stall holders recycling together; and Consolidation of food and beverage suppliers. An Ultra-Low Emission Supplier Directory will be launched in 2019 and work will continue as part of Clean Air Village 2. Lewisham are the lead authority for this 6 borough consortium with Cross River Partnership is managing.
48		Healthy Neighbourhood Cell Scheme		New Action for reporting at next ASR but consultation for schemes have been undertaken. The first Healthy Neighbourhood Cell, will be Lewisham, Hither Green and Lee Green, see link for further information: https://lewisham.gov.uk/myservices/roads-and-transport/community-led-traffic-reduction-healthy-neighbourhoods . Monitoring of air quality is planned for assessing impacts from interventions within the scheme.

Once the LLAQM has been updated the AQAP and reporting will be reviewed and also where appropriate the 'NICE Quality Standard on air pollution' used.



Completed or Discontinued Actions



New Actions

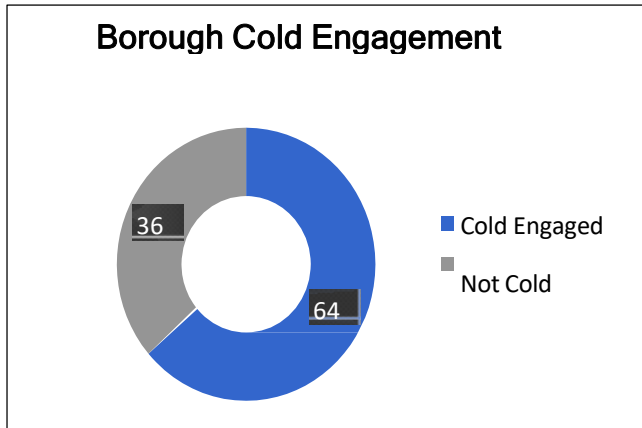
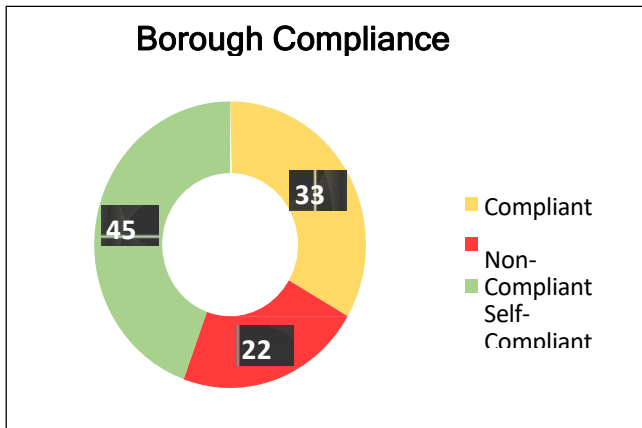
3. Planning Update and Other New Sources of Emissions

Briefly describe the processes you have in place to ensure that all relevant planning applications are reviewed and any air quality conditions, including NRMM conditions, are enforced.

Table J1. Planning requirements met by planning applications in Lewisham in 2018

Action	Number	Notes
a) Number of planning applications where an air quality impact assessment was reviewed for air quality impacts	<u>17</u>	Reviewed by EP Team as part of the planning consultation.
b) Number of planning applications required to monitor for construction dust	<u>36</u>	Reviewed as part of the CEMP submission.
c) Number of CHPs/Biomass boilers refused on air quality grounds	<u>Nil</u>	All meeting the AQ Neutral Required
d) Number of CHPs/Biomass boilers subject to GLA emissions limits and/or other restrictions to reduce emissions	<u>3</u>	Assessment included as part of AQ planning submission.
e) Number of developments required to install Ultra-Low NO _x boilers	<u>Nil</u>	Installed but not a requirement.
f) Number of developments where an AQ Neutral building and/or transport assessments undertaken	<u>10</u>	
g) Number of developments where the AQ Neutral building and/or transport assessments not meeting the benchmark and so required to include additional mitigation	<u>Nil</u>	
h) Number of planning applications with S106 agreements including other requirements to improve air quality	<u>3</u>	Requested and waiting confirmation on a further site.
Number of planning applications with CIL payments that include a contribution to improve air quality	<u>Nil</u>	
i) NRMM: Central Activity Zone and Canary Wharf Number of conditions related to NRMM included. Number of developments registered and compliant.	<u>N/A</u>	

<p>Please include confirmation that you have checked that the development has been registered at https://nrmm.london/ and that all NRMM used on-site is compliant with Stage IIIB of the Directive and/or exemptions to the policy.</p>		
<p>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 https://nrmm.london/ and that all NRMM used on-site is compliant with Stage IIIA of the Directive and/or exemptions to the policy.</p>	<p>14 sites identified NRMM requirements for the development within their Air Quality Assessment as part of the planning decision. Conditions haven't always been introduced. As indicated in the Action Plan Progress Table, the CEMPs has also been used to identify the need.</p>	<p>Proposals for 2019, to provide condition for all major sites, for Planners to review and to make a decision on introducing as a standard condition. Conditions have been introduced in the past but not on a regular basis.</p>



LB Merton undertook 11 Site Audits, 4 Sites achieved Self-Compliant status, 3 site worked towards and achieved Compliance and 2 Site failed to achieve Compliance.

*Compliant	3
Non-Compliant	2
**Self-Compliant	4
***Cold Engaged	7
Not Cold Engaged	4
Non-Registration	1
No NRMM	2
Site Complete	0
Total Audits	11

Total compliance status is Compliant and Self-Compliant combined, the London Borough Lewisham achieved a Total Compliance status of 78%. The future audit visits and reporting is in need of review as part of the MAQF process to ensure effective management.

