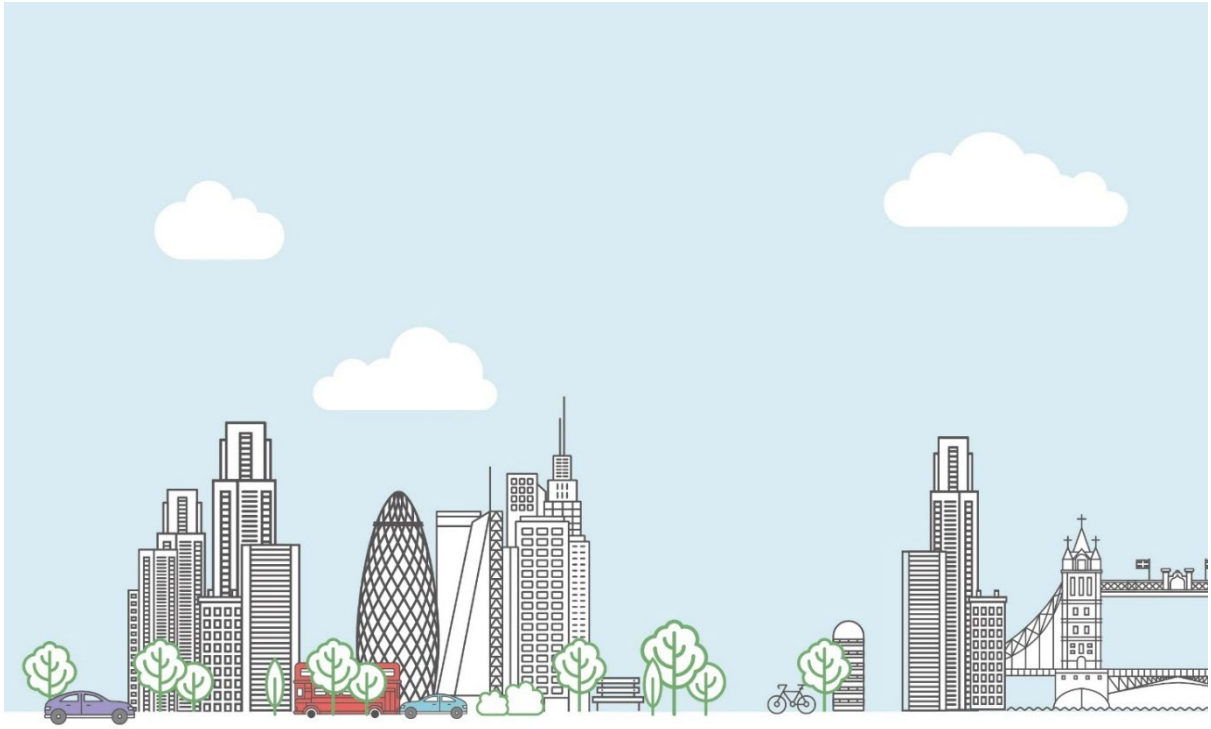
City of London Corporation Air Quality Annual Status Report for 2021

Date of publication: May 2022



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

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

Contents

Tables

Abbreviations

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

Table A. Summary of National Air Quality Standards and Objectives

Pollutant	Standard / Objective (UK)	Averaging Period	Date[(1)]
Nitrogen dioxide (NO_2)	200 µg m^{-3} not to be exceeded more than 18 times a year	1-hour mean	31 Dec 2005
Nitrogen dioxide (NO_2)	40 µg m^{-3}	Annual mean	31 Dec 2005
Particles (PM_{10})	50 µg m^{-3} not to be exceeded more than 35 times a year	24-hour mean	31 Dec 2004
Particles (PM_{10})	40 µg m^{-3}	Annual mean	31 Dec 2004
Particles ($PM_{2.5}$)	25 µg m^{-3}	Annual mean	2021
Particles ($PM_{2.5}$)	Target of 15% reduction in concentration at urban background locations	3-year mean	Between 2010 and 2021
Sulphur dioxide (SO_2)	266 µg m^{-3} not to be exceeded more than 35 times a year	15-minute mean	31 Dec 2005
Sulphur dioxide (SO_2)	350 µg m^{-3} not to be exceeded more than 24 times a year	1-hour mean	31 Dec 2004
Sulphur dioxide (SO_2)	125 µg m^{-3} mot to be exceeded more than 3 times a year	24-hour mean	31 Dec 2004

Notes:

