



Southwark Air Quality Annual Status Report 2018

June 2019

This report provides an overview of air quality in Southwark during 2018 and also lists progress with regard to the Air Quality Action Plan. 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 microns in diameter
PM _{2.5}	Particulate Matter less than 2.5 microns 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	Date Enacted ²
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
Particulate Matter - 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
Particulate Matter - 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

² Note: Date by which to be achieved by and maintained thereafter.

1. Air Quality Monitoring

Southwark currently has 2 continuous air quality monitoring stations. These are supplemented by 80 Nitrogen Dioxide diffusion tubes across Southwark, an increase from 66 in 2017. This is mainly due to monitoring the impact of highway improvements and primary school projects.

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 (m)	Inlet height (m)	Pollutants monitored	Monitoring technique
SWK 5	Old Kent Road	534844	177515	Roadside	Yes	1	5	2.0	NO _x , NO ₂ & PM ₁₀	Chemiluminescence and FDMS TEOM
SWK 6	Elephant Castle &	531884	178835	Urban background	Yes	10	35	3.5	NO _x , NO ₂ , O ₃ & PM ₁₀	Chemiluminescence, UV Absorption & TEOM

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 (m)	Affixed height (m)	Pollutants monitored	Tube co-located with an automatic monitor?
SDT 1	AQMS Old Kent Road - Tube 1	534849	177512	Roadside	Yes	1	5	2.5	NO ₂	Yes
SDT 2	AQMS Old Kent Road - Tube 2	534849	177512	Roadside	Yes	1	5	2.5	NO ₂	Yes
SDT 3	AQMS Old Kent Road - Tube 3	534849	177512	Roadside	Yes	1	5	2.5	NO ₂	Yes
SDT 4	Rotherhithe Old Road	535675	178796	Kerbside	Yes	2	0.5	2.5	NO ₂	No
SDT 5	Drummond Road	534640	179336	Kerbside	Yes	6	0.5	2.5	NO ₂	No
SDT 6	Adjacent to 168 Queens Road	535253	176679	Kerbside	Yes	14	0.5	2.5	NO ₂	No
SDT 7	Adjacent to 167A Rye Lane	534333	176155	Kerbside	Yes	2	0.5	2.5	NO ₂	No
SDT 8	Dunstan's Road	534553	174263	Kerbside	Yes	8	0.5	2.5	NO ₂	No
SDT 9	Dulwich Common	533473	173205	Kerbside	Yes	3	0.5	2.5	NO ₂	No
SDT 10	Adjacent to 2 Village Way	532940	174392	Kerbside	Yes	13	0.5	2.5	NO ₂	No
SDT 11	Adjacent to 11 Camberwell Church Street	532663	176740	Kerbside	Yes	2	0.5	2.5	NO ₂	No
SDT 12	AQMS Elephant & Castle - Tube 1	531882	178834	Urban background	Yes	10	35	2.5	NO ₂	Yes
SDT 13	AQMS Elephant & Castle - Tube 2	531882	178834	Urban background	Yes	10	35	2.5	NO ₂	Yes
SDT 14	AQMS Elephant & Castle - Tube 3	531882	178834	Urban background	Yes	10	35	2.5	NO ₂	Yes
SDT 15	Blackfriars Road	531641	180290	Kerbside	Yes	3	0.5	2.5	NO ₂	No
SDT 18	Tower Bridge Approach Tower Bridge Road	533599	180062	Roadside	Yes	3	0.5	2.5	NO ₂	No
SDT 20	Tower Bridge School Tower Bridge Road	533518	179844	Kerbside	Yes	2	0.5	2.5	NO ₂	No
SDT 24	Opposite Papa John's Tower Bridge Road	533444	179620	Kerbside	Yes	3	0.5	2.5	NO ₂	No

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 (m)	Affixed height (m)	Pollutants monitored	Tube co-located with an automatic monitor?
SDT 29	Opposite Haddon Hall Tower Bridge Road	533108	179117	Kerbside	Yes	2	0.5	2.5	NO ₂	No
SDT 31	Bricklayers Arms West	532938	179043	Kerbside	Yes	10	0.5	2.5	NO ₂	No
SDT 37	Lamppost 1068/09 Wansey Street	532340	178711	Kerbside	Yes	10	0.5	2.5	NO ₂	No
SDT 38	Walworth Road opposite junction to Elephant Road west	532074	178825	Kerbside	Yes	2	0.5	2.5	NO ₂	No
SDT 39	Lamppost 3 New Kent Road north (Metro Central)	532053	179070	Kerbside	Yes	10	0.5	2.5	NO ₂	No
SDT 41	Lamppost 29 New Kent Road north side (Rodney Place)	532390	178974	Kerbside	Yes	20	0.5	2.5	NO ₂	No
SDT 42	St Peters Hills Primary School	536047	180343	Kerbside	Yes	10	0.5	2.5	NO ₂	No
SDT 48	Adjacent to Beechwood Court 3 Crystal Palace Parade	535514	178708	Kerbside	No	20	0.5	2.5	NO ₂	No
SDT 49	Lamppost 129/08 Lynton Road west	533873	178592	Kerbside	Yes	10	0.5	2.5	NO ₂	No
SDT 52	Kingsdale Foundation School Alleyn Park	533150	172123	Kerbside	No	10	0.5	2.5	NO ₂	No
SDT 54	Camberwell Grove	532951	176417	Kerbside	Yes	10	0.5	2.5	NO ₂	No
SDT 55	Lamppost 11A St Georges Way South	533350	177603	Kerbside	Yes	3	0.5	2.5	NO ₂	No
SDT 57	Notre Dame School	531531	179256	Kerbside	Yes	5	0.5	2.5	NO ₂	No

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 (m)	Affixed height (m)	Pollutants monitored	Tube co-located with an automatic monitor?
SDT 61	Junction of Brunel Road and Rupack Street	535176	179665	Kerbside	Yes	3	0.5	2.5	NO ₂	No
SDT 66	Adjacent to Prince of Orange Lower Road	535384	179161	Kerbside	Yes	3	0.5	2.5	NO ₂	No
SDT 77	Adjacent to steps to Park St Southwark Bridge Rd	532294	180406	Kerbside	Yes	10	0.5	2.5	NO ₂	No
SDT 81	Lamppost 02 Borough High Street	532690	180212	Kerbside	Yes	3	0.5	2.5	NO ₂	No
SDT 82	Lamppost 01 Adjacent to 125 Borough High St	532572	180029	Kerbside	Yes	3	0.5	2.5	NO ₂	No
SDT 84	Lamppost 8 Little Dorritt Park Entrance	532487	179850	Kerbside	Yes	5	0.5	2.5	NO ₂	No
SDT 87	Lamppost 0139/43 188A Lower Road	535795	178828	Kerbside	Yes	3	0.5	2.5	NO ₂	No
SDT 88	Lamppost 52 Jamaica Road	534457	179454	Kerbside	Yes	5	0.5	2.5	NO ₂	No
SDT 89	St James' CoE Primary School Jamaica Road	534241	179435	Roadside	Yes	0.5	2	2.5	NO ₂	No
SDT 90	Lamppost Adjacent to 375 Old Kent Road	533800	178220	Kerbside	Yes	5	0.5	2.5	NO ₂	No
SDT 91	Lamppost adjacent to 221 Old Kent Road	533379	178556	Kerbside	Yes	3	0.5	2.5	NO ₂	No
SDT 92	Ilderton Primary School Ilderton Road	535222	178032	Roadside	Yes	0.5	2	2.5	NO ₂	No
SDT 93	Lamppost 9 adjacent to 14 Hanover Park	534243	176558	Roadside	Yes	2	0.5	2.5	NO ₂	No
SDT 94	Post adjacent to 88A Peckham High Street	534200	176736	Roadside	Yes	2	0.5	2.5	NO ₂	No
SDT 95	Court Lane	533700	173892	Kerbside	Yes	2	0.5	2.5	NO ₂	No
SDT 96	Lamppost adjacent to 201 Rye Lane	534371	176079	Kerbside	Yes	2	0.5	2.5	NO ₂	No
SDT 97	Barry Road	533940	173998	Kerbside	Yes	5	0.5	2.5	NO ₂	No
SDT 98	South Circular Road Junction with Underhill Road	534503	173251	Kerbside	No	9	0.5	2.5	NO ₂	No

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 (m)	Affixed height (m)	Pollutants monitored	Tube co-located with an automatic monitor?
SDT 99	Etherow Street	534010	174018	Kerbside	Yes	10	0.5	2.5	NO ₂	No
SDT 100	Post adjacent to 1d Calton Avenue	533159	174191	Kerbside	Yes	2	0.5	2.5	NO ₂	No
SDT 101	Lamppost 307/19 Adjacent to 91 Herne Hill	532303	174756	Kerbside	Yes	5	0.5	2.5	NO ₂	No
SDT 102	Lamppost 1 De Crespigny Park	532599	176277	Kerbside	Yes	5	0.5	2.5	NO ₂	No
SDT 103	Lamppost 369/7 Coldharbour Lane	532471	176388	Kerbside	Yes	15	0.5	2.5	NO ₂	No
SDT 104	Lamppost 08 Newington Causeway	531835	178686	Kerbside	Yes	15	0.5	2.5	NO ₂	No
SDT 105	Lamppost adjacent to Oliver Goldsmith School entrance Southampton Way	533592	176851	Kerbside	Yes	0.5	0.5	2.5	NO ₂	No
SDT 106	Post adjacent to 80 Camberwell Road	532409	177597	Kerbside	Yes	18	0.5	2.5	NO ₂	No
SDT 107	Lamppost 1045/45 adjacent to 351 Walworth Road	532426	178051	Kerbside	Yes	10	0.5	2.5	NO ₂	No
SDT 108	Lamppost 255/14 Borough High Street / Harper Road Junction	532262	179462	Kerbside	Yes	6	0.5	2.5	NO ₂	No
SDT 109	Lamppost 255/14 Harper Road / Falmouth Road Junction	532460	179229	Kerbside	Yes	7	0.5	2.5	NO ₂	No
SDT 110	Lamppost 1422/06 Globe Academy School Harper Road	532496	179101	Kerbside	Yes	15	0.5	2.5	NO ₂	No
SDT 111	Lamppost 31A/239 Walworth Road	532294	178354	Kerbside	Yes	5	0.5	2.5	NO ₂	No

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 (m)	Affixed height (m)	Pollutants monitored	Tube co-located with an automatic monitor?
SDT 112	Parking Sign Adjacent to 3 West Square	531621	179112	Kerbside	Yes	3	0.5	2.5	NO ₂	No
SDT 113	Lamppost adjacent to 43 Westminster Bridge Road	531481	179421	Kerbside	Yes	7	0.5	2.5	NO ₂	No
SDT 114	Lamppost 1 Goose Green / East Dulwich Road	533799	175324	Kerbside	Yes	10	0.5	2.5	NO ₂	No
SDT 115	Lamppost 2110/04 Nairne Grove	533966	176238	Kerbside	Yes	10	0.5	2.5	NO ₂	No
SDT 116	Lamppost 2111/03 Woodfarms	533101	176152	Kerbside	Yes	15	0.5	2.5	NO ₂	No
SDT 117	Lamppost 2290/04 Dylways	533681	179010	Kerbside	Yes	9	0.5	2.5	NO ₂	No
SDT 118	Lamppost 2655L28 Bellenden Road	533966	176238	Kerbside	Yes	10	0.5	2.5	NO ₂	No
SDT 119	Lamppost 21 Camberwell Grove	533101	176152	Kerbside	Yes	10	0.5	2.5	NO ₂	No
SDT 120	Adjacent to Boucher CoE Primary School Grange Road	533681	179010	Kerbside	Yes	0	4	2.5	NO ₂	No
SDT 121	Front Playground Boucher CoE Primary School	533683	179004	Background	Yes	0	6	2.5	NO ₂	No
SDT 122	Rear entrance Boucher CoE Primary School	533598	179036	Kerbside	Yes	0	1	2.5	NO ₂	No
SDT 123	Goose Green School 1	533680	175394	Kerbside	Yes	5	0.5	2.5	NO ₂	No
SDT 124	Goose Green School 2	533666	175332	Background	Yes	0	8	2.5	NO ₂	No
SDT 125	Goose Green School 3	533645	175374	Background	Yes	0	15	2.5	NO ₂	No
SDT 126	Goose Green School 4	534687	176165	Background	Yes	0	9	2.5	NO ₂	No
SDT 127	Goose Green School 5	533666	175389	Background	Yes	0	15m	2.5	NO ₂	No
SDT 128	Lamppost adjacent to 1 Consort Road	533682	175378	Kerbside	Yes	6	0.5	2.5	NO ₂	No
SDT129	Lamppost 2465/31 Adjacent to St. Mary Magdalene Primary School	534677	176703	Kerbside	Yes	7	0.5	2.5	NO ₂	No
SDT 130	Lamppost 2493/11 Heaton Road	534606	176023	Kerbside	Yes	12	0.5	2.5	NO ₂	No

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 (m)	Affixed height (m)	Pollutants monitored	Tube co-located with an automatic monitor?
SDT 131	Lamppost 2744/11 50 Copeland Road	534508	176184	Kerbside	Yes	8	0.5	2.5	NO ₂	No
SDT 132	Lamppost 2732/01 adjacent to 117-125 Rye Lane	534237	176363	Kerbside	Yes	5	0.5	2.5	NO ₂	No
SDT 133	Lamppost opposite 65 Lyndhurst Way	533895	176186	Kerbside	Yes	5	0.5	2.5	NO ₂	No
SDT 134	Lamppost 2736/09 Nigel Road	534372	175911	Kerbside	Yes	9	0.5	2.5	NO ₂	No
SDT 135	Lamppost 2791/02 opposite Prince of Peckham 1-3 Clayton Road	534438	176736	Kerbside	Yes	14	0.5	2.5	NO ₂	No
SDT 136	Lamppost 2160/12 adjacent to Dog Kennel Hill School	533232	175775	Kerbside	Yes	10	0.5	2.5	NO ₂	No
SDT 137	Lamppost 2136/18 at the T-junction adjacent to Champion Hill	532987	175568	Kerbside	Yes	10	0.5	2.5	NO ₂	No

1.2 Comparison of Monitoring Results with Air Quality Objectives

The results presented are after adjustment for both 'annualisation' and 'distance to a location of relevant public exposure'. The details of the adjustments applied can be seen in Appendix A.

Table D Annual Mean NO₂ Ratified and Bias-adjusted Monitoring Results (µg.m⁻³)

Site ID	Site type	Valid data capture for monitoring period %	Valid data capture 2018 %	Annual Mean Concentration (µg.m ⁻³)						
				2012	2013	2014	2015	2016	2017	2018
SWK5	Roadside	85	85	52 (80%)	55 (>90%)	38 (32%)	42 (69%)	53 (80%)	42 (97)	41
SWK6	Urban Background	>90	>90	N/A	42 (85%)	37 (84%)	41 (80%)	39 (90%)	34 (97)	32

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

Any NO₂ annual mean in excess of 60 µg.m⁻³, indicating a potential exceedance of the NO₂ hourly mean objective limit, would be shown in bold and **underlined**.

The data in Table D shows that at the Old Kent Road site (SWK5), the annual mean concentration has exceeded the objective of 40µg.m⁻³ every year since its installation in 2011, except in 2014, but has a slow downward trend.

The data also shows that the annual mean concentration at the Elephant & Castle site (SWK6) is under the NO₂ objective this year. This fall is likely due to a combination of the reduction in the number of local active construction sites and highway changes, to make space for the installation of cycle ways, that moved the roadside kerb 10m further away from the monitoring station. This site is now compliant with the NO₂ objective.

Neither site breached 60 µg.m⁻³ which would have indicated potential exceedances of the NO₂ hourly mean objective limit in 2018

Figure 1 shows the data trends at Southwark monitoring stations.