Years	Months	Date	Site Reference	Cold Engaged	Compliant	No NRMM	Non-compliant	Self-compliant
2018	May	02-May	Lewisham Gateway	Yes				
		14-May	Convoys Wharf	Yes			1	
		18-May	Bond House	Yes				
	Jun	31-May		No				1
		11-Jun	Earl Pumping Station	Yes		1		
	Jul	21-Jun	9 Independents Road	Yes				
			Anthology Deptford Foundry	No		1		
			Hydro 2019	Yes				
		05-Jul	Marine Wharf	No		1		1

- Failed to register

*Compliant - Site has met required emission standards by enacting all recommendations made by officers

**Self-Compliant – Site has met/exceeded emission standards and registered all machinery correctly prior to the audit

***Cold Engaged – An unregistered site, identified on the ground and subsequently engaged ‘Failed to register’ can include site and/ or machinery

Sites deploying no in-scope NRMM at point of audit, do not appear in the compliance charts above and form their own category

Table J.2 LIP Projects in Air Quality Focus Areas as of end of 2018

1	Deptford Church Street	Quietway 1 (Implemented)	Cycle Superhighway 4 (in design) *	Quietway 2 (in design)	S106 New Bus Services	New EVCP Sites	New 20mph limits
2	New Cross	Bakerloo Line Extension (Consultation)	A2 Corridor Study – TfL *	Old Kent Road OA work with LB Southwark & GLA	S106 New Bus Services	New EVCP Sites	New 20mph limits
3	Brockley Cross	Rail Strategy inc Overground proposals	B218 Corridor Study	New EVCP Sites	New 20mph limits		
4	Honor Oak Park	New speed camera at Stondon Park Junction(implemented) *	B218 Corridor Study	New EVCP Sites	New 20mph limits		
5	Loampit Vale & L.High St	Bakerloo Line Extension (Consultation)	Quietway 2 (in design)	New EVCP Sites	New 20mph limits		
6	Catford Road	Major regeneration programme, including A205 alignment (feasibility)	Quietway 2 (in design)	New EVCP Sites	New 20mph limits		
7	A205 Brownhill Road	A205 Brownhill Road Corridor improvements * (in design)	New EVCP Sites	New 20mph limits			
8	Forest Hill	A205 jw Devonshire Rd minor junction improvement (implemented)	Dartmouth Road streetscape improvements (inc 20mph measures) *	New EVCP Sites	New 20mph limits	Air Quality Assessment report in late Spring 2017.	

3.1 New or significantly changed industrial or other sources

No new sources identified

Appendix A Details of Monitoring Site QA/QC

A.1 Automatic Monitoring Sites

Calibrations of continuous gas 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.

PM₁₀ Monitoring Adjustment

TEOM PM₁₀ measurements are corrected using the Volatile Correction Model (VCM) by ERG-King's College London.

A.2 Diffusion Tube Quality Assurance / Quality Control

Diffusion tubes for NO₂ in LBL are provided by Gradko International Ltd, using a preparation method of 50% Triethanolamine (TEA) in acetone.

Gradko participate 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 NO₂ PT forms an integral part of the UK NO₂ 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 determined to be satisfactory was 100% for all tests in AIR-PT Rounds AR024-AR028 (January 2018-October 2018).

National Bias Adjustment Factor

The national bias adjustment factor for 2018 is available from the Defra website⁴. The results of multiple co-location studies are collated, and the average bias adjustment factor is taken for studies using the 50% TEA/acetone preparation method, analysed by Gradko. The national bias adjustment factor for 2018 is 0.92, based on 8 studies. Details are shown in Figure A.1 below.

⁴ Diffusion tube bias adjustment spreadsheet March 2019, available at: <https://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html>

Figure A.1 National Bias adjustment factor

National Diffusion Tube Bias Adjustment Factor Spreadsheet						Spreadsheet Version Number: 03/19				
Follow the steps below in the correct order to show the results of relevant co-location studies						This spreadsheet will be updated at the end of June 2019				
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.						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: Select the Laboratory that Analyses Your Tubes from the Drop-Down List		Step 2: Select a Preparation Method from the Drop-Down List		Step 3: Select a Year from the Drop-Down List		Step 4: 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 shown in blue at the foot of the final column.				
If a laboratory is not shown, we have no data for this laboratory.		If a preparation method is not shown, we have no data for this method at this laboratory.		If a year is not shown, we have no data.		If you have your own co-location study then see footnote. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@uk.bureauveritas.com or 0800 0327953				
Analysed By ¹	Method ² <small>50% TEA in acetone, others (AO) from the pop-up list</small>	Year ³ <small>To include winter collection, check (AO)</small>	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) ($\mu\text{g}/\text{m}^3$)	Automatic Monitor Mean Conc. (Cm) ($\mu\text{g}/\text{m}^3$)	Bias (B)	Tube Precision ⁿ	Bias Adjustment Factor (A) ((Cm/Dm))
Gradko	50% TEA in acetone	2018	R	City of London	12	84	94	-10.7%	G	1.12
Gradko	50% TEA in acetone	2018	B	City of London	10	38	32	20.3%	G	0.83
Gradko	50% TEA in acetone	2018	R	RBWM	12	39	36	7.8%	G	0.93
Gradko	50% TEA in acetone	2018	R	RBWM	12	35	34	2.2%	G	0.98
Gradko	50% TEA in acetone	2018	SU	Redcar and Cleveland Borough Council	9	18	10	83.3%	G	0.55
Gradko	50% TEA in acetone	2018	R	West Berkshire	10	40	37	10.5%	G	0.91
Gradko	50% TEA in acetone	2018	KS	Marylebone Road Intercomparison	11	91	85	6.5%	G	0.94
Gradko	50% TEA in acetone	2018	UB	Reading Borough Council	12	20	26	-22.6%	G	1.29
Gradko	50% TEA in acetone	2018		Overall Factor⁴ (8 studies)				Use		0.92

Factor from Local Co-location Studies (if available)

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 website⁵. The local bias adjustment factor for 2018 at LW2 is 0.91. Figure A.2 below shows the calculation.