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

1. Air Quality Monitoring

1.1 Locations

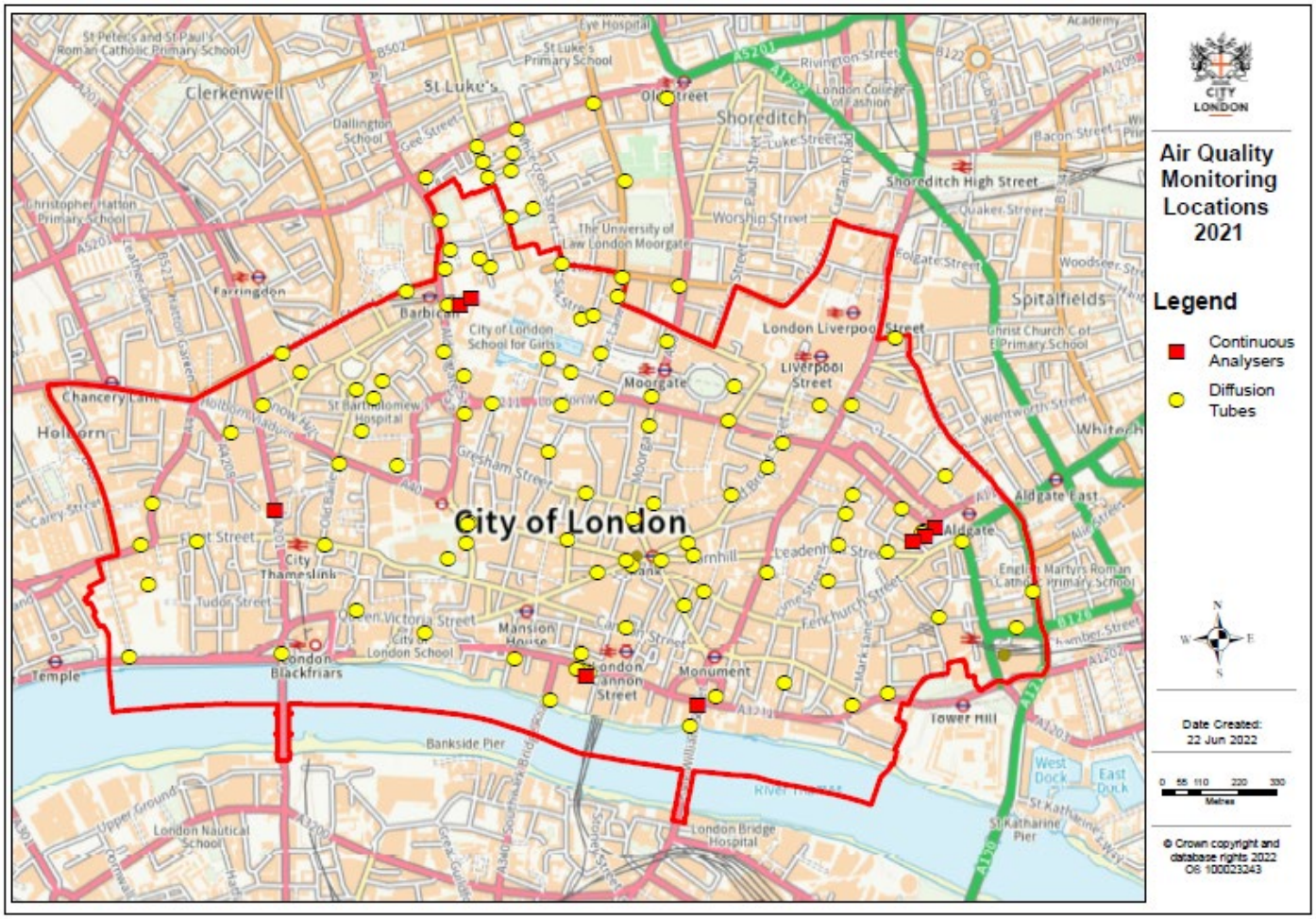


Figure 1. Air quality monitoring locations in the City of London

Table B. Details of Automatic Monitoring Sites for 2021

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA? If so, which AQMA?	Distance to Relevant Exposure (m)	Distance to Kerb of Nearest Road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Monitoring technique
CT2	Farringdon Street	531620	181239	Kerbside	Y	0 m	1m	1.5	$PM_{2.5}$	BAM
CT3	The Aldgate School (Formally John Cass School)	533475	181179	Urban Background	Y	0 m	N/A	1.5	PM_{10}	BAM
CT3	The Aldgate School	533475	181179	Urban Background	Y	0 m	N/A	1.5	$PM_{2.5}$	BAM
CT3	The Aldgate School	533475	181179	Urban Background	Y	0 m	N/A	1.5	NO_2	Chemiluminescent
CT4	Beech Street	532141	181861	Roadside	Y	0 m	1m	3	PM_{10}	BAM
CT4	Beech Street	532176	181862	Roadside	Y	0 m	1m	2	NO_2	Chemiluminescent
CT6	Walbrook Wharf	532528	180784	Roadside	Y	0 m	1m	3	NO_2	Chemiluminescent
CT8	Upper Thames Street	532834	180691	Roadside	Y	0 m	2m	1.5	PM_{10}	BAM

Table C (i) Long term diffusion tube sites

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA? If so, which AQMA?	Distance to Relevant Exposure (m)	Distance to Kerb of Nearest Road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor. (Y/N)
CL5	St. Bartholomew's Hospital courtyard	531901	181571	Urban Background	Y	0 m	N/A	1.5	NO2	N
CL38	St. Andrew's Church, Queen Victoria St	531851	180962	Roadside	Y	0 m	2m	3	NO2	N
CL39	St. Dunstan's Church, Fleet St	531235	181155	Roadside	Y	0 m	2m	1.5	NO2	N
CL55	Speed House, Barbican Centre	532482	181799	Urban Background	Y	0 m	N/A	0.5	NO2	N
CL40	Guinness Trust Estate, Mansell St.	533791	181027	Roadside	Y	0 m	3m	2	NO2	N