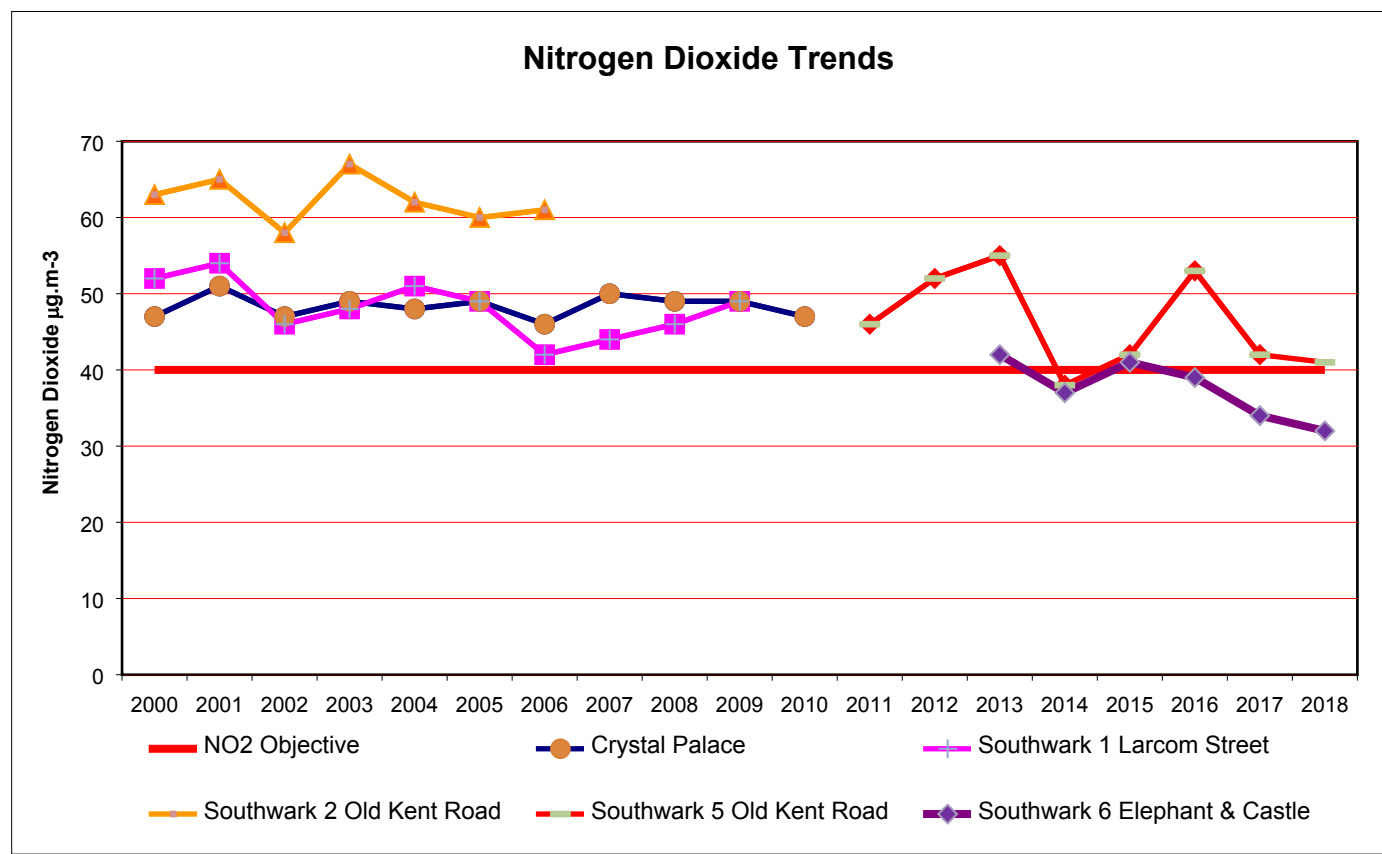


Figure 1 Trends in Annual Mean NO2 Concentrations Measured at the Borough's Automatic Monitoring Sites

Figure 2, overleaf shows the mean average results from all roadside and background monitoring stations within the London Air Quality Network³. The trend for background sites shows a gradual reduction to meet the objective. However, the trend for roadside locations is not reducing noticeably and they almost universally exceed the NO₂ objective.

³ London Datastore - London Average Air Quality Levels accessed at <http://data.london.gov.uk/dataset/london-average-air-quality-levels>

Nitrogen Dioxide (NO₂) in the London Area

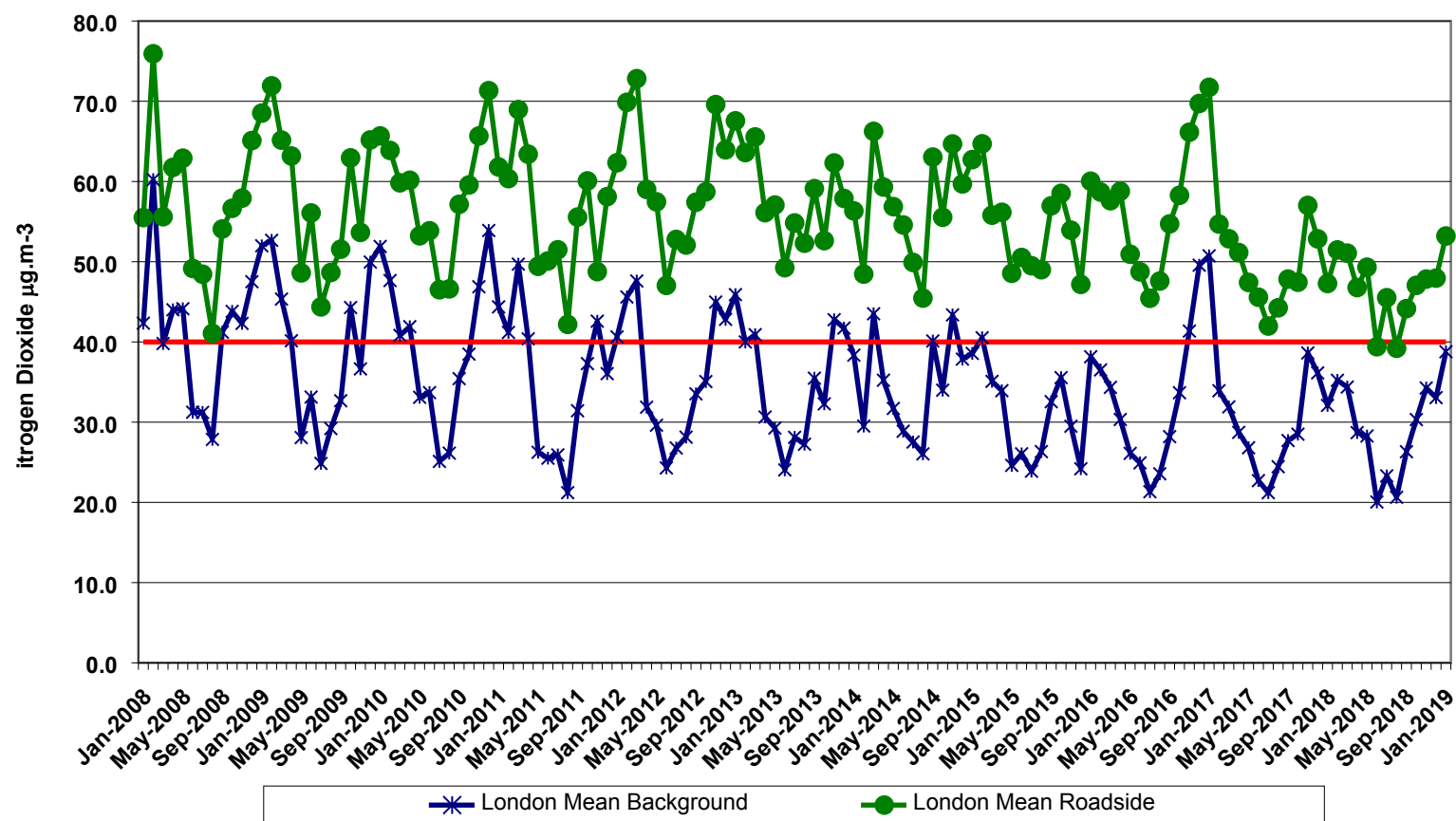


Figure 2 Monthly Mean Trends of NO₂ Concentrations at London Roadside and Background Sites
 (Source GLA accessed at <http://data.london.gov.uk/dataset/london-average-air-quality-levels>) (accessed February 2019)

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

Site ID	Valid data capture for monitoring period %	Valid data capture 2018 %	Number of hourly means measured > 200 µg.m ⁻³						
			2012	2013	2014	2015	2016	2017	2018
SWK5	85	85	6 (80%)	4 (>90%)	1 (32%)	1 (69%)	1 (80%)	0	0
SWK6	>90	>90	N/A	0 (85%)	0 (84%)	0 (80%)	0 (90%)	0	0

Any exceedance of the NO₂ short term objective of 200µg.m⁻³ (over the 18 days per year permitted) would be shown in **bold**.

In Southwark, in 2018, the number of exceedances of the hourly mean >200µg.m⁻³ objective permitted did not exceeded 18, thus meet the NO₂ short term objective.

Since 2012 there has been a noticeable reduction in the number of exceedances being recorded at roadside.

Table F Long term NO₂ Diffusion Tube Monitor Results in the Borough (µg.m⁻³)

Site ID	2012	2013	2014	2015	2016	2017	2018
SDT 1 - 3	50.0	56.7	57.6	48.1	47.0	42.0	38.0
SDT 4	52.3	<u>61.9</u>	<u>63.5</u>	57.2	54.6	47.6	42.5
SDT 5	35.6	38.4	38.2	35.8	34.1	29.3	30.7 ⁴
SDT 6	48.6	51.6	54.3	49.7	42.9	42.0	39.4
SDT 7	51.3	57.0	<u>61.5</u>	52.5	44.3	41.7	35.6
SDT 8	32.6	37.0	33.8	31.6	31.1	27.9	26.0
SDT 9	45.6	50.5	54.0	47.0	44.8	41.2	37.3
SDT 10	33.6	36.6	34.9	33.7	30.1	28.0	28.3
SDT 11	<u>72.0</u>	<u>80.1</u>	<u>78.1</u>	<u>70.4</u>	<u>60.0</u>	55.1	50.8
SDT 12 - 14	50.7	<u>66.3</u>	<u>70.6</u>	<u>65.7</u>	58.9	44.7	35.0
SDT 15	57.2	<u>66.0</u>	<u>66.4</u>	57.3	<u>63.5</u>	53.0	47.1

The results in **bold** are where exceedances of the NO₂ annual mean AQD of 40µg.m⁻³ have been monitored.

The results in bold and **underlined** are where NO₂ annual means in excess of 60µg.m⁻³ have been monitored, indicating potential exceedance of the NO₂ hourly mean objective limit.

Table F above contains the results from the monitoring locations in Southwark where there are results for at least 5 years. The data has been corrected for distance to a point of relevant exposure, as described in the LLAQM Technical Guidance TG (16).

The results at each site have varied due to weather and local conditions, however, the overall assessment is that there is a noticeable reduction in the number of locations that have exceeded the objective values. Compared to previous years there are more locations below the objective as overall measured pollutant levels continue to slowly reduce. More sites with data for 5 years will be added to the above table next year.

⁴ This result is lower than the background concentration in the Defra Background Maps therefore cannot be corrected for distance to a point of relevant exposure.

Over recent years the NO₂ diffusion tube survey has been significantly extended to increase the spatial distribution of monitoring locations across the borough and for project evaluation. The survey now ensures all the GLA Air Quality Focus Areas in Southwark are monitored.

The full results of the all diffusion tubes are presented in Appendix B. There are numerous sites showing the annual mean objective for Nitrogen Dioxide is being exceeded and a few sites indicating that the hourly objective may be being exceeded. However, higher than average readings would be reasonably expected from locations in the GLA Air Quality Focus Areas. This data will be used when reviewing the Southwark's Air Quality Management Area next year and for evaluating the air quality impact of the ULEZ.

Table G Annual Mean PM₁₀ Automatic Monitoring Results (µg.m⁻³)

Site ID	Valid data capture for monitoring period %	Valid data capture 2018 %	Annual Mean Concentration (µg.m ⁻³)						
			2012	2013	2014	2015	2016	2017	2018
SWK5	80	80	25 (82%)	30 (85%)	23 (32%)	21 (60%)	24 (94%)	22	22
SWK6	>90	>90	N/A	23 (80%)	19 (>90%)	20 (77%)	26 (79%)	19	20

Any exceedance of the PM₁₀ annual mean AQO of 40µgm⁻³ would be shown in **bold**.

The PM₁₀ annual mean concentrations meet the national air quality objective. There has been a slight upward trend of the annual mean concentrations over the past three years, but this year monitored levels have fallen, as can be seen in Figure 3.

The trends for the entire London Air Quality Network roadside and background monitoring stations can be seen in Figure 4 and these show that current concentrations are well below the objective limit at both roadside and background monitoring locations.

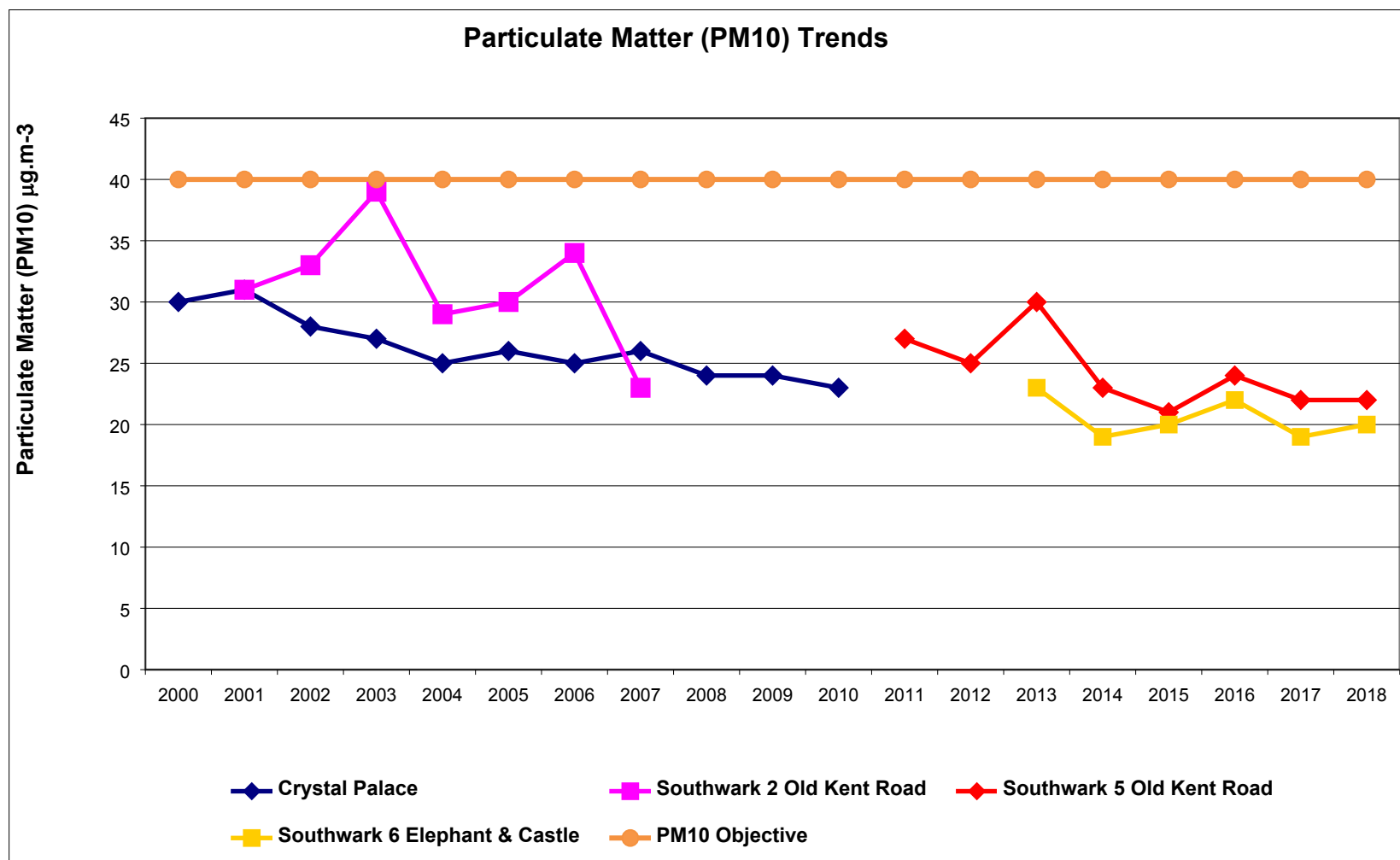


Figure 3 Trend for the Annual Mean PM₁₀ Concentrations of the Authority's PM₁₀ monitoring stations