Figure A.2 Local Bias Adjustment Factor

Checking Precision and Accuracy of Triplicate Tubes

Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Diffusion Tubes Measurements			Triplet Mean	Standard Deviation	Coefficient of Variation (CV)	95% CI of mean
			Tube 1 $\mu\text{g}/\text{m}^3$	Tube 2 $\mu\text{g}/\text{m}^3$	Tube 3 $\mu\text{g}/\text{m}^3$				
1	03/01/2018	31/01/2018	44.9585	45.9003	48.8976	47	2.1	4	5.1
2	31/01/2018	28/02/2018		43.7418	40.3725	42	2.4	6	21.4
3	28/02/2018	28/03/2018			46.3597				
4	28/03/2018	02/05/2018	47.6935	44.0552	42.7699	45	2.6	6	6.3
5	02/05/2018	06/06/2018	51.1562	52.7863	51.8788	52	0.8	2	2.0
6	06/06/2018	04/07/2018	43.6828	44.4254	48.4988	46	2.6	6	6.4
7	04/07/2018	01/08/2018	46.9951	51.5117	56.7776	52	4.9	9	12.2
8	01/08/2018	05/09/2018	45.6438	46.3515	44.3852	45	1.0	2	2.5
9	05/09/2018	03/10/2018	43.2707	42.218	42.553	43	0.5	1	1.3
10	03/10/2018	31/10/2018	45.625	47.3413	45.5637	46	1.0	2	2.5
11	31/10/2018	05/12/2018	44.6841	41.9591	41.226	43	1.8	4	4.5
12	05/12/2018	09/01/2019	45.704	47.0487	50.9396	48	2.7	6	6.8
13									

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

From the AEA group

Automatic Method		Data Quality Check	
Period Mean	Data Capture (% DC)	Tubes Precision Check	Automatic Monitor Data
54.1987	99.7028232	Good	Good
59.7207	99.5542348	Good	Good
55.8193	90.1931649		Good
41.5812	99.7621879	Good	Good
44	99.6432818	Good	Good
36	99.5542348	Good	Good
37	99.8514116	Good	Good
32	67.1819263	Good	or Data Captur
32	99.5542348	Good	Good
37	99.8514116	Good	Good
35.9118	99.7621879	Good	Good
40.9204	99.8717949	Good	Good

Overall survey --> **Good precision** **Good Overall DC**
(Check average CV & DC from Accuracy calculations)

Site Name/ID:
Accuracy (with 95% confidence interval)
without periods with CV larger than 20%
Bias calculated using 10 periods of data
Bias factor A: 0.91 (0.8 - 1.05)
Bias B: 10% (-5% - 26%)
Diffusion Tubes Mean: 46 $\mu\text{g}/\text{m}^3$
Mean CV (Precision): 5
Automatic Mean: 42 $\mu\text{g}/\text{m}^3$
Data Capture for periods used: 100%
Adjusted Tubes Mean: 42 (37 - 49) $\mu\text{g}/\text{m}^3$

Precision 11 out of 11 periods have a CV smaller than 20%
Accuracy (with 95% confidence interval)
WITH ALL DATA
Bias calculated using 10 periods of data
Bias factor A: 0.91 (0.8 - 1.05)
Bias B: 10% (-5% - 26%)
Diffusion Tubes Mean: 46 $\mu\text{g}/\text{m}^3$
Mean CV (Precision): 5
Automatic Mean: 42 $\mu\text{g}/\text{m}^3$
Data Capture for periods used: 100%
Adjusted Tubes Mean: 42 (37 - 49) $\mu\text{g}/\text{m}^3$

Jaume Targa, for AEA
Version 04 - February 2011

⁵ Local bias adjustment factor tool available at: <https://laqm.defra.gov.uk/bias-adjustment-factors/local-bias.html>

Discussion of Choice of Factor to Use

Based on the fact that the national bias adjustment factor is slightly higher than the local bias adjustment factor, to be more conservative when reporting annual mean NO₂ concentrations, it has been decided to use the national bias adjustment factor. In the past 7 years it has predominantly been the national factor that has been used. Table L details the bias adjustment factors for this year and previous years in LBL, including the choice of factor used for each year.

Table K. Bias adjustment factors for Lewisham between 2012 and 2018

Year	Local factor	National factor	Factor used
2012	0.78	<u>1.01</u>	National
2013	0.93	<u>1.00</u>	National
2014	0.82	<u>0.97</u>	National
2015	<u>1.02</u>	0.95	Local
2016	0.92	<u>1.03</u>	National
2017	<u>1.00</u>	0.97	Local
2018	0.91	<u>0.92</u>	National

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 LLAQM.TG(16) before being compared to annual mean objectives. Data capture at site L20 was 67% and therefore required annualisation.

The 3 continuous monitoring sites chosen for annualisation were Wandsworth Town Hall, Elephant and Castle and Putney. New Cross was not used as this is a roadside site. These 3 sites gave a more conservative estimate than annualising using the Catford site.

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

Site	Site Type	Annual Mean (µg/m ³)	Period Mean (µg/m ³)	Ratio
Wandsworth Town Hall	Urban Background	38.4	38.0	1.012
Elephant and Castle	Urban Background	32.1	32.3	0.995
Putney	Urban Background	34.8	33.6	1.035
Average				1.014

Distance Adjustment

A small number of diffusion tubes are not located at relevant exposure, such as on kerbside lampposts as opposed to building facades. Distance-corrected NO₂ concentrations at these locations have been calculated using the LAQM 'NO₂ Fall-off with Distance Calculator (Version 4.2)'. The distance-corrected results are presented in Table N (Appendix B).