Table C (ii) Bank area diffusion tubes

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA?	Distance from monitoring site to relevant exposure (m)	Distance to kerb of nearest road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor (Y/N)
Bank 1	Cannon Street	532628.4	180916.0	Kerbside	Y	0 m	<1m	2m	NO2	N
Bank 2	Queen Victoria Street	532576.3	180931.9	Kerbside	Y	0 m	<1m	2m	NO2	N
Bank 3	King Street	532460.7	181167.5	Kerbside	Y	0 m	<1m	2m	NO2	N
Bank 5	Magistrates Court	532644.9	181092.6	Kerbside	Y	0 m	<1m	2m	NO2	N
Bank 6	King William Street	532795.4	180980.2	Kerbside	Y	0 m	<1m	2m	NO2	N
Bank 8	Lombard Street	532853.1	181017.6	Kerbside	Y	0 m	<1m	2m	NO2	N
Bank 10	Cornhill Bank Junction	532729.3	181107.2	Kerbside	Y	0 m	<1m	2m	NO2	N
Bank 11	Cornhill-Royal Exchange	532822.0	181123.0	Kerbside	Y	0 m	<1m	2m	NO2	N
Bank 12	Threadneedle Street	532841.0	181192.9	Kerbside	Y	0 m	<1m	2m	NO2	N
Bank 13	31 Old Broad Street	533036.0	181376.4	Kerbside	Y	0 m	<1m	2m	NO2	N
Bank 14	Wormwood Street	533077.9	181445.0	Kerbside	Y	0 m	<1m	2m	NO2	N
Bank 15	3 London Wall	532923.0	181509.1	Kerbside	Y	0 m	<1m	2m	NO2	N
Bank 16	81 London Wall	532664.5	181552.3	Kerbside	Y	0 m	<1m	2m	NO2	N
Bank 17	55 Moorgate	532693.1	181497.7	Kerbside	Y	0 m	<1m	2m	NO2	N
Bank 18	85 Gresham Street	532693.1	181497.7	Kerbside	Y	0 m	<1m	2m	NO2	N
Bank 19	Lothbury	532723.6	181265.3	Roadside	Y	0 m	2m	2m	NO2	N
Bank 20	Princes Street	532649.3	181224.6	Kerbside	Y	0 m	<1m	2m	NO2	N
Bank 22	Gracechurch Street Leadenhall	533,040.4	181,108.6	Kerbside	Y	0 m	1m	2m	NO2	N
Bank 23	Fish Street Hill	532,839.3	180,714.3	Kerbside	Y	0 m	<1m	2m	NO2	N

Table C (iii) Low Emissions Neighbourhood area diffusion tubes

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA?	Distance from monitoring site to relevant exposure (m)	Distance to kerb of nearest road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor (Y/N)
LEN 1	Giltspur Street	531,855.0	181,586.1	Kerbside	Y	0m	1m	2m	NO_2	N
LEN 3	Beech Street- Near barbican station	532,116.9	181,840.1	Roadside	Y	0m	2m	2m	NO_2	N
LEN 4	Aldersgate	532,116.9	181,714.4	Kerbside	Y	0m	1m	2m	NO_2	N
LEN 5	Viscount Street	532,238.7	181,948.6	Roadside	Y	0m	2m	2m	NO_2	N
LEN 6	Whitecross Street/ Beech Street	532,447.6	181,964.5	Roadside	Y	0m	2m	2m	NO_2	N
LEN 7	Silk Street	532,536.5	181,813.7	Kerbside	Y	0m	1m	2m	NO_2	N
LEN 8	Fore Street	532,471.4	181,650.2	Kerbside	Y	0m	1m	2m	NO_2	N
LEN 9	London Wall/ Brewers Hall Gardens	532,477.7	181,561.3	Kerbside	Y	0m	1m	2m	NO_2	N
LEN 10	Aldermanbury	532,409.5	181,420.0	Roadside	Y	0m	2m	2m	NO_2	N
LEN 15	Fann Street	532, 125.9	181,944.8	Kerbside	Y	0m	1m	2m	NO_2	N
LEN 16	Moor Lane	532, 554.6	181,701.2	Kerbside	Y	0m	1m	2m	NO_2	N

Table C (iv) Other sites with diffusion tubes

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA?	Distance from monitoring site to relevant exposure (m)	Distance to kerb of nearest road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor (Y/N)
SJC1, 6 and 8	The Aldgate School rear playground (co-location)	533475	181179	Urban Background	Y	0 m	N/A	1.5m	NO_2	Y
WW1, 2 & 3	Walbrook Wharf (co-location)	532528	180784	Roadside	Y	0m	1m	3M	NO_2	Y
PLA5	Southwark Bridge	532,411.7	180, 705.8	Roadside	Y	0m	N/A	2m	NO_2	N
PLA6	London Bridge	532,813.4	180, 635.9	Urban Background	Y	0m	N/A	2m	NO_2	N
Liverpool St	Liverpool Street	533,189.6	181, 533.5	Kerbside	Y	0m	1m	2m	NO_2	N
Fenchurch Ave	Fenchurch Avenue	533,211.9	181, 053.4	Roadside	Y	0m	2m	2m	NO_2	N
Fetter Lane	Fetter Lane	531,270.3	181, 269.4	Kerbside	Y	0m	1m	2m	NO_2	N
OS1	St Mary at Hill's Churchyard	533,081.7	180, 758.2	Urban Background	Y	0m	2m	2m	NO_2	N
OS3	St Pauls	532,121.2	181, 110.6	Urban Centre	Y	0m	1m	2m	NO_2	N