Particulate Matter (PM10) trends

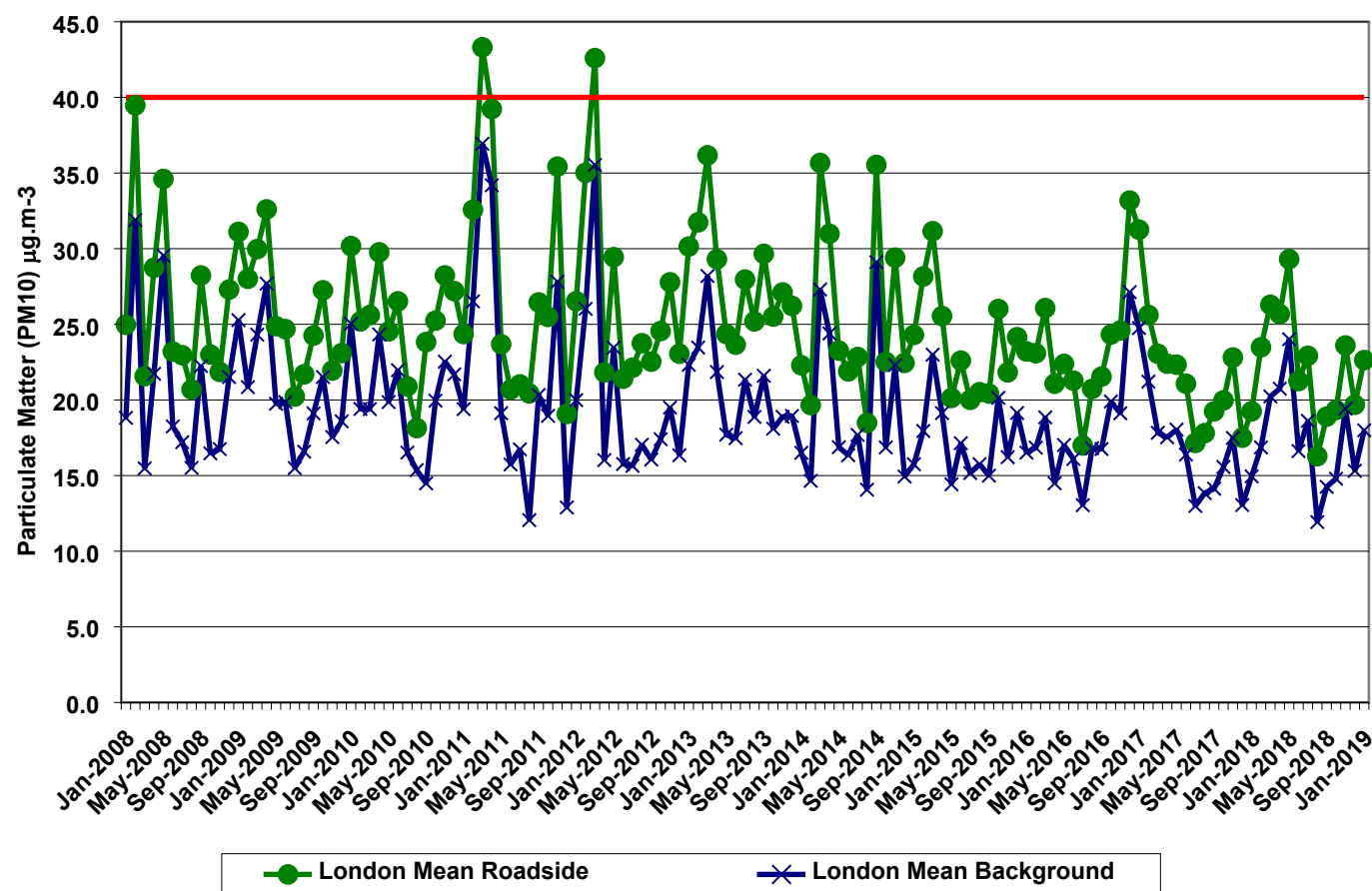


Figure 4 Trend for the Monthly Mean PM₁₀ concentrations at roadside and background sites in the London area

(Source GLA accessed at <http://data.london.gov.uk/dataset/london-average-air-quality-levels>) (Accessed February 2019)

Table H **PM₁₀ Automatic Monitoring Results: Comparison with 24-Hour Mean Objective**

Site ID	Valid data capture for monitoring period %	Valid data capture 2017 %	Number of Daily Means > 50 µg.m ⁻³						
			2012	2013	2014	2015	2016	2017	2018
SWK5	93	93	19 (82%)	30(85%)	10 (32%)	4 (60%)	18 (94%)	19	8
SWK6	99	99	N/A	3 (80%)	0 (>90%)	1 (77%)	21 (79%)	1	2

Exceedance of the PM₁₀ short term limit of 50µg.m⁻³ (over the permitted 35 days per year or where the 90.4th percentile exceeds 50µg.m⁻³) would be shown in **bold**.

There has been no exceedance of the short term objective limit for PM₁₀ in Southwark in 2018.

Particulate Matter (PM_{2.5})

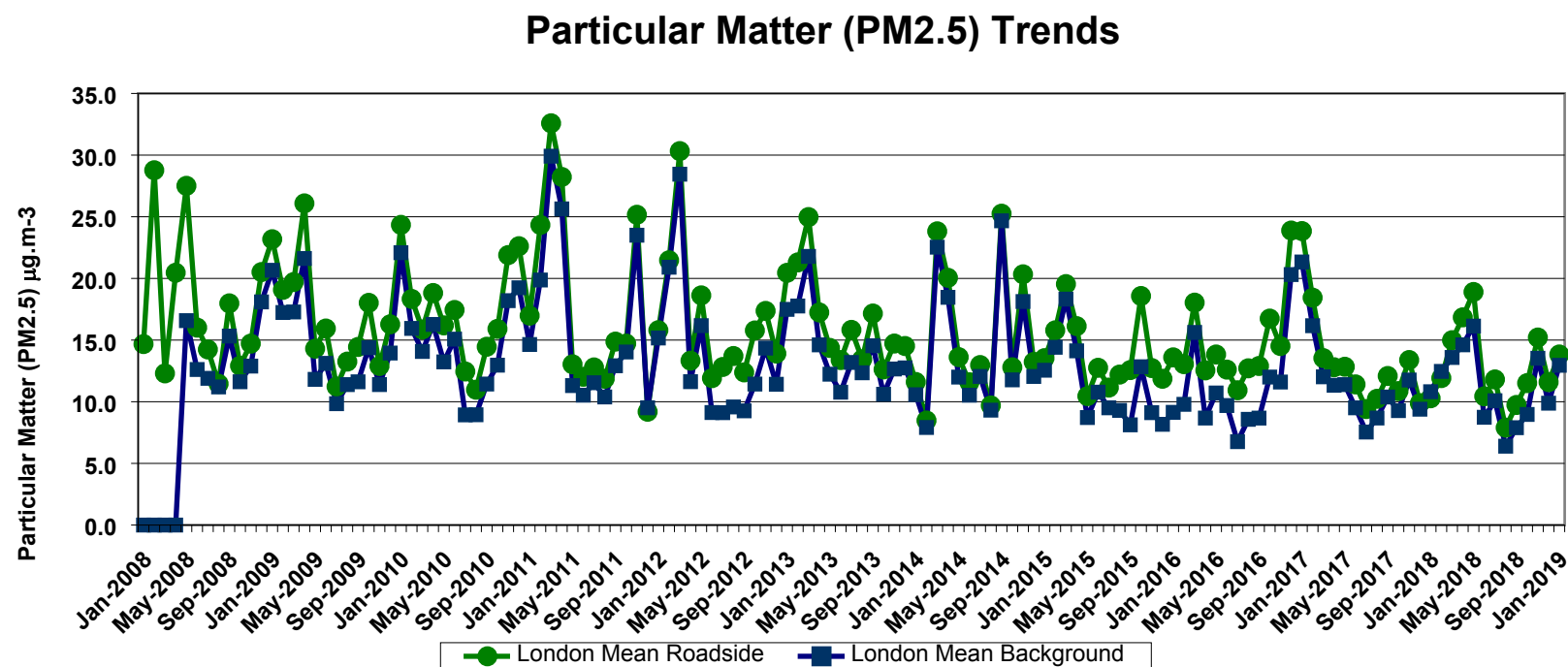


Figure 5 Trend for the Monthly Mean Particulate Matter (PM_{2.5}) Concentrations at Roadside and Background Sites in the London Area

(Source GLA accessed at <http://data.london.gov.uk/dataset/london-average-air-quality-levels> (Accessed February 2019))

Southwark does not currently monitor PM_{2.5}, however, there is a commitment to introduce PM_{2.5} monitoring at all of the planned expanded network of 5 monitoring stations in the Borough. It is anticipated these will be installed and commissioned by the end of the financial year 2019/20. Figure 5 shows the average concentrations of all the PM_{2.5} roadside and background monitors in the London Air Quality Network. The AQO for PM_{2.5} is 25µg.m⁻³ by 2020. As can be seen from the graph above, the average PM_{2.5} is below the objective for London and has continued in a slow downward trend since 2008.

Sulphur Dioxide (SO₂) Trends

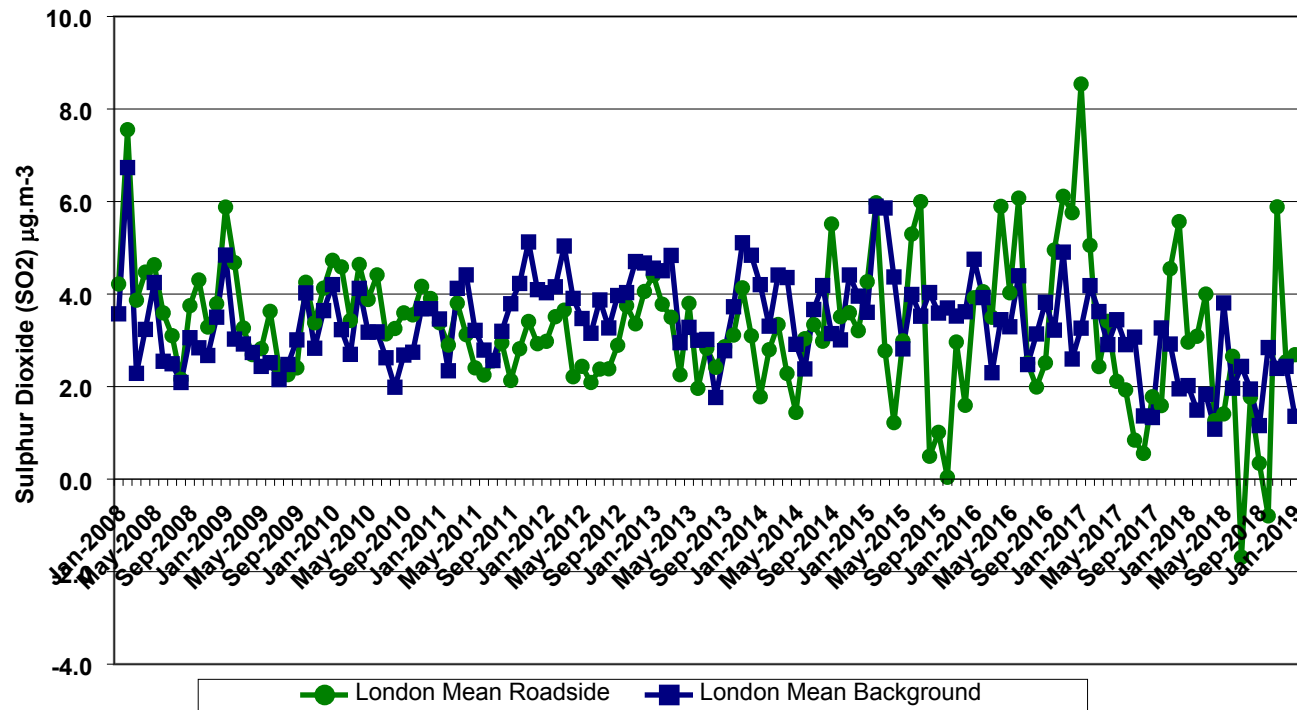


Figure 6 Trends of the Monthly Mean Sulphur Dioxide (SO₂) Concentrations at Roadside and Background Sites in the London Area
(Source GLA at <http://data.london.gov.uk/dataset/london-average-air-quality-levels>) (Accessed February 2019)

Southwark does not monitor for SO₂. Figure 6 shows the average concentrations of all the SO₂ roadside and background monitors in the London Air Quality Network. The concentrations are well below the various objective limits. The 24-hour mean objective, not to be exceeded more than 3 times a year, is 125µg.m⁻³ and this is off the scale of the graph above.

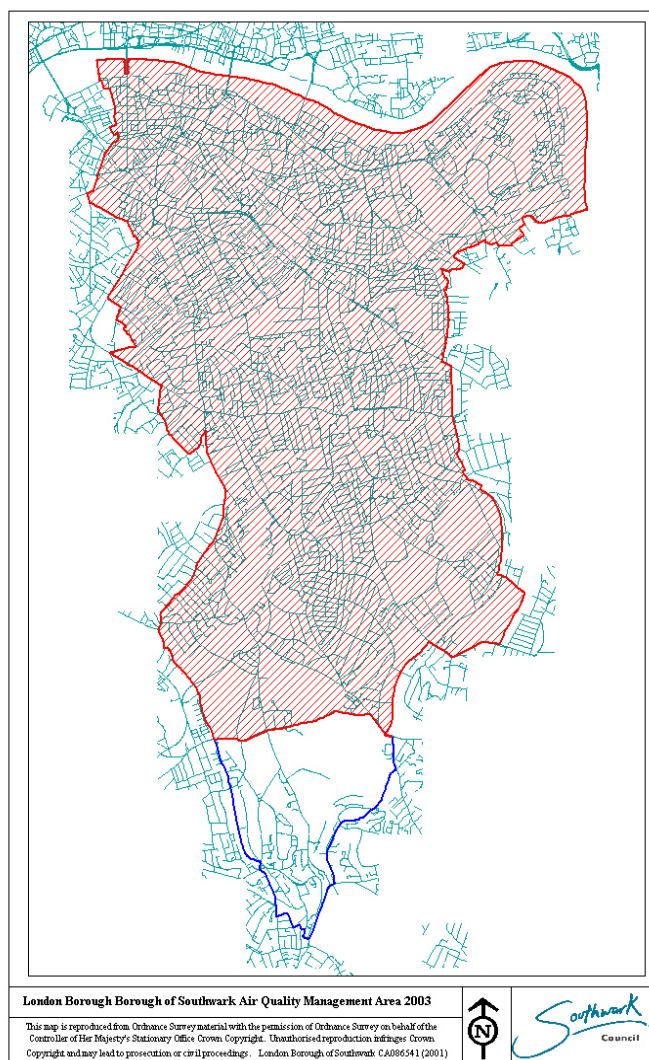


Figure 7 Map of Southwark's AQMA Boundary

1.3 Southwark's Air Quality Management Area

Figure 7 shows a map of the designated Air Quality Management Area in Southwark. This area was designated in 2003⁵ and has remained unchanged through several reviews since then.