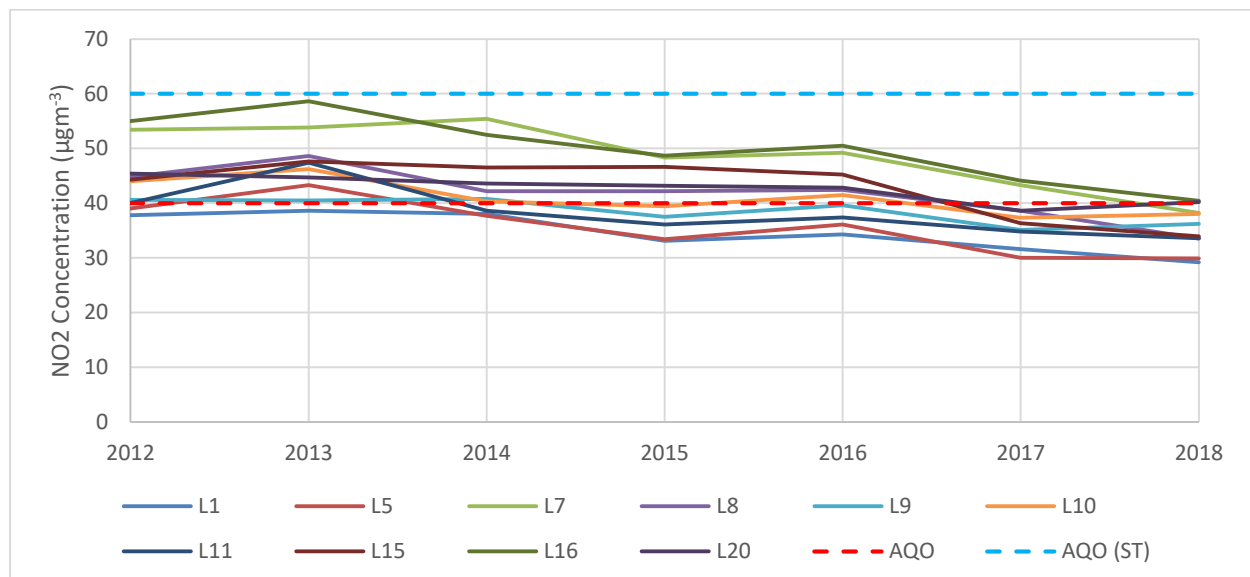
Before distance correction 7 diffusion tube locations exceeded the annual mean NO₂ AQO of 40 µg_m⁻³ – L16, L17-L18-L19 (co-located triplicate), L21, L23, L27, L28 and L51. The highest measured NO₂ concentration was 53.5 µg_m⁻³ at L51.

After distance correction 4 locations are estimated to exceed the AQO – L16, L17-L18-L19, L21 and L51. With the exception of site L51, all of these monitoring sites are at locations of relevant exposure and so distance correction does not alter the NO₂ concentrations. The distance-correction for site L51 results in a reduction in NO₂ concentration from 53.5 µg_m⁻³ at the monitoring location, to 40.1 µg_m⁻³ at the nearest relevant exposure. Sites L23, L27 and L28 are predicted to achieve the AQO after correction for distance to the nearest relevant exposure.

A.4 Adjustments to the Ratified Monitoring Data

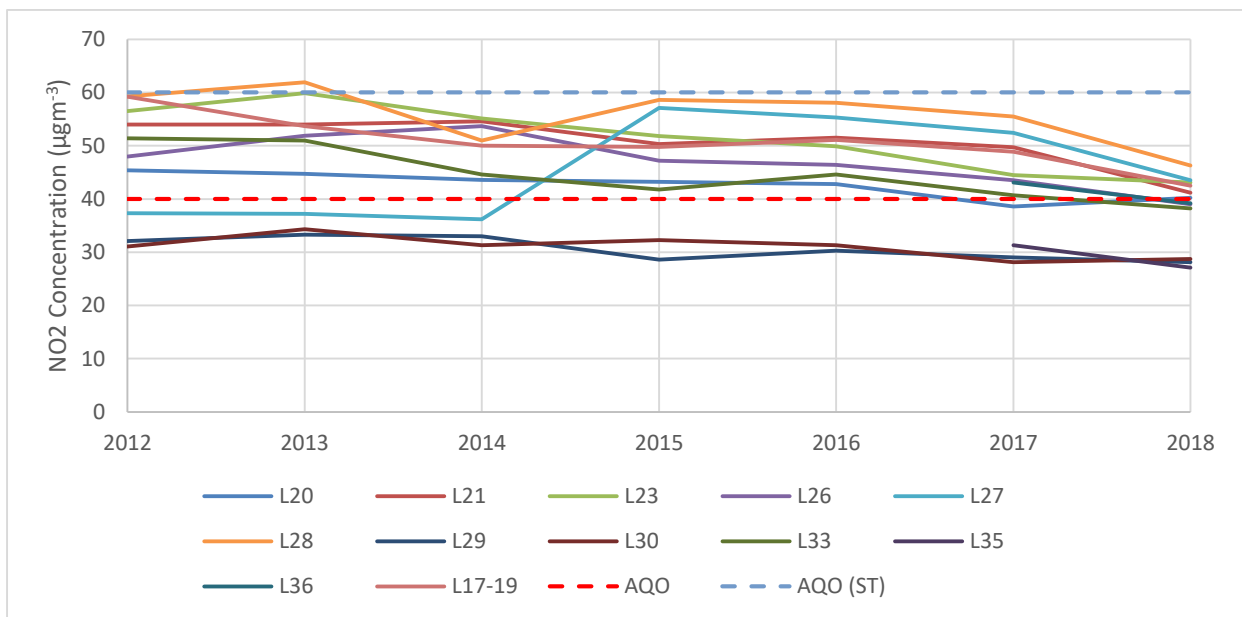
To clearly understand and visualise the trends in annual mean NO₂ concentration over the last 7 years, plots of the annual concentrations recorded at all NO₂ monitoring locations have been produced and are shown below in Figures A.3 to A.6, where AQO is the annual mean Air Quality Objective (40 µg_m⁻³) and AQO (ST) is the short-term Air Quality Objective (60 µg_m⁻³).