OS5	Whittington Gardens	532,502.2	180, 843.9	Urban Background	Y	0m	20m	2m	NO_2	N
OS6	Finsbury Circus	532,939.1	181,609.2	Roadside	Y	0m	1m	2m	NO_2	N
OS7	Christchurch Greyfriars Garden	531,971.8	181,382.2	Roadside	Y	0m	4m	2m	NO_2	N
Brushfield	Brushfield Street	533,402.6	181,748.3	Roadside	Y	0m	1m	2n	NO_2	N
Goodmans Yard	Goodmans Yard	533,751.1	180,915.6	Roadside	Y	0m	2m	2m	NO_2	N
Goldman	Goldman Sachs, Shoe Lane	531,494.5	181,475.5	Roadside	Y	0m	4m	2m	NO_2	N
Citigen	Citigen	531,642.0	181,701.8	Roadside	Y	0m	2m	2m	NO_2	N
N1	Hatching Dragons Nursery	532,164.1	181,640.5	Urban Background	Y	0m	27m	2m	NO_2	N
N2	Bright Horizons Nursery	532,208.1	181,977	Urban Background	Y	0m	2m	2m	NO_2	N
SPS2	St Pauls School front railings	532,169.7	181,158.2	Roadside	Y	0m	3m	2m	NO_2	N
CLS2	CoL Boys School access ramp	532,050.6	180,900.0	Urban Background	Y	0m	41m	2m	NO_2	N
CHS	Charterhouse Square School	531,988.3	181,880.7	Roadside	Y	0m	1m	1.5m	NO_2	N

Table C (v) Diffusion tube sites to support the monitoring of the Transport Strategy

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA ?	Distance from monitoring site to relevant exposure (m)	Distance to kerb of nearest road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor (Y/N)
T2	Byward Street	533, 276.9	180,692.6	Kerbside	Y	0m	1m	2m	NO_2	N
T3	Seething Lane	533, 381.7	180,726.4	Kerbside	Y	0m	1m	2m	NO_2	N
T4	Crosswall	533, 526.2	180,948.7	Kerbside	Y	0m	1m	2m	NO_2	N
T5	Minories	533, 594.4	181,161.4	Kerbside	Y	0m	1m	2m	NO_2	N
T6	Stoney Lane	533, 545.2	181,355.1	Kerbside	Y	0m	1m	2m	NO_2	N
T7	Heneage Lane	533, 421.4	181,258.2	Kerbside	Y	0m	1m	2m	NO_2	N
T9	150 Bishopsgate	533, 276.9	181,558.3	Kerbside	Y	0m	1m	2m	NO_2	N
T10	St Mary Axe	533, 238.8	181,151.9	Kerbside	Y	0m	1m	2m	NO_2	N
T11	Old Broad Street	532, 929.3	181,299.5	Kerbside	Y	0m	1m	2m	NO_2	N
T12	Upper Thames Street	532, 310.1	180,824.9	Kerbside	Y	0m	1m	2m	NO_2	N
T13	Blackfriars Bridge	531, 641.8	180,839.1	Kerbside	Y	0m	1m	2m	NO_2	N
T14	Victoria Embankment	531, 203.7	180,834.4	Kerbside	Y	0m	1m	2m	NO_2	N
T15	Fleet Street	531, 394.2	181,159.8	Kerbside	Y	0m	1m	2m	NO_2	N
T16	Ludgate Hill	531, 765.6	181,150.3	Kerbside	Y	0m	1m	2m	NO_2	N
T17	Museum of London	532, 167.3	181,528.1	Kerbside	Y	0m	1m	2m	NO_2	N
T18	London Wall	532, 240	181,559.9	Kerbside	Y	0m	1m	2m	NO_2	N
T19	West Poultry Ave	531, 695.8	181,651.9	Kerbside	Y	0m	1m	2m	NO_2	N

T20	The Fable	531, 586.2	181,558.3	Kerbside	Y	0m	1m	2m	NO_2	N
T21	North Old Baily	531, 804.3	181,386.7	Kerbside	Y	0m	1m	2m	NO_2	N
T22	Leadenhall St/ Creechurch Lane	533,237.4	181,152.3	Kerbside	Y	0m	1m	2m	NO_2	N
T23	The Gherkin	533,260.0	181,245.0	Kerbside	Y	0m	1m	2m	NO_2	N
T24	St Mary's Axe/Bury Court	533,279.2	181,295.7	Kerbside	Y	0m	1m	2m	NO_2	N

Table C (vi) Sites to support the Beech Street Zero Emissions Vehicle Street Project

Diffusion tubes have been deployed to gather data for monitoring the impacts of the Beech Street Zero Emissions Vehicle Street project. Note: Some of the sites monitored lie outside of the City of London's boundary to assess the impact in neighbouring Boroughs, these have not been included in this report.

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA ?	Distance from monitoring site to relevant exposure (m)	Distance to kerb of nearest road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor (Y/N)
BS1	Aldersgate Street	532,108.3	181,947.8	Kerbside	Y	0m	1m	2m	NO_2	N
BS14	Bunhill Row/Chiswell Street	532,617	181,920	Kerbside	Y	0m	1m	2m	NO_2	N
BS16	Moore Lane/Ropemaker Street	532,606	181,886	Kerbside	Y	0m	1m	2m	NO_2	N
BS17	Moorgate	532, 744	181,736	Kerbside	Y	0m	1m	2m	NO_2	N
BS18	London Wall/ Moorgate	532,702	181,580	Kerbside	Y	0m	1m	2m	NO_2	N
BS19	London Wall	532,576.4	181,578.4	Kerbside	Y	0m	1m	2m	NO_2	N
BS20	Wood Street	532,402.6	181,687.0	Kerbside	Y	0m	1m	2m	NO_2	N
BS21	Goswell Road	532,095.2	182,087.9	Kerbside	Y	0m	1m	2m	NO_2	N

1.2 Comparison of Monitoring Results with AQOs

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

Table D. Annual Mean NO_2 Ratified and Bias-adjusted Monitoring Results

Site ID	Site type	Valid data capture for monitoring period %[(a)]	Valid data capture 2021 %[(b)]	2015	2016	2017	2018	2019	2020	2021
CT3 (Aldgate School)	Urban Background	N/A	97	**42**	**42**	38	32	33	22	23
CT4 (Beech St)	Roadside	N/A	85	**89**	**85**	**80**	**69**	**62**	29	31
CT 6 (Walbrook)	Roadside	N/A	96	**98**	**92**	**92**	**87**	**73**	**45**	**46**

Notes:

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

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

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

Means for diffusion tubes have been corrected for bias.