1.4 GLA Air Quality Focus Areas (in Southwark)

Figure 8 on the following page shows the GLA Air Quality Focus areas in Southwark. For each GLA Air Quality Focus Area⁶, there are objectives in the Air Quality Action Plan to reduce emissions and/or exposure to pollutants.

⁵ <https://www.southwark.gov.uk/assets/attach/3635/Southwark-air-quality-management-area-order-2003.pdf>

⁶ <https://data.london.gov.uk/dataset/laei-2013-london-focus-areas>

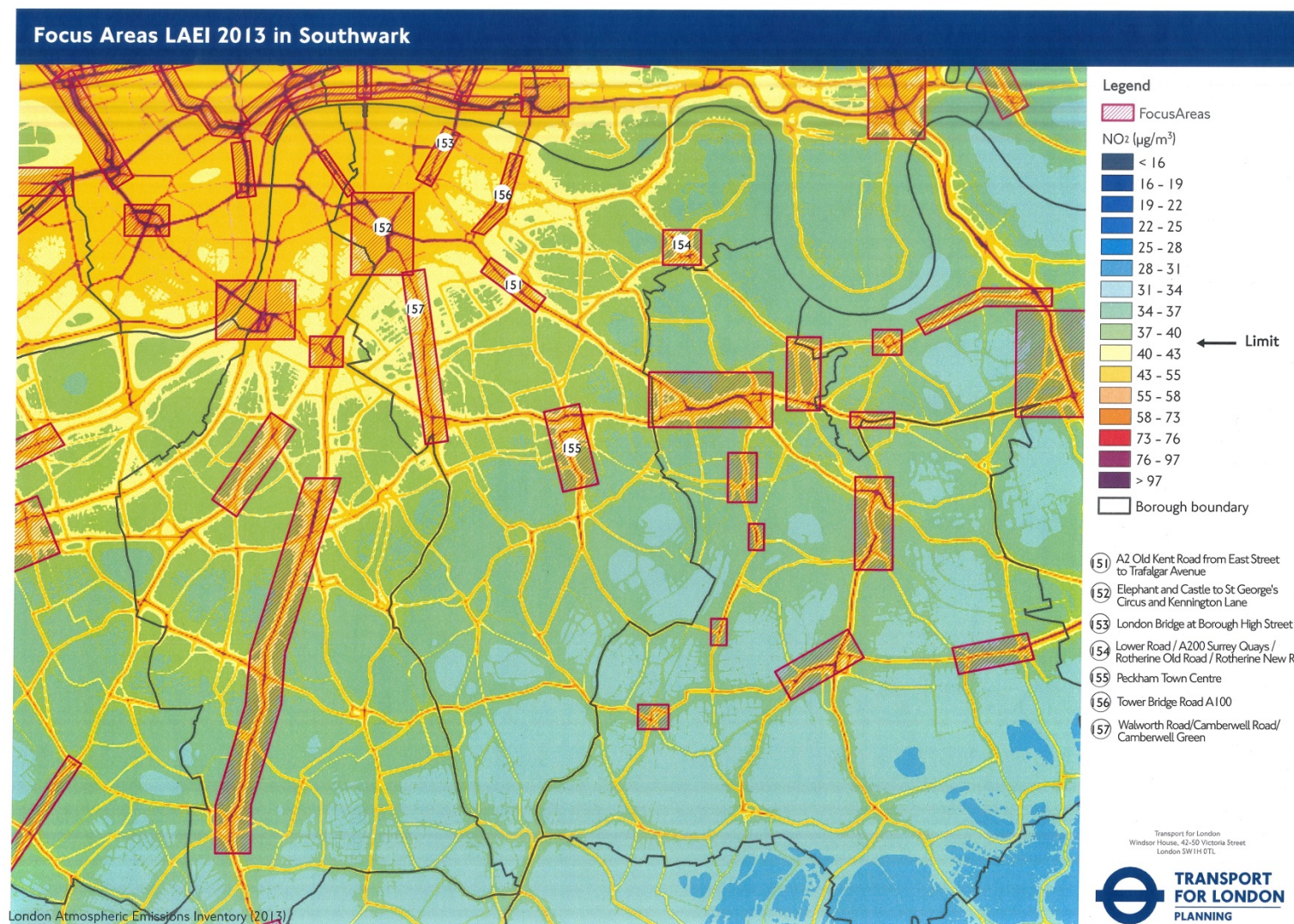


Figure 8 Map showing the GLA Air Quality Focus areas in the London Borough of Southwark

2. Actions to Improve Air Quality

2.1 Air Quality Action Plan – Progress

Table J provides a brief summary of progress against the Air Quality Action Plan, showing progress made this year. New projects which commenced in 2017 are shown at paragraph 2.2

Table I **Delivery of Air Quality Action Plan Measures**

No.	Measure		Action	Progress	Further information
1.1	Air quality monitoring	Maintain the two continuous air quality monitoring stations	Ensure that the air quality monitoring stations at the Elephant & Castle and the Old Kent Road are maintained, serviced and calibrated to current guidance	1 of the 2 AQMS collected >90%, due to the failure of the air conditioning system at the OKR site which took time to repair. The OKR AQMS collected 80% data. The number of AQMS will be increased from 2 to 5 over the next year	Target partially met
1.2		Maintain the NO ₂ diffusion tube survey	Ensure that the NO ₂ diffusion tube monitoring is maintained in accordance with current guidance	NO ₂ diffusion tube monitoring has been maintained in accordance with current guidance	Target met
1.3				Data for the NO ₂ diffusion tube monitoring is available at https://www.southwark.gov.uk/assets/attach/7491/Nitrogen-Dioxide-data-2012-2017.xlsx	Target met
1.4		Review the use of low-cost sensor technology to support air quality modelling	Support the University consortium 'Managing air for green inner cities' (MAGIC) project (London Road)	1st project phase is complete. A further MAGIC monitoring project around the Elephant & Castle is being conducted during Summer 2019	Target met
1.5	London Local Air Quality Management Framework	Prepare and produce all London Local Air Quality Management Framework reports as required	All reports required by the London Local Air Quality Management Framework produced and submitted	All reports submitted by deadline	Target met

No.	Measure		Action	Progress	Further information
1.6	London Local Air Quality Management Framework	Respond to all appropriate air quality consultations	Review all air quality consultation requests and respond where appropriate	During the year, the EPT received 10 consultations relating to air quality, all (100%) were reviewed and 9 responses were submitted	Target met
1.7		Ensure the air quality action plan is current	Review the local air quality action plan to ensure it records achieved objectives and takes account of new evidence	The local air quality action has been reviewed and potential new measures for consideration are listed in section 2.3 of this report	Target met
1.8		Have and continue to develop a communication plan and campaign of relevant air quality improvement topics	Devise an air quality communication plan and campaign	An annual air quality communication plan and campaign has been devised and implemented	Target met
1.9		Support the Mayor of London's call for a government scrappage scheme for private diesel vehicle in line with JSNA recommendation to continue to advocate for wider, regional action to address air quality	3 public statement/s of support from Cabinet Member issued	The Cabinet Member has made public statements regarding the Government's Clean Air Strategy, both the Mayor's Environment and Transport Strategies. Southwark has also publically supported the introduction of a scrappage scheme	Target exceeded
1.10	London Local Air Quality Management Framework	Support the Mayor of London's call that the Government should modify the Vehicle Excise Duty regime to disincentive the purchase of diesel vehicles in line with the JSNA recommendation to advocate for wider regional action to address air quality	3 Public statement/s of support from Cabinet Member	The Cabinet Member has made public statements regarding the Government's Clean Air Strategy, the Mayor's Environment and Transport Strategies and has publically supported the introduction of a scrappage scheme	Target exceeded
1.11		Support the introduction of a new or revised Clean Air Act that improves public protection from atmospheric pollution in line with the JSNA recommendation to continue to advocate for wider regional action to address air quality	Explore whether there is support for new or revised Clean Air Act or a new London Act with the GLA and London Councils	Southwark has engaged with the City of London, London Councils and the first readings of two private Members Bills. There is now a commitment by the UK Government to introduce further clean air legislation in the Environment Bill. A new measure to ensure the provisions introduced in any Environment Bill is required.	Action complete

No.	Measure		Action	Progress	Further information
2.1	Local Air Quality Assessments	Ensure that Southwark Council's air quality technical guidance provides the latest advice on air quality assessment and mitigation	Devise air quality technical guidance	Air quality technical guidance produced and can be accessed at https://www.southwark.gov.uk/assets/attach/4406/Technical-Guidance-on-Air-Quality.pdf This is revised annually to ensure it remains current	Target met
2.2			Include the air quality technical guidance standards in an SPD	Technical guide is available but Southwark planning SPDs are to be updated following the adoption of the New Southwark Plan which has been delayed and will be finalised in 2020	Commenced
2.3	Environmental Standards	Planning applications assessed to ensure that all developments will meet the requirements of the local air quality technical guidance	Assessment of 100% of all relevant planning applications with reference to the air quality technical guidance	100% of all relevant planning applications have been assessed to ensure the developments will meet local air quality technical guidance standards	Target met
2.4	Increase the awareness of residents, businesses & visitors of the need to reduce emissions to atmosphere	Promote the reduction of total emissions to atmosphere	Public information campaign on domestic or commercial heating fuel type and fuel economy	Public information was provided to the editors of 'Southwark Life' but was not published. Another campaign is proposed for Autumn 2019. Over Xmas 2018 several seasonal tweets from the service included information regarding open fires, log burners and appropriate fuels	Target partially met
2.5	Low Emission Neighbourhood	Review the GLA Low Emissions Neighbourhoods pilot projects to support the JSNA recommendation to maintain a multi-agency approach to AQ	Review and learn from the evaluation reports of the MAQF Low Emission Neighbourhood schemes	There is a watching brief regarding evaluation reports for previous London LENS. Southwark has (successfully) applied to the MAQF for funding towards a LEN in Walworth	Target met

No.	Measure		Action	Progress	Further information
3.1	Encourage residents and those working in the borough to walk and cycle	Encourage children and parents to walk or cycle to school or nursery	Promote School Travel Plans & increase the number of schools attaining TfL STARs Silver or Gold accreditation each year	2016/17: Silver 12 & Gold 16 = 28 2017/18: Silver 6 & Gold 24 = 28 6 Silver accredited schools are now Gold. AQ Audit of schools and targeting of schools with no accreditation will substantially inc. number of engaged schools moving forward	Target not met for Silver
3.2					Target exceeded for Gold
3.3		Encourage Southwark staff to commute by walking or cycling	Promote the Authority's Travel Plan	A staff travel plan delivery and steering group has been instigated and its scope and governance agreed. Initial milestones are around ending staff car leasing schemes and mobilisation plans. The car lease scheme will end on 1 st Sept 2019	Target met
3.4			Provide greater access to cycles for staff	The use of pool bikes is stable, the number of staff commuting by cycle is increasing. There is a bicycle user group, staff loans to buy bikes and a new internal campaign to encourage staff to cycle will be launched in March 2019	Target met
3.5				No need for more pool bikes this year – will be removed as lease car scheme is closed	Target met
3.6		Encourage employees of businesses in Southwark to commute by foot or cycle	Encourage employees of businesses in Southwark walk or cycle through the promotion of business specific travel plans	No business specific travel plans were produced in 2018, London Bridge Bid prepared a cycling strategy promoting the business use of cargo bikes. Target to be reviewed to capture private sector active travel activities	Target not met – see revised action at 3.17 on page 52
3.7		Encourage residents to walk or cycle in the Borough	Promote active travel through relevant public health work streams and services including physical activity and healthy weight	The Healthy Weight Network continues to meet. PH informed and reviewed Southwark's Movement Plan. Recommendations to key strategies included the Healthy Weight Strategy and Air Quality JSNA	Target met
3.8	Increase public awareness of air quality forecasting	Public aware of how to access AirText, CityAir	Promotion of availability of AirText, CityAir and Walkit apps especially	EPT and PH staff informed the design of the AirText evaluation questionnaire. The survey results were received Spring 2019. Actions to increase public awareness of AirText and other air	Target met

No.	Measure		Action	Progress	Further information
	and information on avoidance of high levels of pollutants	and Walkit apps	to vulnerable groups	quality forecasting systems and apps, particularly with BAME communities, is planned for autumn 2019. All listed are routinely promoted on the website and on all relevant email correspondence	
3.9	Evidence based policy	Ensure action to tackle the health impact where air quality information is intelligence led and evidence based	Provide PH advice and guidance on the health impacts of air quality and mitigating actions	Ongoing – JSNA on Air Quality is reviewed annually	Target met
3.10	Web information on air quality	Southwark website content has comprehensive air quality information and guidance	Ensure web-based information is accurate and up to date	Website updated twice in 2018 with new information, links and features added	Target met
3.11	Increase awareness of air quality issues	Public and businesses aware of the impact of their actions on air quality	Communication campaign on personal or business behaviour change to improve air quality	Banners, posters, advertisements, a video and pledge cards were produced as part of Southwark's #onething campaign. These have been distributed on hoardings, buses, online, on railing & fences, throughout the boroughs estate (libraries, offices, depots) and in person during air quality awareness raising actions	Target met
3.12		Provide general public with advice on what they can do to improve air quality	Prepare guidance for general public on what they can do to improve air quality	Webpages updated and #onething campaign aimed at the general public	Target met
3.13		Notify Community Councils of revised Air Quality Strategy 2017 – 2022 in support of JSNA recommendation to maintain our multi-agency approach to air quality	Present new Air Quality Strategy 2017 – 2022 at Community Councils	All Community Councils notified and presentations made	Action complete (2017)
3.14	Protect health vulnerable groups including children, the ill and the elderly from poor air quality	Ensure those advising people in poor respiratory health have advice on reducing personal exposure to atmospheric pollutants	Work with clinicians via Breathlessness Group of CCG to ensure GPs and other health professionals have access to appropriate prompts, advice and	Recommendations from EPT on the Lambeth & Southwark Adult Breathlessness Assessment Algorithm issued to CCG included environmental factors. The algorithm is no longer in use and has been superseded by the CES breathlessness guide http://www.clinicaleffectivenesssouthwark.co.uk	Target partially met

No.	Measure		Action	Progress	Further information
			information for use in GP surgery consultations	Advice leaflets on health and air quality at home and work have been produced and will be inserted on the Southwark NHS intranet & council website and introduced at appropriate nursing forums soon	
3.15	Protect health vulnerable groups including children, the ill and the elderly from poor air quality	Provide advice to schools and nurseries with regard to improving air quality in and around their premises and on how to avoid exposure to high pollution environments	Devise advice to schools on air quality	Guidance for schools on air quality was developed, disseminated and placed on our website in 2017. It was updated in 2018 and will be reviewed annually	Action complete