Figure A.3 Trend in NO₂ Concentration at roadside diffusion tube locations (1)



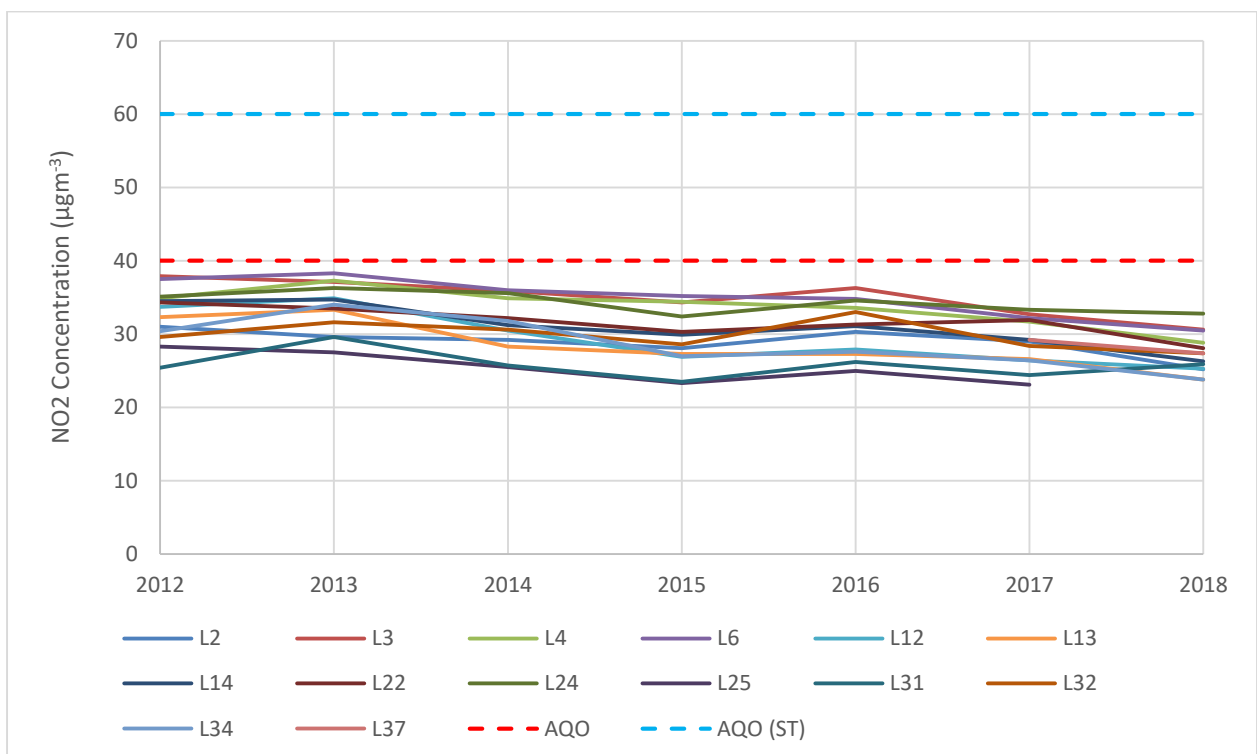
Note: AQO (ST) = 60 µg_m⁻³. Diffusion tubes cannot be used to directly compare against the 1-hour mean NO₂ objective. However, LLAQM.TG16 states that at locations where annual mean NO₂ concentrations of greater than 60 µg_m⁻³ are monitored the 1-hour mean NO₂ objective is likely to be exceeded.

Figure A.4. Trend in NO₂ concentration at roadside diffusion tube locations (2)



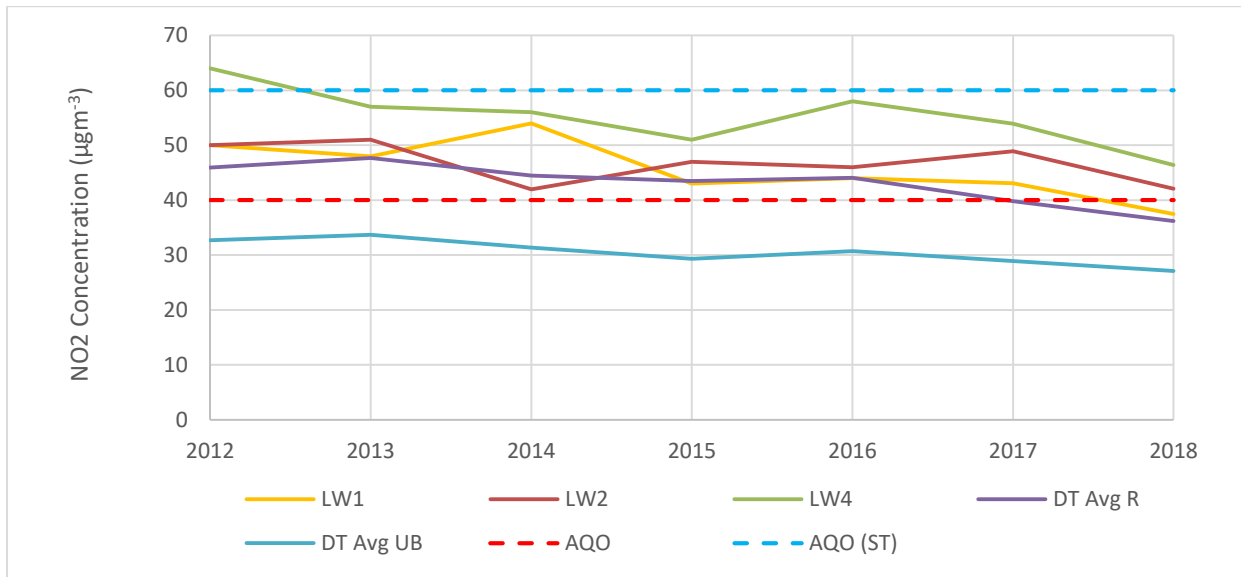
Note: AQO (ST) = 60 µgm⁻³. Diffusion tubes cannot be used to directly compare against the 1-hour mean NO₂ objective. However, LLAQM.TG16 states that at locations where annual mean NO₂ concentrations of greater than 60 µgm⁻³ are monitored the 1-hour mean NO₂ objective is likely to be exceeded.