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

Results have been distance corrected where applicable.

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

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

Table D (i) Annual mean NO_2 monitoring results for long term diffusion tube sites (µg/m^3)

Site ID	Site type	Location	Valid data capture for monitoring period %[(a)]	Valid data capture 2021 %[(b)]	Annual Mean Concentration (µg/m3)						
					2015	2016	2017	2018	2019	2020	2021
CL5	Urban Background	St. Bartholomew's Hospital courtyard	N/A	100	38	**49**	**63**	**50**	**42**	33	31
CL38	Roadside	St. Andrew's Church, Queen Victoria St	N/A	83	**53**	**56**	**52**	**50**	**41**	28	28
CL39	Roadside	St. Dunstan's Church, Fleet St	N/A	100	**87**	**81**	**82**	**70**	**57**	31	36
CL55	Urban Background	Speed House, Barbican Centre	N/A	92	33	35	32	31	28	19	19
CL40	Roadside	Guinness Trust Estate, Mansell St.	N/A	83	**56**	**51**	**48**	**46**	39	33	27

Table D (ii) Annual Mean NO_2 monitoring results for the Bank area (µg/m^3)

Site ID	Site type	Location	Valid data capture for monitoring period %[(a)]	Valid data capture 2021 %[(b)]	Annual Mean Concentration (µg/m3)					
					2016	2017	2018	2019	2020	2021
BANK 1	Kerbside	Cannon Street	N/A	100	**78**	**65**	**50**	**40**	38	37
BANK 2	Kerbside	Queen Victoria Street	N/A	75	**72**	**59**	**58**	**51**	35	31
BANK 3	Kerbside	King Street	N/A	92	**52**	**52**	**52**	**47**	30	30
BANK 5	Kerbside	Magistrates Court	N/A	67	**66**	**63**	**53**	**56**	36	32
BANK 6	Kerbside	King William Street	N/A	100	**76**	**70**	**61**	**61**	**42**	35
BANK 8	Kerbside	Lombard Street	N/A	92	**59**	**56**	**56**	**45**	30	28
BANK 10	Kerbside	Cornhill Bank Junction	N/A	100	**71**	**67**	**66**	**57**	31	30
BANK 11	Kerbside	Cornhill-Royal Exchange	N/A	100	**61**	**57**	**62**	**41**	26	27

BANK 12	Kerbside	Threadneedle Street	N/A	67	**85**	**69**	**62**	**42**	31	28
BANK 13	Kerbside	31 Old Broad Street	N/A	75	**59**	**57**	**53**	**45**	28	26
BANK 14	Kerbside	Wormwood Street	N/A	92	**64**	**61**	**57**	**49**	32	32
BANK 15	Kerbside	3 London Wall	N/A	92	**64**	**54**	**65**	**53**	33	38
BANK 16	Kerbside	81 London Wall	N/A	92	**60**	**59**	**62**	**53**	36	**41**
BANK 17	Kerbside	55 Moorgate	N/A	75	**69**	**66**	**66**	**52**	36	36
BANK 18	Kerbside	85 Gresham Street	N/A	83	**53**	**54**	**52**	**46**	30	30
BANK 19	Roadside	Lothbury	N/A	75	**45**	**44**	**45**	39	24	24
BANK 20	Kerbside	Princes Street	N/A	83	**78**	**74**	**69**	**49**	36	34
BANK 22	Kerbside	Gracechurch Street Leadenhall	N/A	92	**-**	**66**	**62**	**51**	33	36

BANK 23	Kerbside	Fish Street Hill	N/A	92	-	**66**	**61**	**43**	32	31

Table D (iii) Annual Mean NO_2 monitoring results for the LEN area (µg/m^3)

Site ID	Site Type	Location	Valid data capture for monitoring period %[(a)]	Valid data capture 2021 %[(b)]	Annual Mean Concentration (µg/m3)				
					2017	2018	2019	2020	2021
LEN 1	Kerbside	Giltspur Street	N/A	100	**53**	**43**	38	28	27
LEN 3	Roadside	Beech Street- Near barbican station	N/A	92	**69**	**62**	**50**	33	30
LEN 4	Kerbside	Aldersgate	N/A	83	**62**	**57**	**47**	**41**	35
LEN 5	Roadside	Viscount Street	N/A	100	**40**	37	-	24	22
LEN 6	Roadside	Whitecross Street/ Beech Street	N/A	92	**46**	**42**	**40**	23	25
LEN 7	Kerbside	Silk Street	N/A	100	**41**	**41**	36	25	24
LEN 8	Kerbside	Fore Street	N/A	92	**41**	38	34	25	25
LEN 9	Kerbside	London Wall/ Brewers Hall Gardens	N/A	92	**48**	**49**	**42**	29	36

LEN 10	Roadside	Aldermanbury	N/A	100	38	37	31	24	23
LEN15	Kerbside	Fann Street	N/A	92	-	**41**	36	23	23
LEN16	Kerbside	Moor Lane	N/A	58	-	39	30	23	23

Table D (iv) Annual Mean NO_2 monitoring results for additional tubes (µg/m^3)