No.	Measure		Action	Progress	Further information
4.1	Reducing Emissions from Delivery and Servicing	Develop a freight consolidation solution for Southwark	Carry out a joint feasibility study with Lambeth, Wandsworth and Croydon	Feasibility study indicated minimal or no benefit from implementation of a consolidation solution	Action complete
4.2			If the feasibility study is positive, implement and monitor the preferred solution	Not applicable due to the outcome of Measure 4.1	Action complete
4.3			Evaluate the impact of the preferred solution	Not applicable due to the outcome of Measure 4.1	Action complete
4.4		If consolidation centre opens – All Southwark Council suppliers to use the proposed freight consolidation solution where possible	Ensure in-contract documentation that all Southwark Council suppliers are required to use any implemented consolidation solution	Not applicable due to the outcome of Measure 4.1	Action complete
4.5		All non-consolidation solution suppliers, to the Authority, with a large fleet to join the Fleet Operator Recognition Scheme (FORS) and obtain Silver accreditation as a minimum	Insert within standard contract documentation that all suppliers of large fleet are required to hold Silver accreditation of the Fleet Operator Recognition Scheme (FORS) or it be achieved within six months of the contract being signed, along with an ongoing commitment to use ULEV's	Ongoing. At present Southwark only require Bronze standard. Discussions with procurement staff have commenced but no policy change finalised as yet	Commenced
4.6		To support sustainable logistical measures in the north of the Borough	Work with stakeholders to promote rationalisation of deliveries and using low & zero emission vehicles and local distribution hubs for final stage delivery. Explore the feasibility of new technologies for smart deliveries	Southwark supported Team London Bridge and Shad Thames in investigating improved freight management in their areas. We also worked with organisations and developers, through the planning process, to reduce the air quality impact of deliveries and servicing	Target met

No.	Measure		Action	Progress	Further information
4.7	Reducing Emissions from Delivery and Servicing	Reduce Southwark commercial fleet emissions	Switch to use of low or no emission vehicles	196 LCVs replaced in 2018. 3 full electric vehicles. Plan for 11 full electric vehicles to be introduced to services in 2019 through vehicle replacement. All new diesel vehicles incorporated within the fleet are Euro 6 as minimum	Target met
4.8			Produce mileage and efficiency guidance for services	Ongoing, unable to produce guidance as corporate policy is currently under review. It will be more efficient to monitor data from fleet telematics system when policy is finalised	Commenced
4.9		Introduction of telematics on commercial fleet	Install telematics on commercial fleet	Telematics installed on vehicles. Awaiting finalised telematics policy	Commenced
4.10		Smarter Driver Training for drivers of all Southwark fleets	Introduce Smarter Driver training requirement for all current fleet drivers	356 staff members throughout the organisation completed Safer Urban/Smarter Driving course in 2017/18	Target met
4.11		Smarter Driver Training for drivers of all Southwark fleets	Introduce Smarter Driver training requirement for all new fleet drivers	To implement with HR engagement	Target not met
4.12	Travel planning	Maintain an up to date Council Travel Plan consistent with the aims of the air quality action plan	Undertake survey of staff travel arrangements	Ongoing. Staff travel plan delivery and steering group is in place with scope and governance agreed. Effective methods of monitoring and surveying staff travel and travel needs are being developed	Commenced
4.13			Review the Authority's Travel Plan	Ongoing. Staff travel plan delivery and steering group is in place with scope and governance agreed. Effective methods of monitoring and surveying staff travel and travel needs are being developed.	Commenced
4.14	Reducing emissions from Taxis & Private Hire Vehicles	Smarter Driver Training for drivers of all taxis and private hire vehicles	Ask the GLA & TfL to introduce a requirement that all PCO licences include a Smarter Driver training element in line with JSNA recommendation to maintain our multi-agency approach to air quality	This was included in the Authority's response to TfL's consultation on taxis and PHV's	Target met
4.15		Support the London Mayor's requirement that all newly licenced taxis be zero emission capable from 2018 in	Support TfL in the identification and installation of EV charging points in line with JSNA recommendations	11 Fast chargers for taxis have been installed in the borough and further improvements are planned and being	Target met

No.	Measure	Action	Progress	Further information
		line with JSNA recommendations		installed – action ongoing
4.16	Reducing vehicle emissions	Reduce emissions from buses in the borough in line with JSNA recommendations	Work with TfL & GLA to deliver low emission bus zones in Southwark in line with JSNA recommendations	TfL to implement Low Emission bus corridor in the borough in 2019/20. Action ongoing
4.17		Work with TfL and other London Boroughs to extend the Ultra-Low Emission Zone (ULEZ) to the South Circular initially, with a long term option to extend to the M25 in line with JSNA recommendations	Respond to all consultations and via any relevant forums on the ULEZ recommending the ULEZ be to the South Circular initially with a long term option to extend to the M25	All relevant consultations responded to, will continue to work with TfL and other Boroughs to extend the ULEZ to the M25 when the opportunity arises. Action ongoing
4.18		Reduce fine particle emissions from tyre, brake and clutch components in line with JSNA recommendations	Engage with appropriate researchers and industries to increase research to reduce fine particle emissions from tyre, brake and clutch components in line with JSNA recommendations	Research conducted which concluded this measure will not be effective at reducing fine particles
4.19		Vehicle idling awareness	Run public awareness campaign	Worked on a cross borough project with 14 others. Carried out 4 vehicle idling awareness events. The report is at https://www.southwark.gov.uk/assets/attach/9824/Idling-Action-Phase-3-Final-Report-final.pdf Introduced PCN enforcement for idling vehicles in the Borough in February 2018

No.	Measure		Action	Progress	Further information
4.20	Emissions from vehicles	Enforcement of the provisions of the Road Traffic Act	Train all JET officers, & Bankside Wardens in Road Traffic Act vehicle idling enforcement in line with JSNA recommendation to maintain our multi-agency approach to air quality	Training has been undertaken, but due to the requirements of traffic legislation only Civil Enforcement Officers can issue PCN's. The JET Officers and Bankside Wardens continue to give advice to idling drivers	Action complete
4.21		Enforcement of the provisions of the Road Traffic Act	Explore the inclusion of vehicle idling enforcement into the current Parking Enforcement Contract	Vehicle idling enforcement is now in the Parking Enforcement Contract and went live in February 2018	Action complete
4.22		Enforcement of the provisions of the Road Traffic Act	Authorise the Civil Enforcement Officers to issue PCN for vehicle idling offences in line with JSNA recommendation to maintain our multi-agency approach to air quality	The Authority is enforcing vehicle idling through a Traffic Management Order. Only Civil Enforcement Officers are authorised to issue Penalty Charge Notices	Action complete
4.23		Variable vehicle parking charges to promote use of less polluting vehicles	Review the charges for on-street parking & permits	Variable parking charges for parking permits in place. For hybrid and electric vehicles the charge is £31.25/yr. instead of £125/yr. Variable charging for vehicle reg. ID payment will go live in 2019. Have a programme to update all on street parking meters to cashless/veh.reg. ID	Target met
4.24			Review the charges for Housing Estate parking permits	No progress reported	Target not met
4.25		Promote the reduction of total emissions to atmosphere	Public information on alternative fuels for fleets/cars	Information is available on website. Will publicise widely once fuel related parking charges are fully defined and approved	Commenced
4.26	Air quality around schools	Reduce parent & carer parking close to primary schools and nurseries	Pilot School Streets at 5 primary schools or nurseries (by 2022)	A shortlist of schools has been produced based on initial criteria to look at engagement in active travel, road safety and parental driving rates	Action complete
4.27				3 have been implemented with 4 more to be implemented 19/20. Pilot them for 6 months before making any installation permanent	Target met – see revised target on page 49

No.	Measure		Action	Progress	Further information
4.28	Air quality around schools	GLA Air Quality Audits for primary school/s	Air Quality Audit/s facilitated	2 primary schools and 3 nurseries have had air quality audits and been allocated grant money towards the implementation of recommendations. The Authority has identified funds and prepared a tender to appoint a contractor to audit all Southwark maintained schools in locations where air quality limits are being exceeded (from the GLA list). As part of that contract we will offer non-Southwark maintained schools the choice to participate, at the same unit cost per audit	Target met and exceeded
4.29			Identify funding to implement the Air Quality Audit recommendations	2 primary schools are implementing the school-based audit recommendations using grant money from the GLA and Southwark. The implementation of the other recommendations will be within the scope and remit of a proposed 'steering group for air quality' and will be funded by CGS grants and capital programmes	Target met – see revised measure on page 49
4.30	Reduce private vehicles in the Borough	Promote the use of shared mobility in Southwark	Continue to promote & encourage shared mobility systems	Expanded offer of car clubs with further providers and models to improve take up of car clubs. Ongoing action to secure planning conditions at suitable developments to require provision of car club membership – ongoing	Target met – see revised measure on page 49

No.	Measure	Action	Progress	Further information
5.1	Reduction of carbon emissions			
		Achieve minimum 35% regulated carbon emissions reduction on Part L of 2013 Building Regulations on all new major developments in line with JSNA action to continue to develop and adopt robust planning policies that require high standards from new development proposals, particularly in identified areas such as Opportunity Areas or Air Quality Focus Areas	100% achieved	Target met
5.2		Any of the 35% minimum CO ₂ reduction not achieved on-site to be secured through S106 for the "Green Fund" (carbon off-setting projects) for the equivalent remaining regulated carbon emission savings in line with JSNA action to Continue to develop and adopt robust planning policies that require high standards from new development proposals, particularly in identified areas such as Opportunity Areas or Air Quality Focus Areas	88% achieved (7 out of 8 applications), the one instance which did not achieve policy compliance was for a development in a long run of historic railway arches and justified on feasibility grounds	Target met
		Require developers to contribute to reducing atmospheric emissions in line with JSNA recommendations to build on existing Council work to further address air quality locally		
5.3		New homes on all major developments to be zero carbon as per London Plan policy 5.2, achieved either on-site or via financial contributions for off-setting in line with JSNA action to continue to develop and adopt robust planning policies that require high standards from new development proposals, particularly in identified areas such as Opportunity Areas or Air Quality Focus Areas	100% achieved (33 out of 33 eligible applications)	Target met
5.4		All major developments to achieve Air Quality Neutral Standards onsite in line with JSNA action to continue to develop and adopt robust planning policies that require high standards from new development proposals, particularly in identified areas such as Opportunity Areas or Air Quality Focus Areas	63% (33 out of 52 applications) of developments were confirmed as meeting air quality neutral standards. Need to improve reporting consistency to clarify if issue is with reporting methodology/quality or whether policy standards are not being required by planning services in all relevant	Target not met

No.	Measure		Action	Progress	Further information
				applications	
5.5		Require developers to contribute to reducing atmospheric emissions in line with JSNA recommendations to build on existing Council work to further address air quality locally	Where Air Quality Neutral standards are not achieved on-site, off-setting funds secured through section 106 to be used to ensure development meets the air quality neutral standard equivalent	Ongoing. Target was developed and adopted on understanding of development of an offsetting policy in the New Southwark Plan. Development and adoption of NSP air quality offset policy is still in progress so this aspirational policy requirement is not yet being formally applied to planning applications	Commenced
5.6			Commit and spend all off-setting funds on carbon off-setting projects	Ongoing – see above	Commenced
5.7	Improve the energy efficiency in Southwark homes	Promote reduced energy consumption and bills	Promote low cost energy efficiency measures	Heat meters being installed as part of any new development where district heating is provided. Smart meters continue to be rolled out via energy providers. Information and advice on council website	Target met
5.8		Maximise funding streams available to improve energy efficiency	Bid for funding where it will be beneficial to energy efficiency and fit in with the overall council objectives	Ongoing. See 5.10 below – This will be part of the work of the District Heating Delivery Board	Commenced
5.9		Install ultra-low NO _x boilers in council & TMO housing	Install ultra-low NO ₂ boilers when boilers are replaced in council and TMO housing	1,693 further ultra-low NO ₂ boilers installed during 2018	Target met
5.10	Improve energy efficiency in Southwark homes	Develop & implement a strategy for communal boiler upgrades and renewals within council housing	Develop & implement the strategy for communal boiler upgrades and renewals	Ongoing. This is a progression of the work to deliver a district heating strategy that provides modern district heating to our residents and levers in the investment required to deliver it. The Arup heat mapping study is complete, LBS finalised 5 sites for master planning. The final report has been received and a District Heating Delivery Board has been convened	Commenced
5.11		Monitor the effect of energy efficiency improvements in the	Implement monitoring regime for improvement programme in the social housing planned works programme	The Energy module is now running in Apex providing a SAP score for properties and updating in line with	Target met

No.	Measure	Action	Progress	Further information
		Council's social housing planned renewal programme		Major Works completions. The average SAP for Southwark is 65.6 (D) based on 9013 scores across the stock profile. 90% of the properties are Band C or D
5.12	Promote the use of renewable energy and minimise the energy demand of Southwark estate	Reorganise the use of space in operational council buildings to reduce overall energy demand	Improve the use of Council buildings making them more sustainable, flexible, cost & space efficient	CFM are working to provide buildings that are modern bright and safe for staff. The Tooley Street Building has trialled a range of new furniture and working practices (scrum rooms/ flexible meeting spaces/etc.) that will be rolled out across the council estate
5.13		Be aware of the energy used and generated by the Authority's operational buildings	Publish on-line information of the energy used and any generated by the Authority's operational buildings	The Council's emissions from its operational stock are recorded by our annual Carbon Reduction Commitment return. The aggregated CRC returns data is published in an annual report available on Government website https://www.gov.uk/guidance/crc-energy-efficiency-scheme-annual-report-publication
5.14	Promote the use of renewable energy and minimise the energy demand of Southwark Housing	Explore the opportunity to install renewable energy technologies in Southwark housing	Through extra funding, explore the opportunities for installing renewable energy technologies, energy efficiency measures and insulation retrofitting	Ongoing. Part of 5.10 above – still in progress – programme being developed but not yet implemented
5.15			Explore options to set up community energy schemes on estates	
5.16			Explore use of low energy alternatives and motion sensor systems to major repairs to lighting systems on estates	Investment programme does not cover estate lighting, but through term contracts defective lamps are replaced with LED types. Four Squares Estate has had PV installed on rooftops and some new builds also have PV
5.17	Ensure new developments minimise their impact on local air quality and climate change	Develop robust air quality planning policies	Develop robust air quality planning policies in the New Southwark Plan, Old Kent Road Opportunity Area Plan & any new and revised Neighbourhood Plans in line with JSNA recommendations	An Air Quality Study for the Old Kent Road Opportunity Area is being commissioned. The aim is to provide modelling of air quality impacts, and suggest possible design and planning mitigation for the re-development of the

No.	Measure		Action	Progress	Further information
				area	
5.18		Highlight design guidance for best practice in reducing emissions to air	Develop a revised Sustainable Design and Construction SPD that includes up to date guidance on improving air quality	SPDs will be reviewed once the New Southwark Plan has been adopted in early 2020.	Target not met
5.19	Increase number of Southwark Council Homes using renewable energy	Increase no. of Southwark Council Homes using renewable energy from SELCHP	Connect more dwellings to SELCHP	No dwellings added in 2018. Connecting more dwellings will be part of the work for 5.10 above. 30 homes to be added in 2019, also currently exploring extending SELCHP links to Canada Water, Osprey Estate, the Old Kent Road Opportunity Area and Peckham	Target not met

No.	Measure		Action	Progress	Further information
6.1	Smoke Control Zone	Enforcement of the Clean Air Acts	Ensure that all retail premises selling wood and coal are aware that the whole of Southwark is a Smoke Control Area	Ongoing. Business engagement planned for late Summer & Autumn 2019 to be seasonally relevant	Commenced
6.2		Discourage burning of logs and house coal	Undertake a public communication campaign during Autumn 19 to highlight pollution caused by using non-smokeless fuels	Campaign information produced but not yet used as waiting for appropriate season to ensure relevance of messages and maximise benefit	Commenced
6.3	Emissions from industrial premises	Regulation of EPA Part B processes	All IPPC premises in the Borough inspected in accordance with their risk assessment	100% achieved	Target met
6.4	Green infrastructure	Increase the amount of green infrastructure	Explore all opportunities to install green infrastructure	Green walls have been installed by Better Bankside BID. 2 primary schools have installed green boundary fences using CGS bids and self-raised funds	Target met
6.5	Healthy Streets	Assess the Borough's Highways against the criteria in TfL's Healthy Streets approach	Highway projects to be assessed against the TfL's Healthy Streets criteria	Included in Highways working procedures	Target met
6.6	Emissions from development	Emissions from construction work minimised	Ensure that all strategic and major developments are aware of the Authority's Technical Guidance for Demolition & Construction	The guidance standards are included in all relevant planning consultation comments and are promoted at the constructors' forum. The technical guidance is on the website at https://www.southwark.gov.uk/environmental-protection/planning-and-the-environment	Target met
6.7	Emissions from construction equipment	Ensure all Non-Road Mobile Machinery (NRMM) complies with the GLA SPG construction criteria	Ensure that all strategic & major construction sites are on the on-line NRMM register	30 out of 32 have registered	Target not met – but very nearly
6.8			All strategic and major construction sites inspected for NRMM compliance	32 sites inspected	Target met