Figure A.5. Trend in NO₂ concentration at urban background diffusion tube locations



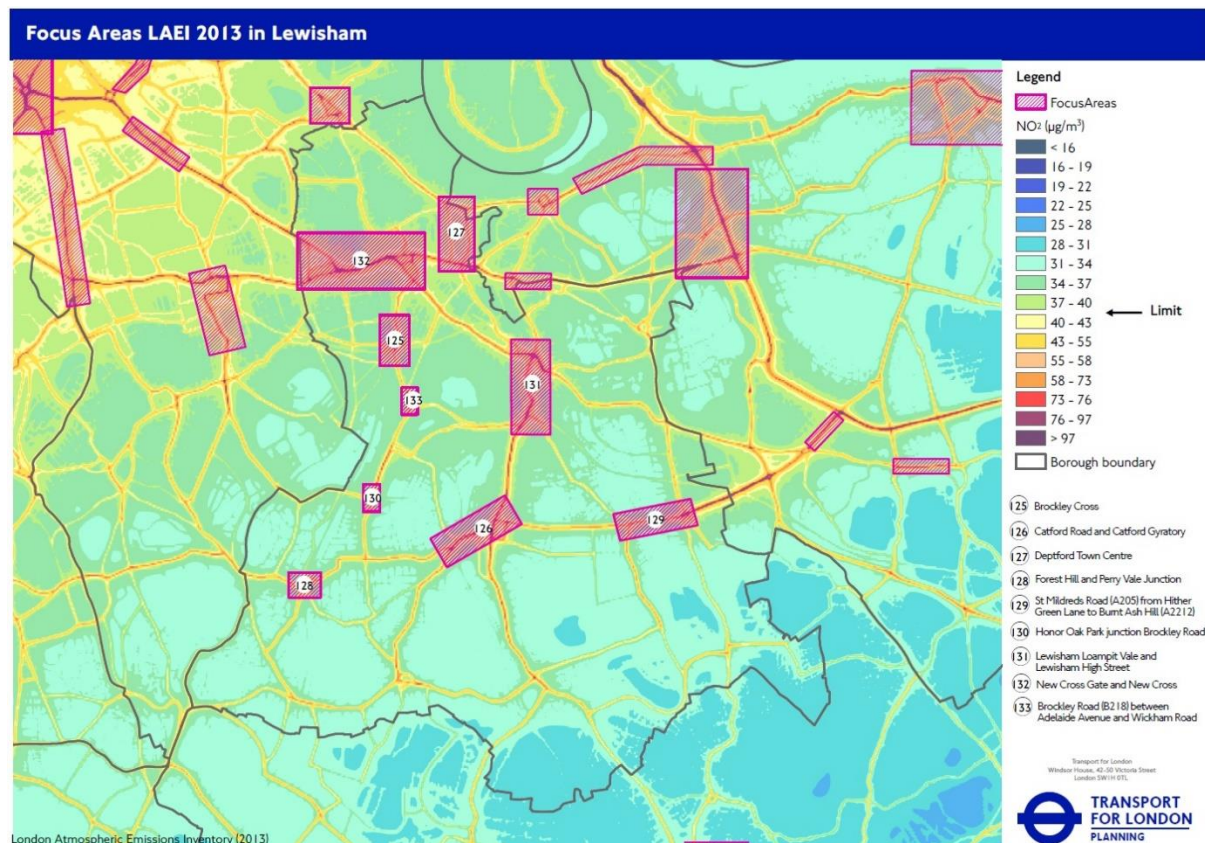
Note: AQO (ST) = 60 µgm⁻³. Diffusion tubes cannot be used to directly compare against the 1-hour mean NO₂ objective. However, LLAQM.TG16 states that at locations where annual mean NO₂ concentrations of greater than 60 µgm⁻³ are monitored the 1-hour mean NO₂ objective is likely to be exceeded.

Figure A.6. Trend in NO₂ concentration at automatic monitoring stations, roadside and urban background diffusion tube locations (averaged)



Note: AQO (ST) = 60 µgm⁻³. DT Avg (R) = Average of all roadside diffusion tube monitoring locations. DT Avg (UB) = Average of all urban background diffusion tube monitoring locations. Diffusion tubes cannot be used to directly compare against the 1-hour mean NO₂ objective. However, LLAQM.TG16 states that at locations where annual mean NO₂ concentrations of greater than 60 µgm⁻³ are monitored the 1-hour mean NO₂ objective is likely to be exceeded.

Figure A.7. Air Quality Focus Areas in London Borough of Lewisham



Appendix B Full Monthly Diffusion Tube Results for 2018

Table M. NO₂ Diffusion Tube Results

Site ID	Valid data capture for monitoring period % ^a	Valid data capture 2018 % ^b	Annual Mean NO ₂												Annual mean – raw data ^c	Annual mean – bias adjusted ^c
			Jan	Feb	March	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec		
L1	100	100	30.1	29.5	37.6	32.9	29.2	24.2	30.0	27.1	29.9	36.6	39.1	35.2	31.8	29.2
L2	100	100	31.5	34.3	28.7	29.2	25.6	23.3	26.5	23.6	26.7	31.8	34.8	12.9	27.4	25.2
L3	100	100	37.4	35.1	35.3	35.4	30.4	24.6	29.9	26.8	39.3	37.1	33.4	34.7	33.3	30.6
L4	100	100	34.2	32.1	36.4	33.3	25.2	23.7	29.1	27.7	30.0	34.7	37.2	31.8	31.3	28.8
L5	100	100	30.6	32.2	38.0	28.7	36.2	34.8	31.3	21.9	30.8	34.4	36.7	34.9	32.5	29.9
L6	100	100	34.3	35.6	37.7	36.3	19.4	23.3	32.7	32.9	34.7	38.1	36.7	36.5	33.2	30.5
L7	100	100	37.0	38.3	44.6	44.1	42.7	39.1	46.0	37.0	38.4	43.9	43.2	43.5	41.5	38.2
L8	92	92	34.8	36.6	42.2	38.1	37.5		33.3	30.2	32.9	40.5	39.5	35.1	36.4	33.5
L9	100	100	36.7	38.5	41.9	43.0	47.1	39.3	37.8	30.5	38.2	44.1	40.0	35.3	39.4	36.2
L10	92	92		44.5	45.6	42.8	51.7	40.7	36.8	27.7	37.3	45.9	42.0	39.5	41.3	38.0
L11	92	92	33.0	36.9	44.7		35.6	33.6	35.2	27.6	32.3	43.6	42.1	37.7	36.6	33.6