Site ID	Site Type	Location	Valid data capture for monitoring period %[a]	Valid data capture 2021 %[b]	Annual Mean Concentration (µg/m3)						
					2015	2016	2017	2018	2019	2020	2021
SJC1/6/8*	Urban Background	The Aldgate School rear playground (co-location)	N/A	86	**41**	39	**40**	39	33	22	24
WW1/2/3*	Roadside	Walbrook Wharf	N/A	94	-	-	**82**	**77**	**64**	**41**	**44**
PLA5	Roadside	Southwark Bridge	N/A	100	-	-	-	**41**	35	29	31
PLA6	Urban Background	London Bridge	N/A	75	-	-	-	37	35	26	26

Liverpool St	Kerbside	Liverpool Street	N/A	92	-	-	-	**71**	**52**	35	35
Fenchurch Ave	Roadside	Fenchurch Avenue	N/A	92	-	-	**46**	36	35	26	25
Fetter Lane	Kerbside	Fetter Lane	N/A	83	-	-	-	**56**	**44**	29	30
OS1	Urban Background	St Mary at Hill's Churchyard	N/A	67	-	-	-	33	31	20	21
OS3	Urban Centre	St Pauls	N/A	67	-	-	-	**41**	39	24	24
OS5	Urban Background	Whittington Gardens	N/A	92	-	-	-	**42**	37	26	26
OS6	Roadside	Finsbury Circus	N/A	67	-	-	-	-	-	-	25
OS7	Roadside	Christchurch Greyfriars Church Garden	N/A	100	-	-	-	-	-	-	27
Brushfield	Roadside	Brushfield Street	N/A	67	-	-	-	-	-	-	23
Goodmans Yard	Roadside	Goodmans Yard	N/A	92	-	-	-	-	**44**	25	28
Goldman	Roadside	Goldman Sachs, Shoe Lane	N/A	100	-	-	-	-	-	24	25

Citigen	Roadside	Citigen	N/A	100	-	-	-	-	-	30	30
N1	Urban Background	Hatching Dragons Nursery	N/A	100	-	-	-	-	-	22	22
N2	Urban Background	Bright Horizons Nursery	N/A	100	-	-	-	-	-	24	21
SPS2	Roadside	St Pauls School front railings	N/A	92	-	-	-	-	**42**	31	28
CLS2	Urban Background	CoL Boys School access ramp	N/A	100	-	-	-	-	-	21	23
CHS	Roadside	Charterhouse Square School	N/A	100	-	-	-	-	-	-	25

*SJC and WW have three diffusion tubes co-located. The results presented are an average of the three data sets for each year.

Table D (v) Annual Mean NO_2 monitoring results for the Transport Strategy tubes (µg/m^3)

Site ID	Site Type	Location	Valid data capture for monitoring period %[(a)]	Valid data capture 2021 %[(b)]	Annual Mean Concentration (µg/m3)			
					2018	2019	2020	2021
T2	Kerbside	Byward Street	N/A	92	**67**	**51**	33	**40**

T3	Kerbside	Seething Lane	N/A	92	**71**	**57**	**41**	**46**
T4	Kerbside	Crosswall	N/A	100	**50**	**44**	26	27
T5	Kerbside	Minories	N/A	92	**62**	**49**	36	37
T6	Kerbside	Stoney Lane	N/A	100	**40**	39	25	25
T7	Kerbside	Heneage Lane	N/A	100	**42**	33	25	25
T9	Kerbside	150 Bishopsgate	N/A	83	**74**	**48**	33	34
T10	Kerbside	St Mary Axe	N/A	92	**50**	**42**	24	25
T11	Kerbside	Old Broad Street	N/A	75	**40**	31	25	27
T12	Kerbside	Upper Thames Street	N/A	100	**48**	**53**	38	39
T13	Kerbside	Blackfriars Bridge	N/A	100	**62**	**56**	**41**	38
T14	Kerbside	Victoria Embankment	N/A	100	**68**	**57**	36	38
T15	Kerbside	Fleet Street	N/A	100	**62**	**47**	33	30
T16	Kerbside	Ludgate Hill	N/A	92	**61**	**50**	31	31

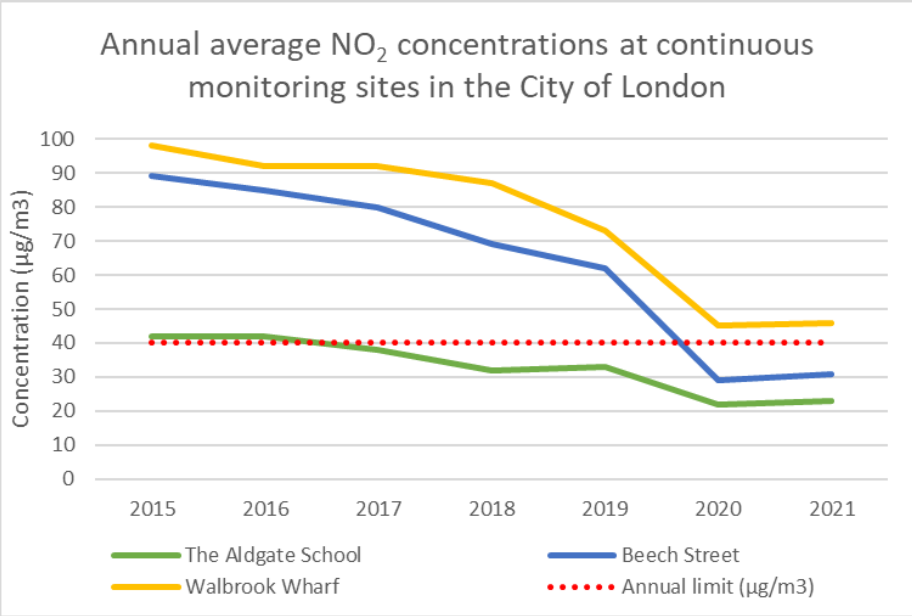
T17	Kerbside	Museum of London	N/A	100	**66**	**55**	36	35
T18	Kerbside	London Wall	N/A	100	**65**	**52**	36	36
T19	Kerbside	West Poultry Ave	N/A	92	**51**	38	28	26
T20	Kerbside	The Fable	N/A	83	**58**	**51**	35	30
T21	Kerbside	North Old Baily	N/A	100	**73**	**56**	36	**43**
T22	Kerbside	Leadenhall St/ Creechurch Lane	N/A	83	-	-	-	28
T23	Kerbside	The Gherkin	N/A	92	-	-	-	27
T24	Kerbside	St Mary's Axe/Bury Court	N/A	100	-	-	-	26