No.	Measure		Action	Progress	Further information
6.9	Emissions from developments and premises	Enforcement of the provisions of the Environmental Protection and Clean Air Acts	Apply the provisions of Clean Air Act 1993 S.14 (chimney height) to appropriate developments	No applications made in 2018	Target met
6.10	Emissions from developments and premises	Enforcement of the provisions of the Environmental Protection and Clean Air Acts	Investigate all reports of bonfires & open burning	100% of reports investigated	Target met
6.11	Emissions from waste management process	Enforcement of the Permit conditions at waste management sites in the Borough	Liaise with Environment Agency to ensure appropriate controls are being used to minimise and mitigate the creation of dust and fume at waste management sites in line with JSNA recommendation to maintain our multi-agency approach to air quality	Liaison with EA undertaken	Target met

No.	Measure		Action	Progress	Further information
7.1	GLA Air Quality Focus Areas	Target the improvement of air quality in the GLA Air Quality Focus Areas	Ensure that local air quality is monitored in the GLA Air Quality Focus Areas	Diffusion tube survey expanded to include all GLA Air Quality Focus Areas	Action complete
7.2			Implement an air quality improvement project in each GLA Air Quality Focus Area. Ensure they are linked to relevant regeneration plans and build on any existing relevant initiatives to encourage modal shift towards public transport, cycling & walking	Old Kent Road – Air quality modelling project devised for the Opportunity Area	Target met
7.3				Elephant & Castle – Ongoing. Explored increasing green infrastructure in the public realm, evaluation of City Trees revealed they are not cost-effective. MAQF particulates and road cleaning project planned for 2019/21	Commenced
7.4				Borough High Street – Liaising with partners to provide boiler replacement information. Green art work installed in Tabard Street. Green wall being installed on the Guy's Hospital campus. Planted ivy benches planned for Borough & Bankside ward in 2019	Target met
7.5				Lower Road – Ongoing. No useful progress with complimenting the Lewisham Construction Logistics Project. Now in discussion with TfL to rework/remove the Lower Road gyratory scheme to improve traffic flow	Commenced
7.6				Peckham Road – Ongoing. Low emission buses route through Peckham Town Centre in pre-implementation phase	Commenced
7.7				Tower Bridge – Applied for MAQF funding for Tower Bridge lift anti-idling signage but was unsuccessful. Plans for this Focus Area now under re-consideration	Target not met
7.8				Walworth to Camberwell Green – Ongoing. Walworth/Camberwell area plan being devised by Regeneration Team	Commenced

No.	Measure		Action	Progress	Further information
7.9				Walworth LEN being developed by Highways (and MAQF grant funding recently secured) May include geo-fencing of hybrid buses	Commenced – see revised action at 7.18 on page 54
7.10			Ensure that the implemented air quality projects in the GLA Air Quality Focus Areas are assessed	All previous MAQF projects assessed. No project currently at assessment stage	Target met
7.11			Ensure that local air quality projects in the GLA Air Quality Focus Areas are comprehensively evaluated	All previous MAQF/AQ projects have evaluation reports. No ongoing projects currently at evaluation stage	Target met
7.12			Ensure that air quality projects implemented in the GLA Air Quality Focus Areas are regularly reviewed	No ongoing projects currently at review stage	Target met
7.13	Cleaner Air Borough	Ensure full consideration of GLA air quality planning policy changes	Take all actions required by GLA to retain Cleaner Air Borough status	CAB retained in 2018	Target met
7.14	The extension of the ULEZ	Council policy is to support the extension of ULEZ to the south circular and in future for it to include the whole borough or be extended to the M25	Respond to GLA consultations expressing the Southwark policy stance	100% of consultations responded to. Will take all future opportunities to request TfL consider extension of the ULEZ boundary to include the whole borough or be extended to the M25 in future	Target met
7.15	Support GLA planning policy with regard to air quality	Ensure full consideration of GLA planning policy changes that relate to air quality	Ensure GLA air quality policy is considered in all planning decisions	National & regional planning policy is considered in every planning decision in Southwark. Revision of local Planning policy currently in process	Target met
7.16	Mayor's Air Quality Fund	Identify projects suitable for Mayor's Air Quality Fund	Review the Mayor's Air Quality Fund funding guidance & apply for funds where possible	Applied for funding for 4 MAQF projects (was successful with 3 of the bids also to take part in regional idling project)	Target met

No.	Measure		Action	Progress	Further information
7.17	Clean Air for Londoners	Work, with the GLA, TfL and other organisations, towards meeting the national air quality objectives in line with JSNA recommendation to advocate for wider regional action on air quality	Review all external opportunities to participate in air quality improvement projects and respond to all air quality consultations	Achieved and will remain on-going	Target met

No.	Measure		Action	Progress	Further information
8.1	Joint Strategic Needs Assessment	The JSNA includes air quality and has up to date information on its health impacts	Produce an air quality section for the JSNA	Achieved	Action complete – see further measure on page 50
8.2			Review the air quality section of the JSNA annually	The recommendations were reviewed in September 2018 and early 2019. An evaluation of the JSNA has been undertaken in 2019. Progress against the recommendations will continue. Future JSNA topics that feed into air quality will be consider AQAP where relevant e.g. an Asthma JSNA	Target met – see revised measure on page 51
8.3	Air Quality & Public Health	Retain local air quality as a public health priority	Provide up to date information in connection with air quality	Local AQ is still a local PH priority. Several briefings on AQ prepared for the Cabinet lead member. Air Quality Webpages reviewed and updated annually. All formal AQ reports go to Health & Well-being Board for information following submission	Target met
8.4	Embed Air Quality Policy	Ensure that local air quality is considered within all relevant complementary council policy developments	All relevant new policies to incorporate air quality improvement objectives	List of (50) relevant Council policies produced. Local air quality and climate change will be considered on their revision through consultation. Already included AQ concerns in Highways strategy, Movement Plan & New Southwark Pan	Commenced
8.5	Air Quality Alerts	Provide a poor air quality alert to Southwark Council staff caring for health vulnerable persons with particular emphasis on nurseries, primary schools and care homes	Devise a Poor Air Quality Alert internal cascade for staff working in nurseries, primary schools and care homes in line with JSNA recommendation and action	Poor Air Quality Alert internal cascade (June 2017) still in use. The internal contact cascade list is reviewed regularly.	Action complete
			Continue to develop and deliver the air quality cascade	AQ cascade to be reviewed in 2019	Target met
			Maintain and strengthen the poor air quality alert cascade	AQ cascade to be reviewed in 2019	Target met

2.2 Measures included in the Air Quality Action Plan following the 2017 Annual Status Report

Action Number	Theme / Aim	Objective	Action	Target	Further information
1.12	Corporate responsibility	Reduce the council's pension investment in fossil fuels	Southwark is cutting investment in fossil fuels and have agreed to place part of the pension fund into the "Blackrock Low Carbon Target Equity Fund"	Place part of our pension fund into the "Blackrock Low Carbon Target Equity Fund".	Action complete – further opportunities to work towards full divestment from fossil fuels are being pursued
1.13	Control of shipping emissions and use of shipping to mitigate land based transport emissions	Reduce emissions from shipping using the River Thames	Support the Port of London Authority in delivering its air quality action plan in relation to Southwark	Produce guidance for planners and developers, in consultation with the PLA, to encourage greater use of the river and to ensure best practice to reduce emission from river traffic	Target not met
1.14				Lobby the PLA to undertake a feasibility study into the potential of installing shore-side electrical power connections for vessels	Target not met
4.31	Air quality around schools	Reduce through traffic, and/or parking, including parent & carer parking close to primary schools and nurseries	Implement School Streets at 5 Southwark supported primary schools or nurseries	3 have been implemented in 2018 with another 4 due to be implemented 2019/20. Almost all primary schools have A boards to protect the zig zags from parental parking	Commenced
4.32		GLA Air Quality Audits for primary school/s	Encourage schools to implement the GLA Air Quality Audit recommendations and inform schools about funding sources for implementation	Assistance provided to schools by supporting applications for GLA grants, CGS grants and capital bid funds, and by giving guidance on how to obtain any necessary permissions. Schools with AQ Audits have received a total of £10,000 in 'Starter Grants' from both the GLA and Southwark	Target met
4.33		Southwark Air Quality Audits for primary school/s	Facilitate Air Quality Audits at 33 schools as listed by the GLA	Funding identified. Tender being prepared to audit all community schools in the borough and all schools in the OKR Opportunity Area. Delivery of this measure expected by August 2020	Commenced
4.34			Provide access to AQ Audits to all non-community schools in the Borough that are on the GLA list	Access to Air Quality Audit/s at unit cost to the non-maintained schools included in the tender. Delivery expected by April 2020.	Commenced

Action Number	Theme / Aim	Objective	Action	Target	Further information
4.35			Identify funding to implement the Southwark Air Quality Audit recommendations	<p>Identified funding & grants for implementation of recommendations of Schools Air Quality Audits</p> <p>Identified funding to give Southwark schools a grant to get them started with delivering their recommendations</p> <p>As part of the schools audit contract a further report from the delivery consultants will prioritise TfL and Southwark Council actions from all the school audit recommendations, to give both Southwark and TfL prioritised recommendations to feed into capital programmes for delivery</p>	Target met
4.36		Promote and share actions to improve air quality for the school community	Promote and share actions that will improve air quality for the school community through Southwark and GLA Air Quality for Schools Networks	Hold regular Southwark Schools Air Quality Network meetings during the year to ensure air quality improvement ideas and actions are shared. Attend the GLA schools network meetings	Target met
4.37	Reduce private vehicles in the Borough	Promote the use of shared mobility in Southwark	Continue to promote & encourage shared mobility systems	Publicise, monitor and report on the new infrastructure and usage of mobility options	Target met
5.20	Area and Heat Power Network	Provide an Area Heat and Power Scheme in the Borough	Explore how Southwark can replicate the "Croydon Central Area Heat and Power Scheme" within the Borough's Opportunity Areas	District Heating Delivery Board has been convened. Its task is to produce a feasibility report on creating "Area Heat and Power Schemes" in the Borough	Commenced
5.21	Zero Emission Network	Provide a Zero Emission Network in the Borough	Explore how Southwark can develop a Zero Emission Network	Produce feasibility report on creating a Zero Emission Network in the Borough	Target not met
8.6	Joint Strategic Needs Assessment	The JSNA includes air quality and up to date information on the health impacts of poor air quality	Monitor the implementation of the recommendations in the air quality JSNA	Meet with PH 3x a year to ensure the Air Quality JSNA air quality recommendations are implemented	Target met

Action Number	Theme / Aim	Objective	Action	Target	Further information
8.7			Review the air quality section of the JSNA bi-annually	JSNA air quality section is reviewed every 6 months	Target met
8.8	Air Quality Alerts	Provide poor air quality alert information to Southwark Council staff caring for health vulnerable persons with particular emphasis on nurseries, primary schools and care homes	Instigate a poor air quality alert cascade is in line with the GLA Air quality alert system	Implement by July 2018	Action complete
8.9		Each organisation receiving GLA AQ alerts should provide feedback to the GLA	Encourage the GLA to request feedback	Letter sent or meeting held to discuss with GLA lead	Target not met
8.10	Air Quality Monitoring Data	Find out whether PHE are aggregating and analysing air quality monitoring data and local hospital data for impacts for respiratory and cardiovascular disease	Review the progress of recommendation 12 of the Chief Medical Officers report 2017 a) Southwark Clinical Commissioning Group (CCG) Groups should analyse local air quality monitoring data for breaches of air pollution standards, and publish these alongside the local hospital data for impacts on admissions for respiratory and cardiovascular disease and b) Public Health England should aggregate and analyse progress annually for a national public report to NHS England	Public Health and Environmental Protection Teams to explore with PHE England how recommendation 12 of the Chief Medical Officers report 2017 can be implemented in the Borough. An approach has been made but PHE England has not started the project as yet	Commenced

2.2 New measures proposed for the Air Quality Action Plan from the 2018 Annual Status Report

Action Number	Theme / Aim	Objective	Action	Progress	Further information
1.15	Environment Bill	Support the GLA, UK100 and London Councils	Lobby for strong commitments to air quality improvements and a robust regulatory regime in the forthcoming Environment Bill	Commenced. Responded to preliminary consultations, awaiting formal consultations	
1.16	Clean Air Bill	Support the GLA, UK100 and London Councils	Lobby for strong commitments to air quality improvements and a robust regulatory regime in the forthcoming Clean Air Bill	Responded to preliminary consultations regarding potential content, awaiting formal consultations	
1.17	Air quality standards	Borough commitment to WHO targets	Produce a report to lead member regarding adoption of WHO targets for PM _{2.5} by 2030	None	
1.18	Improved air quality	Biodiversity 'Net Gain' measure	Explore how implementation of 'Net Gain for Biodiversity' methodologies, in GLA Environment Strategy, can support air quality improvement	None	
1.19	Air Quality management framework	Air quality steering group	Set up a cross service air quality steering group to manage and oversee delivery of the AQAP actions and AQ improvement projects	Proposals drafted – awaiting reporting date for approval	
3.16	Reduce traffic emissions	Reduce Business use of vehicles	Work with BIDs to develop improved measure of business sector transport	None	
3.17 (revised 3.6)	Encourage employees of businesses in Southwark to commute by foot or cycle	Work with BIDs to encourage employees of businesses in Southwark walk or cycle through the promotion of business specific travel plans	No business specific travel plans were produced in 2018	Commenced	London Bridge Bid prepared a cycling strategy promoting the business use of cargo bikes

Action Number	Theme / Aim	Objective	Action	Progress	Further information
4.38	Reduce traffic emissions	Movement Plan impact assessment	Monitor whether implementation of the Movement Plan achieves the reductions in NO _x , PM ₁₀ and PM _{2.5} sought by the Mayor of London Transport Strategy outcome 4	None	
4.39	Emissions from vehicles	Reduce re-suspension of road dust	Explore possibilities for more extensive wet road cleaning techniques	Successfully applied for funding from MAQF for a joint bid with Lambeth to test the effectiveness of different street cleaning regimes to reduce road source particulates. (was successful, project delivery just commencing)	Target met
4.40	Reduce emissions & minimise exposure	School air quality audits	Ensure school air quality audit reports are received within performance management targets specified in contract	None	
4.41	Reduce emissions & minimise exposure	School air quality audits	Ensure the overarching priority recommendations report is received within performance management targets specified in contract	None	
4.42	Reduce emissions from Rotherhithe Tunnel	Reduce pollutant levels at tunnel vent shafts and portals	Work with TfL's Tunnel Team and Tower Hamlets officers to monitor air quality in the tunnel and around the tunnel vents and portals	Meet with TH and TfL Tunnel Team regularly. Air quality is monitored at all tunnel vents, portals and within the tunnel by either TfL, Southwark or Tower Hamlets	Target met
4.43	Reduce emissions from Rotherhithe Tunnel	Reduce pollutant levels at tunnel vent shaft outlets and portals	Work with TfL's Tunnel Team and Tower Hamlets officers to identify improvements to the tunnel current ventilation system	TfL have serviced and rebalanced the current ventilation system and operate it to minimise fume concentrations. TfL plan to restrict access for more vehicle classes to remove polluting vehicles, reduce traffic levels and minimise the fire hazard	Target met
4.44	Reduce emissions from Rotherhithe Tunnel	Reduce pollutant levels at tunnel vent shaft outlets and portals	Lobby TfL to fund and develop a plan to refit of the tunnel ventilation system	TfL have identified funds to refit the tunnel and it's ventilation system in the medium term	Target met