Site ID	Valid data capture for monitoring period % ^a	Valid data capture 2018 % ^b	Annual Mean NO ₂													Annual mean – raw data ^c	Annual mean – bias adjusted ^c
			Jan	Feb	March	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec			
L12	100	100	33.9	33.7	28.2	28.8	24.7	18.0	20.5	18.6	25.9	33.0	32.6	32.2	27.5	25.3	
L13	100	100	30.9	27.0	30.8	27.3	19.6	18.8	22.3	20.7	23.7	26.0	25.6	31.6	25.9	23.8	
L14	92	92	34.8	31.5	35.8	31.6	22.6	20.1	23.5	25.4	27.4	30.1	31.6	-	28.6	26.3	
L15	100	100	38.8	39.7	47.9	39.3	35.9	34.3	39.7	30.2	13.5	41.1	42.6	39.0	36.8	33.9	
L16	100	100	32.0	41.6	50.4	44.7	50.2	49.0	45.1	34.4	43.8	44.2	47.9	44.2	44.0	40.4	
L17	92	92	45.0	-	-	47.7	51.2	43.7	47.0	45.6	43.3	45.6	44.7	45.7	45.9	42.3	
L18	100.0	100.0	45.9	43.7	-	44.1	52.8	44.4	51.5	46.4	42.2	47.3	42.0	47.0	46.1	42.4	
L19	100.0	100.0	48.9	40.4	46.4	42.8	51.9	48.5	56.8	44.4	42.6	45.6	41.2	50.9	46.7	43.0	
L20	67	67	42.1	-	-	40.1	-	-	36.7	33.2	34.7	43.9	48.5	43.8	40.4	37.7	
L21	100	100	44.3	39.2	48.6	42.5	49.5	34.2	43.6	45.5	45.2	47.2	46.4	50.8	44.8	41.2	
L22	100	100	36.5	36.8	34.8	28.0	23.5	23.2	22.7	25.4	29.3	34.2	33.2	38.3	30.5	28.1	
L23	100	100	48.2	47.7	56.4	49.3	44.0	44.0	46.9	40.4	42.7	46.9	51.0	44.2	46.8	43.1	
L24	100	100	37.4	42.3	41.5	37.0	32.4	28.2	31.5	29.3	34.5	40.3	37.0	37.0	35.7	32.8	
L26	100	100	40.2	41.6	50.5	47.9	39.3	32.7	43.0	37.7	39.3	41.3	51.8	43.8	42.4	39.0	
L27	100	100	52.5	44.2	48.9	49.5	42.4	39.3	40.0	42.4	54.6	56.3	47.1	50.5	47.3	43.5	

Site ID	Valid data capture for monitoring period % ^a	Valid data capture 2018 % ^b	Annual Mean NO ₂													
			Jan	Feb	March	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual mean – raw data ^c	Annual mean – bias adjusted ^c
L28	100	100	55.2	54.9	54.2	50.5	50.3	41.8	50.1	43.6	47.1	52.8	47.7	56.0	50.4	46.3
L29	92	92	37.4	39.7	31.7	24.1	28.4	23.4	24.6	22.0	60.4	33.5	33.2	38.1	30.6	28.1
L30	100	100	35.7	30.6	35.6	32.7	31.3	24.3	28.9	20.9	25.8	35.8	37.2	36.0	31.2	28.7
L31	92	92	27.3	36.0	32.2	26.0	24.4	19.0	22.1	14.6	29.9	34.5	35.8	36.3	28.2	25.9
L32	100	100	30.6	28.8	33.4	32.0	28.1	21.7	26.8	23.5	28.5	33.1	37.9	33.3	29.8	27.4
L33	92	92	48.5	42.8	47.1	45.3	44.5	29.3	43.8	40.9	30.9	-	39.7	43.8	41.5	38.2
L34	100	100	30.0	27.7	25.1	28.2	24.3	17.4	23.5	18.0	24.6	29.7	32.2	30.1	25.9	23.8
L35	100	100	32.1	38.7	29.5	34.3	23.4	21.4	24.7	23.0	26.4	32.8	34.1	33.7	29.5	27.1
L36	92	92	43.5	44.6	48.1	43.4	-	32.0	43.4	34.2	29.6	49.6	54.5	45.3	42.6	39.2
L37	100	100	31.6	30.8	32.8	31.0	27.5	24.9	25.4	22.6	26.7	33.6	33.2	37.3	29.8	27.4
L38	92	92	32.7	29.9	42.1	41.4	33.1	29.4	32.7	-	-	-	34.2	31.2	32.3	29.7
L39	100	100	31.9	33.1	37.5	35.8	30.4	25.6	27.6	24.2	28.1	37.8	41.7	37.6	32.6	30.0
L40	100	100	27.1	26.1	28.9	28.2	24.5	18.2	21.3	19.6	23.8	27.5	32.8	30.6	25.7	23.7
L41	100	100	27.5	24.7	28.6	28.6	24.3	17.6	21.2	18.6	25.4	30.6	34.4	31.5	26.1	24.0
L42	100	100	32.4	31.6	34.3	29.7	24.4	19.6	27.0	23.6	25.3	35.0	32.7	33.5	29.1	26.8