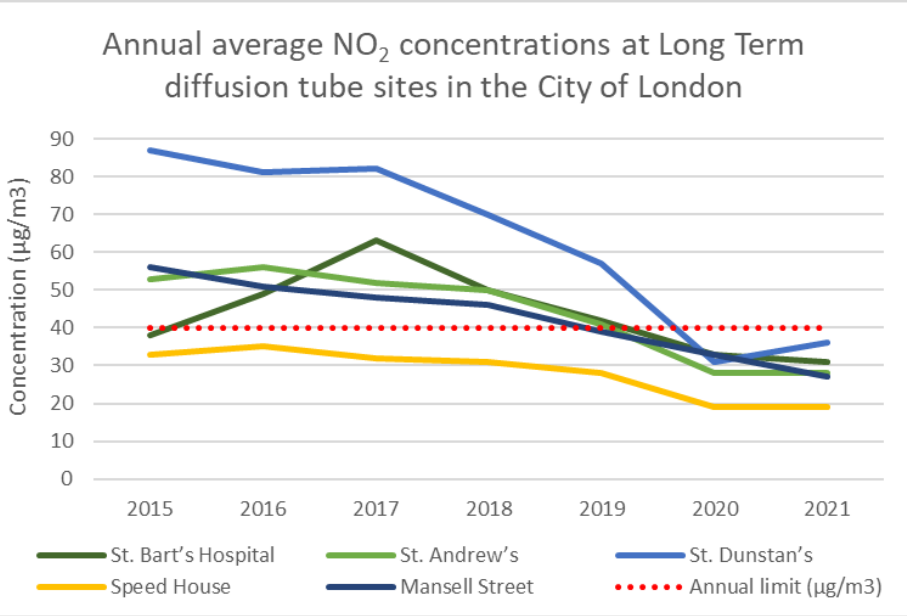
Table D (vi) Annual Mean NO_2 monitoring results for the Beech Street Project (µg/m^3)

Site ID	Site Type	Location	Valid data capture for monitoring period %[(a)]	Valid data capture 2021 %[(b)]	Annual Mean Concentration (µgm-3)		
					2019	2020	2021
BS1	Kerbside	Aldersgate Street	N/A	83	**47**	37	39

BS14	Kerbside	Bunhill Row/Chiswell Street	N/A	75	**40**	25	25
BS16	Kerbside	Moore Lane/Ropemaker Street	N/A	92	34	27	26
BS17	Kerbside	Moorgate	N/A	67	**52**	30	34
BS18	Kerbside	London Wall/ Moorgate	N/A	83	**52**	34	37
BS19	Kerbside	London Wall	N/A	100	**49**	34	35
BS20	Kerbside	Wood Street	N/A	75	29	23	24
BS21	Kerbside	Goswell Road	100	92	-	31	36

7-Year trend in Nitrogen Dioxide (NO_2) concentrations:





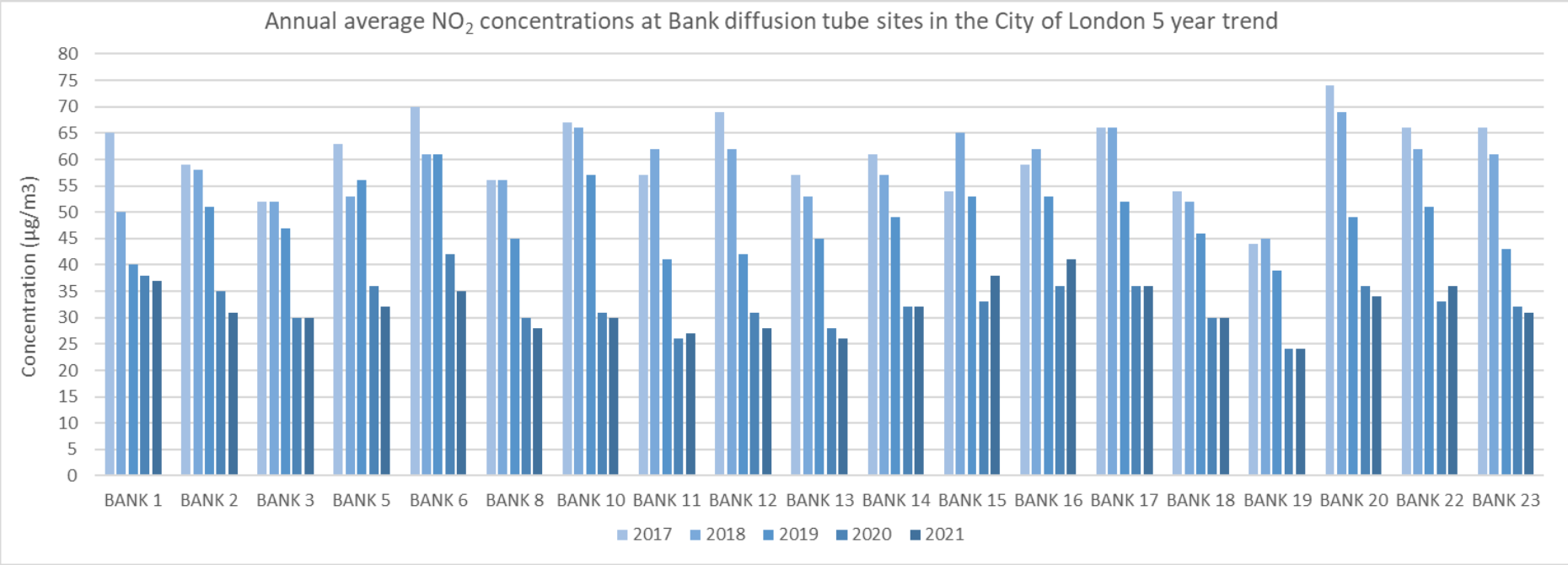
Continuous monitoring sites and long-term diffusion tube sites