Action Number	Theme / Aim	Objective	Action	Progress	Further information
5.22	Reduction of carbon emissions	Revised measure for Air Quality Neutral	Work with planning services to better define and measure progress against target	None – awaiting definitions of Air Quality Neutral & Air Quality Positive before developing targets	
6.12	Improved air quality	PM _{2.5} from catering sources	Revise the technical air quality guidance for planning applications	None	
6.13	Improved air quality	PM _{2.5} from catering sources	Apply revised technical guidance standards with regards to complaints regarding emission from commercial kitchens	None	
6.14	Improved air quality	PM _{2.5} from catering sources	Ensure all planning applications for catering premises include adequate provision for exhaust gas filtration and/or treatment	None	
7.18 (revised 7.9)	GLA Air Quality Focus Areas	Target the improvement of air quality in the GLA Air Quality Focus Areas	Implement an air quality improvement project in each GLA Air Quality Focus Area. Ensure they are linked to relevant regeneration plans and build on any existing relevant initiatives to encourage modal shift towards public transport, cycling & walking. Deliver Walworth LEN (MAQF grant funding recently secured)	Commenced	

3. Planning Update and Other New Sources of Emissions

Table J **Planning requirements met by planning applications in Southwark in 2018**

Condition	Number
Number of planning applications reviewed for air quality impact	73
Number of planning applications required to monitor for construction dust	91
Number of CHPs/Biomass boilers refused on air quality grounds	13
Number of CHPs/Biomass boilers subject to GLA emissions limits and/or other restrictions to reduce emissions	23
Number of AQ Neutral building and/or transport assessments undertaken	52
Number of AQ Neutral building and/or transport assessments not meeting the benchmark and so required to include additional mitigation	19
Number of planning applications with S106 agreements including other requirements to improve air quality	1
Number of planning applications with CIL payments that include a contribution to improve air quality	1
NRMM: Central Activity Zone and Canary Wharf	
Number of conditions related to NRMM included	0
Number of developments registered and compliant	6
Please include confirmation that you have checked that the development has been registered at www.nrmm.london and that all NRMM used on-site is compliant with Stage IIIB of the Directive and/or exemptions to the policy.	Yes
NRMM: Greater London (excluding Central Activity Zone and Canary Wharf)	
Number of conditions related to NRMM included.	0
Number of developments registered and compliant.	14
Please include confirmation that you have checked that the development has been registered at www.nrmm.london and that all NRMM used on-site is compliant with Stage IIIA of the Directive and/or exemptions to the policy.	Yes

This table reports the best data currently available. Data discrepancies identified will be reviewed and improved for future reports as it is known that recommendations to include NRMM in planning conditions have been included in many planning consultation responses. Several sites have approved Construction Management Plans that contain undertakings/information regarding NRMM and some sites have not commenced site operations. During 2018 the Authority contracted Merton to review and assess NRMM compliance at construction sites in Southwark.

3.1 Other new or significantly changed sources

There were no new or significantly changed industrial or other sources, within the borough in 2018.

Construction of the energy plant at the Elephant Park development is complete but the plant has not yet been commissioned. This plant will consist of 24 boilers and 2 CHPs.

Another large energy plant has been proposed as part of the redevelopment of the London College of Communication but this development is still at the planning stage.

There have been no significant changes to the Borough's road layout in 2018.

Appendix A Details of Monitoring Sites QA/QC

A.1 Automatic Monitoring Sites

The Authority is a member of the London Air Quality Network. All monitoring data is ratified in accordance with Kings College London QA/QC procedures for the network.

The Authority has out-sourced the Local Site Operator role to King's College London. They are contracted to calibrate the all the pollutant monitors fortnightly.

A.2 Diffusion Tube Quality Assurance / Quality Control

Diffusion Tube Bias Adjustment Factors

The Authority incorporates two local co-location diffusion tube studies, by exposing triplicate tubes at the two automatic air quality monitoring stations at the Elephant & Castle (Urban Background) and on the Old Kent Road (Roadside). The Authority then uses the Local Air Quality Management Helpdesk spreadsheets to calculate the bias factors, which are included in the results presented in section 1.2 of this report.

QA/QC of Diffusion Tube Monitoring

The Authority has appointed Gradko International Ltd. to provide and analyse the Nitrogen Dioxide diffusion tubes. The laboratory supplies the Authority 20% TEA in water diffusion tubes. The laboratory has confirmed that it follows the procedures set out in the Practical Guidance. On the next page are the results for Gradko International from the WASP proficiency testing scheme (Table K) and the new Air Proficiency Testing (AIR PT) scheme (Table L). The Didcot Laboratory of Environmental Services Group and Gradko International submit two sets of results, whereas the other laboratories in the scheme only submit one set of results.

The AIR PT scheme has up 38 regular different samples and 3 different trial standards for the analytic laboratories to analyse. LGC Ltd has a programme to send out different combinations of the 41 samples in six rounds throughout the year. (The trial samples were available for one round only.) Sample 11 contains 4 dynamically loaded Palmes type diffusion tubes.

The summary of the diffusion tube precision from the national database for Gradko International is detailed on page 60 in Table M

Table K Performance of Gradko Laboratory using the Rolling Performance Scheme for WASP Rounds 79 – 109⁷

	Rounds	Performance on basis of RPI, OLD CRITERIA, best 4 out of the 5 rounds	Performance on basis of RPI, NEW CRITERIA, best 4 out of the 5 rounds
April 2007 – April 2008	97 - 101	Good	Good
July 2007 – July 2008	98 - 102	Good	Good
October 2007 – October	99 - 103	Good	Good
January 2008 – January	100 - 104	Good	Good
April 2008 – April 2009	101 - 105	Good	Good
July 2008 – July 2009	102 - 106	Good	Good
October 2008 – October	103 - 107	Good	Good
January 2009 – January	104 - 108	Good	Good
April 2009 – April 2010	105 - 109	Good	Good

⁷ Scheme in operation until April 2010

Table L Performance of Gradko Laboratory using the New Performance Scheme for WASP Rounds 105 – 124⁸ and AIR NO₂ PT rounds AR001, to AR029.

WASP Round	WASP R105	WASP R106	WASP R107	WASP R108	WASP R109	WASP R110	WASP R111	WASP R112	WASP R113	WASP R114	WASP R115	WASP R116
Round conducted in the period	Apr. – Jun. 2009	Jul. – Sept. 2009	Oct. – Dec. 2009	Jan. – Mar. 2010	Apr – Jun 2010	Jul – Sept. 2010	Oct. – Dec. 2010	Jan. – Mar. 2011	Apr – Jun 2011	Jul. – Sept. 2011	Oct. – Dec. 2011	Jan. – Mar. 2012
Gradko International	100%	100%	100%	100%	87.5%	100%	100%	100%	100%	100%	37.5%	100%
WASP Round	WASP R117	WASP R118	WASP R119	WASP R120	WASP R121	WASP R122	WASP R123	WASP R124	AIR PT AR001	AIR PT AR003	AIR PT AR004	AIR PT AR006
Round conducted in the period	Apr. – Jun. 2012	Jul. – Sept. 2012	Oct. – Dec. 2012	Jan. – Mar. 2013	Apr. – Jun. 2013	Jul. – Sept. 2013	Oct. – Dec. 2013	Jan. – Mar. 2014	Apr. – May 2014	Jul – Aug. 2014	Oct. – Nov. 2014	Jan. – Feb. 2015
Gradko International	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
WASP Round	AIR PT AR007	AIR PT AR009	AIR PT AR010	AIR PT AR012	AIR PT AR013	AIR PT AR015	AIR PT AR016	AIR PT AR018	AIR PT AR21	AIR PT AR022	AIR PT AR024	AIR PT AR025
Round conducted in the period	April – May 2015	Jul – Aug 2015	Oct – Nov 2015	Jan – Feb 2016	Apr – May 2016	Jul – Aug 2016	Sept – Oct 2016	Jan – Feb 2017	Apr – May 2017	Sept – Oct 2017	Jan – Feb 2018	Apr – May 2018
Gradko International	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
WASP Round	AIR PT AR027	AIR PT AR028	AIR PT AR029									
Round conducted in the period	Jul – Aug 2018	Oct – Nov 2018	Jan – Feb 2019									
Gradko International	100%	100%	75%									

⁸ WASP Scheme in operation from April 2010 with backdated results)

Table M Gradko Laboratory summary performance April 2009 – March 2019

Summary of Precision Results for the National Nitrogen Dioxide Diffusion Tube Collocation Studies, for Gradko Laboratory (20% TEA in Water)																					
2008	G	2009	G	2010	G	2011	G	2012	G	2013	G	2014	G	2015	G	2016	G	2017	G	2018	G
2008	P	2009	G	2010	G	2011	G	2012	G	2013	G	2014	G	2015	G	2016	G	2017	G	2018	G
2008	G	2009	G	2010	G	2011	G	2012	G	2013	G	2014	G	2015	G	2016	G	2017	G	2018	G
2008	G	2009	G	2010	G	2011	G	2012	G	2013	G	2014	G	2015	G	2016	G	2017	G	2018	G
2008	G	2009	G	2010	G	2011	G	2012	G	2013	G	2014	G	2015	G	2016	G	2017	G	2018	G
2008	G	2009	G	2010	G	2011	G	2012	G	2013	G	2014	G	2015	G	2016	G	2017	G	2018	G
2008	P	2009	G	2010	G	2011	G	2012	G	2013	G	2014	G	2015	G	2016	G	2017	G	2018	G
2008	G	2009	G	2010	G	2011	G	2012	G	2013	G	2014	G	2015	G	2016	G	2017	G	2018	G
2008	G	2009	P	2010	G	2011	G	2012	G	2013	G	2014	G	2015	G	2016	G	2017	G	2018	G
2008	G	2009	G	2010	G	2011	G	2012	G	2013	G	2014	G	2015	G	2016	G	2017	G	2018	G
2008	G	2009	G	2010	G	2011	G	2012	G	2013	G	2014	G	2015	G	2016	G	2017	G	2018	G
2008	G	2009	G	2010	G	2011	G	2012	G	2013	G	2014	G	2015	G	2016	G	2017	G	2018	G
2008	G	2009	G	2010	P	2011	G	2012	G	2013	G	2014	G	2015	G	2016	G	2017	G	2018	G
2008	P	2009	G	2010	G	2011	G	2012	G	2013	G	2014	G	2015	G	2016	G	2017	G	2018	G
2008	G	2009	G	2010	G	2011	G	2012	G	2013	G	2014	G	2015	G	2016	G	2017	G	2018	G
2008	G	2009	P	2010	G	2011	G	2012	G	2013	G	2014	G	2015	G	2016	G	2017	G	2018	G
2008	G	2009	P	2010	G	2011	G	2012	G	2013	G	2014	G	2015	G	2016	G	2017	G	2018	G
2008	G	2009	P	2010	G	2011	G	2012	G	2013	G	2014	G	2015	G	2016	G	2017	G	2018	G
2008	P	2009	G	2010	G	2011	G	2012	G	2013	G	2014	G	2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G	2014	G	2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	P	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2018	G
		2009	G	2010	G	2011	G	2012	G	2013	G			2015	G	2016	G	2017	G	2	

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

Site ID	Valid data capture for monitoring period %	Valid data capture 2018 %	Annual Mean NO ₂												Annual mean – raw data	Am/Pm	Annualisation data
			Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec			
SDT 118	100	33.33									42.98	45.22	45.89	45.63	44.93	0.97323	43.73
SDT 119	100	33.33									29.95	33.99	37.56	31.43	33.23	0.97323	32.34
SDT 120	100	16.67											36.10	35.01	35.56	0.96919	34.36
SDT 121	100	16.67											42.91	39.86	41.39	0.96919	40.11
SDT 122	50	8.33												33.45	33.45	0.99072	33.14
SDT 123	50	8.33											51.48		51.48	0.94857	48.83
SDT 124	50	8.33											30.59		30.59	0.94857	29.02
SDT 125	100	16.67											39.26	36.41	37.84	0.96919	36.67
SDT 126	50	8.33											24.52		24.52	0.94857	36.67
SDT 127	50	16.67											32.86	28.72	30.79	0.96919	29.84
SDT 128	100	16.67											47.90	38.84	43.37	0.96919	42.03
SDT 129	100	16.67											45.79	39.82	42.81	0.96919	41.49
SDT 130	100	16.67											41.19	35.19	38.19	0.96919	37.01
SDT 131	100	16.67											47.00	37.83	42.42	0.96919	41.11
SDT 132	50	8.33												49.25	49.25	0.99072	48.79
SDT 133	100	16.67											61.29	36.21	48.75	0.96919	47.25
SDT 134	100	16.67											45.19	36.56	40.88	0.96919	39.62
SDT 135	100	8.33												55.53	55.53	0.99072	55.01
SDT 136	100	8.33												41.80	41.80	0.99072	41.41
SDT 137	100	8.33												30.84	30.84	0.99072	30.55

Data Adjustment

Table N on page 61 shows the raw data, the annual mean raw data and ratio value (R_A) of the annual mean to the period mean. The methodology used to calculate the ratio value A_M / P_M is found in Box 4.9 of the LLAQM TG (16)⁹. The annual data was calculated from the Old Kent Road automatic monitoring site.

The methodology for calculating the R ratio (annual mean to the Period mean (A_M/P_M)) was applied to each diffusion tube site. The measured period mean concentration was multiplied by the R_a ratio to produce the annualised average. After the annualisation average was obtained the values were then factored using the bias value.


Table O Example of the annualised average of the data in Table N

Start Date	End Date	OKR Continuous Data for the period C1	D1 = SDT 118	C1 when D1 is available
03/01/2018	31/01/2018	34.68	No data	No data
31/01/2018	28/02/2018	37.62	"	"
28/02/2018	28/03/2018	36.07	"	"
28/03/2018	02/05/2018	32.97	"	"
02/05/2018	30/05/2018	34.70	"	"
30/05/2018	04/07/2018	24.21	"	"
04/07/2018	01/08/2018	29.93	"	"
01/08/2018	05/09/2018	27.32	"	"
05/09/2018	03/10/2018	28.59	42.98	28.59
03/10/2018	31/10/2018	35.30	45.22	35.30
31/10/2018	05/12/2018	34.10	45.89	34.10
05/12/2018	09/01/2019	32.65	45.63	32.65
Average		32.34	44.93	32.66

⁹ London Local Air Quality Management Technical Guidance 2016 (LLAQM.TG (16)) accessed at <https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/working-london-boroughs>

Distance Adjustment

The results of the long term diffusion tube monitoring in the borough are shown in Table F. The concentration data for the various years and locations has been calculated using the distance calculator available from the LAQM Support website¹⁰.