Site ID	Valid data capture for monitoring period % ^a	Valid data capture 2018 % ^b	Annual Mean NO ₂													Annual mean – raw data ^c	Annual mean – bias adjusted ^c
			Jan	Feb	March	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec			
L43	92	92	36.0	33.1	38.9	33.2	22.5	21.2	25.6	25.6	27.4	34.5	-	20.1	28.9	26.6	
L44	100	100	49.4	36.6	42.8	37.0	33.8	30.8	36.7	31.7	34.2	39.8	43.2	43.6	38.3	35.2	
L45	100	100	40.9	37.6	39.8	37.8	31.6	29.7	33.4	27.4	35.5	40.4	42.4	39.5	36.3	33.4	
L46	100	100	31.9	27.0	32.0	27.8	21.0	19.6	22.7	20.8	26.2	32.2	33.4	30.8	27.1	24.9	
L47	100	100	36.1	32.6	31.5	31.3	27.7	22.5	25.3	21.9	25.6	34.5	34.1	36.0	29.9	27.5	
L48	100	100	34.2	33.9	33.4	31.9	23.0	23.0	26.5	21.9	25.8	32.3	37.9	31.7	29.6	27.3	
L49	100	100	35.4	33.4	32.8	29.5	24.3	20.4	25.0	21.9	30.6	34.8	30.0	39.4	29.8	27.4	
L50	100	100	30.7	31.3	29.6	26.8	23.0	18.7	21.5	17.3	29.2	30.5	27.0	32.0	26.5	24.3	
L51	92	92	51.6	61.7	59.7	56.4	57.4	53.8	62.7	66.7	25.4	56.2	52.6	61.2	58.2	53.5	
L52	92	92	43.5	36.0	40.2	-	27.5	30.6	37.0	38.0	37.0	38.9	27.3	40.9	36.1	33.2	
L53	100	100	29.1	27.9	27.5	24.8	21.7	17.8	19.2	19.8	22.8	29.9	25.6	30.0	24.7	22.7	

Exceedance of the NO₂ annual mean AQO of 40 µg m⁻³ are shown in **bold**.

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

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

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

Table N. Distance-Corrected NO₂ Concentrations

<i>Site Name/ID</i>	<i>Distance (m)</i>		<i>NO₂ Annual Mean Concentration (µg/m³)</i>		
	<i>Monitoring Site to Kerb</i>	<i>Receptor to Kerb</i>	<i>Background</i>	<i>Monitored at Site</i>	<i>Predicted at Receptor</i>
L1	2.0	7.0	24.7	29.2	27.9
L2	6.0	6.0	24.6	25.2	25.2
L3	2.0	2.0	24.9	30.6	30.6
L4	2.0	2.0	24.9	28.8	28.8
L5	5.0	5.0	22.3	29.9	29.9
L6	5.0	5.0	17.6	30.5	30.5
L7	3.0	3.0	20.2	38.2	38.2
L8	5.0	5.0	21.1	33.5	33.5
L9	3.0	3.0	22.6	36.2	36.2
L10	1.0	2.0	25.1	38.0	36.2
L11	3.0	6.0	23.1	33.6	31.7
L12 ^a	50	50	22.3	25.3	25.3
L13	5.0	5.0	19.9	23.8	23.8

<i>Site Name/ID</i>	<i>Distance (m)</i>		<i>NO₂ Annual Mean Concentration (µg/m³)</i>		
	<i>Monitoring Site to Kerb</i>	<i>Receptor to Kerb</i>	<i>Background</i>	<i>Monitored at Site</i>	<i>Predicted at Receptor</i>
L14	1.0	4.0	25.1	26.3	26.0
L15	10	10	23.1	33.9	33.9
L16	1.5	1.5	22.3	40.4	40.4
L17	6.0	6.0	24.7	42.3	42.3
L18	6.0	6.0	24.7	42.4	42.4
L19	6.0	6.0	24.7	43.0	43.0
L20	4.0	5.0	25.3	37.7	36.9
L21	3.0	3.0	21.6	41.2	41.2
L22	0.5	3.5	20.7	28.1	25.5
L23	0.5	6.5	23.6	43.1	34.3
L24	2.0	6.0	18.6	32.8	29.1
L26	10	13	22.2	39.0	37.3
L27	0.5	2.5	22.7	43.5	37.6
L28	0.5	5.5	19.5	46.3	34.9
L29	5.0	5.0	20.7	28.1	28.1
L30	5.0	6.0	20.6	28.7	28.3
L31	2.0	4.0	22.2	25.9	25.3

<i>Site Name/ID</i>	<i>Distance (m)</i>		<i>NO₂ Annual Mean Concentration (µg/m³)</i>		
	<i>Monitoring Site to Kerb</i>	<i>Receptor to Kerb</i>	<i>Background</i>	<i>Monitored at Site</i>	<i>Predicted at Receptor</i>
L32	2.0	2.0	24.7	27.4	27.4
L33	2.0	2.0	22.6	38.2	38.2
L34	5.0	5.0	20.6	23.8	23.8
L35 ^b	N/A	2.0	25.3	27.1	27.1
L36 ^c	N/A	2.0	24.9	39.2	39.2
L37 ^d	N/A	N/A	24.7	27.4	27.4
L38	2.0	8.3	21.1	29.7	26.8
L39	1.7	9.5	22.2	30.0	27.0
L40	1.4	5.0	24.7	23.7	Monitored concentration lower than background
L41	0.7	8.4	25.0	24.0	Monitored concentration lower than background
L42	2.2	2.7	25.0	26.8	26.7
L43	2.9	9.1	24.7	26.6	26.0
L44	2.0	3.0	24.9	35.2	34.2
L45	2.9	3.6	24.6	33.4	32.9
L46	2.3	3.5	22.3	24.9	24.6
L47	2.1	4.0	21.6	27.5	26.6
L48	0.9	26.1	23.6	27.3	24.9

<i>Site Name/ID</i>	<i>Distance (m)</i>		<i>NO₂ Annual Mean Concentration (µg/m³)</i>		
	<i>Monitoring Site to Kerb</i>	<i>Receptor to Kerb</i>	<i>Background</i>	<i>Monitored at Site</i>	<i>Predicted at Receptor</i>
L49	2.1	5.2	25.1	27.4	26.9
L50	4.5	3.7	23.6	24.3	24.3
L51	2.2	12.1	20.7	53.5	40.1
L52	3.9	7.1	19.4	33.2	30.9
L53	2.9	4.0	17.9	22.7	22.3

Notes: ^a Site L12 is greater than 50 metres from the nearest road and there is no nearby relevant exposure, therefore 50 metres has been assumed for monitoring site to kerb and receptor to kerb distances.

^b No relevant exposure near to site L35, therefore receptor to kerb distance has been assumed to be equal to monitoring site to kerb distance.

^c No relevant exposure near to site L36, therefore receptor to kerb distance has been assumed to be equal to monitoring site to kerb distance.

^d No relevant exposure or roads near to site L37.