BUREAU VERITAS

Enter data into the pink cells

Step 1	How far from the KERB was your measurement made (in metres)?	0.5	metres
Step 2	How far from the KERB is your receptor (in metres)?	2.5	metres
Step 3	What is the local annual mean background NO ₂ concentration (in µg/m ³)?	31.95573	µg/m ³
Step 4	What is your measured annual mean NO ₂ concentration (in µg/m ³)?	58.3	µg/m ³
Result	The predicted annual mean NO ₂ concentration (in µg/m ³) at your receptor	50.8	µg/m ³

¹⁰ <https://laqm.defra.gov.uk/tools-monitoring-data/no2-falloff.html>

Appendix B Full Monthly Diffusion Tube Results for 2018

Table P **NO₂ Diffusion Tube Results**

Site ID	Valid data capture for monitoring period %	Valid data capture 2018 %	Annual Mean NO ₂														Annual mean – raw data	Annual mean – bias adjusted
			Jan	Feb	March	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec				
SDT 1	100.00	100.00	43.80	51.91	77.99	48.32	50.14	41.79	41.50	28.90	39.26	46.10	47.62	40.28	46.47	43.22		
SDT 2	100.00	100.00	43.95	49.10	55.19	47.93	50.94	41.29	43.80	31.85	38.06	48.47	48.57	40.25	44.95	41.80		
SDT 3	100.00	100.00	45.28	52.11	55.52	74.02	46.64	41.12	43.45	32.21	38.59	51.80	43.43	38.05	46.85	43.57		
SDT 4	91.67	91.67	49.78	48.12	58.54	65.07	53.54	49.14	65.47	47.36	49.16		44.90	49.66	52.79	49.09		
SDT 5	91.67	91.67	38.46	38.18	42.62	31.78	28.66	22.66	29.42	26.20	32.03		39.48	34.36	33.08	30.76		
SDT 6	100.00	100.00	59.66	53.36	82.34	47.32	63.26	57.45	63.64	55.86	57.10	60.11	54.53	58.08	59.39	55.23		
SDT 7	100.00	100.00	42.67	40.81	41.72	34.98	50.33	35.62	43.52	40.79	38.44	46.49	41.42	36.24	41.09	38.21		
SDT 8	100.00	100.00	31.02	31.44	32.50	22.90	33.88	21.80	27.70	22.70	27.53	33.05	38.55	34.14	29.77	27.69		
SDT 9	91.67	91.67	54.20	47.72	56.88	38.65	46.87	47.86		45.64	41.36	50.36	53.83	49.64	48.46	45.07		
SDT 10	100.00	100.00	35.22	37.21	33.40	33.50	24.70	37.16	33.14	25.38	29.37	35.63	31.57	30.39	32.22	29.96		
SDT 11	100.00	100.00	33.50	56.62	71.76	67.90	76.75	74.58	68.82	57.24	61.10	67.74	61.19	55.05	62.69	58.30		
SDT 12	75.00	75.00		54.73	41.29	36.98	40.09	28.42	34.54	30.03	53.4	41.72			40.13	37.32		
SDT 13	66.67	66.67		41.6	39.77	37.63	36.74	28.77	32.54	28.46	34.77				35.04	32.59		
SDT 14	91.67	91.67	37.58	41.07	40.94	35.74	37.56	29.81	34.91	31.03	33.9	45.37		45.7	37.60	34.97		
SDT 15	100.00	100.00	45.27	51.07	63.37	55.89	59.03	46.54	50.16	46.65	49.37	50.46	48.88	63.55	52.52	48.84		
SDT 18	91.67	91.67	59.72	56.95	64.79	68.19	65.7	63.33	79.88	55.47	66.4	69.09		70.92	65.49	60.91		
SDT 20	100.00	100.00	52.59	60.69	56.13	57.40	74.12	53.4	63.59	47.33	51.85	59.15	56.4	59.28	57.66	53.62		
SDT 24	100.00	100.00	63.88	69.47	63.09	71.20	80.37	59.16	78.8	60.96	72.34	63.54	66.06	73.12	68.50	63.71		
SDT 29	100.00	100.00	75.32	80.11	71.09	71.45	80.1	68.60	72.74	61.09	65.07	67.55	64.95	76.07	71.18	66.20		
SDT 31	100.00	100.00	41.06	64.69	43.59	52.65	55.56	46.62	49.39	42.53	45.55	52.14	56.32	56.5	50.55	47.01		
SDT 38	91.67	91.67	51.91	48.89	41.29	59.48	63.72	46.61	63.73	53.69	58.3	52.41	52.22	62.07	54.18	50.39		

Site ID	Valid data capture for monitoring period %	Valid data capture 2018 %	Annual Mean NO ₂													
			Jan	Feb	March	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual mean – raw data	Annual mean – bias adjusted
SDT 39	100.00	100.00	41.05	52.50	63.09	48.92	50.45	34.46	43.93	39.77	47.83	45.37	42.93	56.34	47.22	43.91
SDT 41	91.67	91.67	58.07	70.67	51.34	62.26	65.32	51.73	62.93	47.79	61.28	52.16		57.8	58.30	54.22
SDT42	100.00	100.00	44.78	35.51	52.09	43.06	33.20	25.65	34.66	33.22	35.93	39.69	40.79	36.93	37.96	35.30
SDT 48	91.67	91.67	51.09	45.04	48.39		46.90	43.15	61.91	47.57	39.86	51.29	44.82	49.24	48.11	44.74
SDT49	100.00	100.00	36.15	37.92	42.59	36.36	29.28	20.41	24.04	22.29	28.11	32.17	37.18	31.72	31.52	29.31
SDT 52	100.00	100.00	32.93	28.83	32.13	22.95	25.37	19.74	25.55	23.82	28.46	32.03	35.71	33.01	28.38	26.39
SDT 53	100.00	100.00	31.60	33.05	31.68	24.11	24.47	19.29	25.08	22.64	24.66	28.39	32.02	32.84	27.49	25.57
SDT 54	100.00	100.00	36.24	33.76	39.28	32.97	29.60	20.87	26.59	24.36	28.68	36.62	38.10	37.01	32.01	29.77
SDT 55	91.67	91.67	43.26		77.52	39.15	35.57	29.14	34.78	31.51	38.52	39.51	43.20	36.15	40.76	37.91
SDT57	100.00	100.00	42.28	45.38	47.76	44.89	50.78	40.67	40.92	35.34	38.71	49.46	36.29	51.22	43.64	40.59
SDT61	91.67	91.67	37.86	33.29	46.30	40.72		27.87	35.57	32.22	34.25	40.45	38.58	37.83	36.81	34.23
SDT66	91.67	91.67	34.44	37.00	51.99	44.98	34.21	29.81		26.89	30.46	36.99	42.51	34.44	36.70	34.13
SDT77	91.67	91.67	67.15	47.25	54.97	52.67	54.34	44.69	54.01	45.17		45.75	47.8	47.91	51.06	47.49
SDT81	100.00	100.00	69.72	60.5	68.43	73.22	88.39	72.83	84.03	64.57	68.31	72.95	78.15	71.74	72.74	<u>67.65</u>
SDT82	100.00	100.00	49.98	61.05	68.07	59.22	68.47	57.32	60.8	48.98	47.51	62.2	61.59	59.11	58.69	54.58
SDT84	91.67	91.67		47.11	59.11	49.10	52.91	38.96	40.53	39.6	47.51	49.15	50.71	45.26	47.27	43.96
SDT 87	100.00	100.00	59.29	54.50	67.90	68.63	53.18	48.80	75.66	61.98	65.52	52.46	61.68	59.44	60.75	56.50
SDT88	100.00	100.00	59.39	53.74	70.84	69.73	54.31	48.13	63.45	53.21	54.89	50.91	54.37	54.99	57.33	53.32
SDT89	75.00	75.00	44.17	44.49	53.93	51.03	42.81	41.58	39.17			42.17	42.91		44.70	41.57
SDT 90	100.00	100.00	67.72	86.23	82.53	77.08	72.42	68.71	77.80	63.03	66.26	67.01	75.71	66.70	72.60	<u>67.52</u>
SDT 91	100.00	100.00	57.04	78.17	84.23	71.43	72.43	68.03	70.31	57.25	60.36	64.42	61.15	53.18	66.50	<u>61.85</u>
SDT92	91.67	91.67	59.90		60.86	58.85	52.38	43.86	57.21	53.72	57.86	50.61	51.83	48.30	54.13	50.34
SDT93	83.33	83.33	57.79	51.23		69.88		59.93	78.42	86.83	81.93	74.10	74.34	55.93	69.04	<u>64.21</u>
SDT94	91.67	91.67	88.02	73.87	87.15		73.79	77.63	97.70	73.56	69.88	67.38	88.22	65.77	78.45	<u>72.96</u>
SDT 95	83.33	83.33	32.70	29.59	35.14	28.66	25.02	21.74			27.12	32.62	31.16	28.92	29.27	27.22
SDT 96	83.33	83.33	42.12	41.74	40.59	37.00	45.89		41.02	35.69	36.89	45.06	45.89		41.19	38.31
SDT 97	91.67	91.67	54.04	43.70	52.26	53.56	41.67	40.87	48.14		45.29	48.10	57.23	50.35	48.66	45.25
SDT98	100.00	100.00	60.96	50.66	56.80	48.30	63.81	53.88	66.03	55.21	57.35	55.33	59.70	54.98	56.92	52.94

Site ID	Valid data capture for monitoring period %	Valid data capture 2018 %	Annual Mean NO ₂													Annual mean – raw data	Annual mean – bias adjusted
			Jan	Feb	March	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec			
SDT 99	100.00	100.00	37.54	32.88	38.65	35.12	30.76	25.99	30.56	29.61	36.31	39.06	33.56	33.61	33.64	31.29	
SDT 100	100.00	100.00	40.09	32.02	42.03	37.48	35.11	28.15	38.56	31.20	45.33	39.33	44.18	39.76	37.77	35.13	
SDT 101	91.67	91.67	49.06	42.17		41.14	37.47	38.96	40.56	31.37	36.16	35.86	50.44	44.08	40.66	37.81	
SDT 102	100.00	100.00	41.86	37.66	46.41	38.89	47.92	33.64	37.89	33.13	40.28	44.12	43.03	32.70	39.79	37.00	
SDT 103	100.00	100.00	52.98	45.68	54.06	51.71	36.54	40.96	44.97	40.09	45.15	27.20	50.38	40.46	44.18	41.09	
SDT 104	91.67	91.67	57.92	70.48	80.64	77.87	79.36	73.18	86.13	67.61	61.92		73.78	70.16	72.64	67.56	
SDT 105	100.00	100.00	51.41	38.11	48.86	44.77	42.88	35.66	46.69	44.71	50.79	49.63	47.47	40.37	45.11	41.95	
SDT 106	100.00	100.00	69.95	64.39	67.67	59.98	74.59	51.16	69.38	57.29	61.56	68.53	68.07	68.33	65.08	60.52	
SDT 107	91.67	91.67	30.34	44.07	55.13	48.28	41.64	36.63	42.31	31.71	39.65	48.65	46.64		42.28	39.32	
SDT 108	100.00	100.00	44.12	43.85	36.85	41.35	39.56	30.1	41.41	32.89	39.18	46.64	38.78	48.8	40.29	37.47	
SDT 109	100.00	100.00	33.6	34.06	46.42	30.44	32.2	22.38	26.95	23.05	31.32	33.11	33.17	38.78	32.12	29.87	
SDT 110	100.00	100.00	38.36	37.91	63.89	34.38	35.3	25.55	30.17	28.69	35.46	35.26	39.73	30.08	36.23	33.69	
SDT 111	100.00	100.00	42.38	48.93	61.50	61.98	59.27	54.57	57.01	46.57	51.29	55.39	52.71	53.12	53.73	49.97	
SDT 112	100.00	100.00	33.12	32.01	36.55	23.97	30.84	24.94	25.83	22.09	28.92	35.51	35.7	30.21	29.97	27.87	
SDT 113	100.00	100.00	53.91	47.79	66.55	70.33	67.85	55.84	83.7	61.97	72.59	70.68	72.09	72.51	66.32	61.68	
SDT 114	100.00	100.00	42.57	49.64	39.71	34.61	35.02	29.08	31.20	28.62	33.95	37.88	39.09	35.71	36.42	33.87	
SDT 115	91.67	91.67		28.40	30.89	25.37	23.67	15.54	19.47	18.97	23.76	29.13	30.10	29.13	24.95	23.20	
SDT 116	91.67	91.67		27.70	41.22	26.75	23.47	18.57	20.99	19.38	23.45	28.82	33.86	26.26	26.41	24.56	
SDT 117	91.67	91.67		27.06	33.99	27.07	36.01	18.03	19.33	20.10	24.21	28.01	26.30	28.14	26.20	24.37	

Site ID	Valid data capture for monitoring period %	Valid data capture 2018 %	Annual Mean NO ₂												Annualisation data	Annualisation mean – bias adjusted
			Jan	Feb	March	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec		
SDT 118	100	33.33									42.98	45.22	45.89	45.63	43.73	41.78
SDT 119	100	33.33									29.95	33.99	37.56	31.43	32.34	30.08
SDT 120	100	16.67											36.10	35.01	34.36	31.95
SDT 121	100	16.67											36.10	35.01	40.11	33.07
SDT 122	50	8.33												33.45	33.14	31.11
SDT 123	50	8.33											51.48		48.83	47.88
SDT 124	50	8.33											30.59		29.02	28.45
SDT 125	100	16.67											39.26	36.41	36.67	35.19
SDT 126	50	8.33											24.52		36.67	22.80
SDT 127	50	16.67											32.86	28.72	29.84	28.63
SDT 128	100	16.67											47.90	38.84	42.03	40.33
SDT 129	100	16.67											45.79	39.82	41.49	39.81
SDT 130	100	16.67											41.19	35.19	37.01	35.52
SDT 131	100	16.67											47.00	37.83	41.11	39.45
SDT 132	50	8.33											55.40	49.25	48.79	48.67
SDT 133	100	16.67											61.29	36.21	47.25	45.34
SDT 134	100	16.67											45.19	36.56	39.62	38.02
SDT 135	100	8.33											66.01	55.53	55.01	56.52
SDT 136	100	8.33												41.80	41.41	38.87
SDT 137	100	8.33												30.84	30.55	28.68

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

Exceedances where there is potential for the hourly mean to be exceeded i.e. over 60µg.m⁻³ are in **bold** and underlined.

Appendix C Air quality consultations 2018

National Consultations

Defra – National Air Quality Strategy

Defra – Environment (principles and Governance) Bill

Defra – Cleaner Domestic Burning of Solid Fuels and Wood

DfT – The Last Mile – a call for evidence

Local Consultations

City of London – Draft Air Quality Strategy

Southwark Council Movement Plan

Southwark Council New Southwark Plan (Local plan)

Regional Consultations

TfL consultation on Taxi licensing conditions

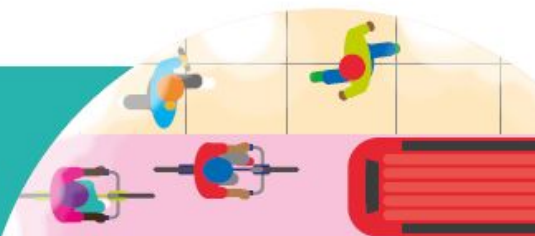
Heathrow Airport Consultation

Mayor of London's Transport Strategy

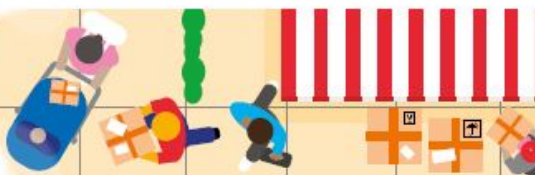
Mayor of London's Environmental Strategy

**HELP CLEAN
SOUTHWARK'S
AIR #ONETHING**

**LEAVE YOUR
CAR AT HOME**



**USE CLICK
AND COLLECT**



**SWITCH YOUR
ENGINE OFF**



WHICH ONE THING WILL YOU CHOOSE?

Make your clean air pledge at southwark.gov.uk/onething

Contact

Environmental Protection Team
Regulatory Services
Environment & Leisure Services
3rd Floor, Hub 1
P.O. Box 64529
London
SE1P 5LX

Telephone 020 7525 4261
Email environmental.protection@southwark.gov.uk
Web www.southwark.gov.uk/airquality