Since 2015 nitrogen dioxide concentrations have been gradually decreasing across roadside and background monitoring sites in the Square Mile. The one exception was Barts hospital, which saw a sharp increase in 2016-17. This was associated with the installation of a new energy centre. We worked with St Barts Health NHS Trust to investigate and rectify this issue and NO_2 concentrations started declining once again in 2018. 2020 saw a large reduction in NO_2 concentrations with all long-term diffusion tubes meeting the annual objective for the first time and all but one continuous monitoring site also meeting the objective. In 2021,

all long-term diffusion tubes continued to meet the annual objective. A slight reduction in NO_2 concentration was observed at Mansell Street and St Bart's Hospital. Speed House and St Andrew's sites measured no change in NO_2 concentration, whilst St Dunstan's on Fleet Street recorded a slight increase in 2021 compared to 2020 due to the pandemic recovery. All continuous monitoring sites saw a slight increase in NO_2 concentration in 2021.

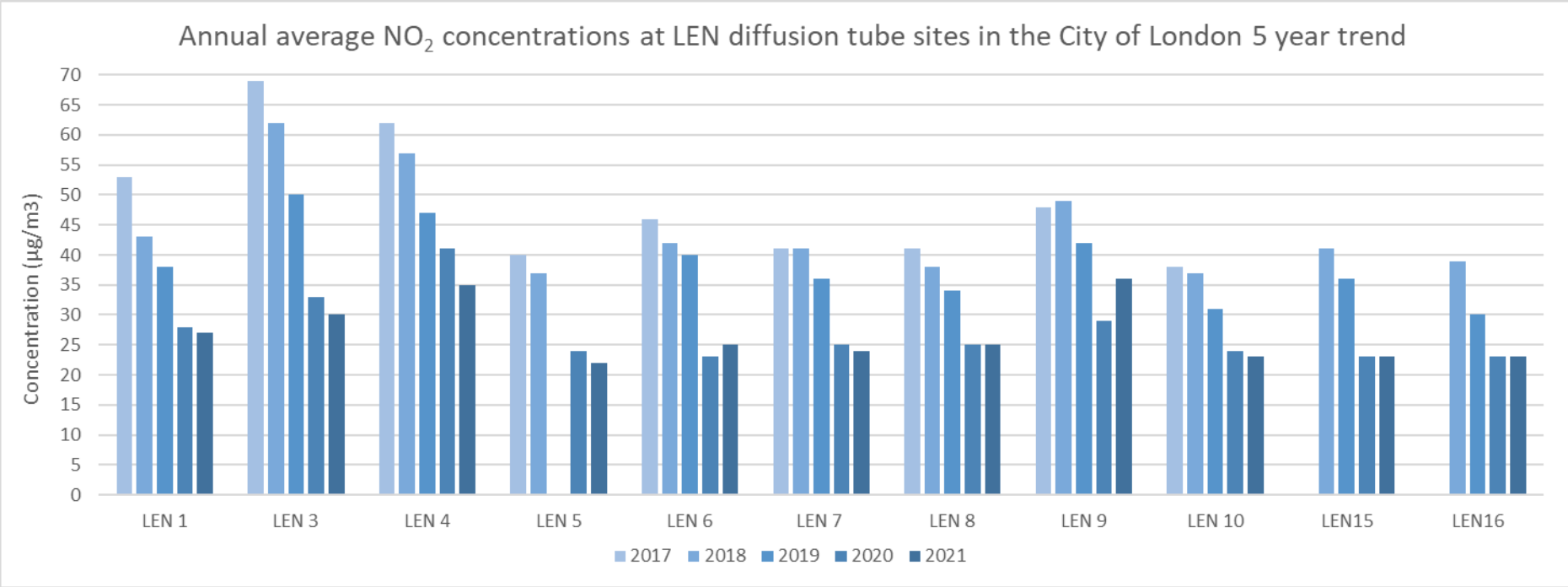
Bank Area

Diffusion tube monitoring began in the Bank area in 2016 to establish a baseline prior to the planned traffic changes to Bank Junction through the 'Bank on Safety' scheme. Traffic restrictions have been in place since 22nd May 2017. Since 2016 all monitoring sites have a seen a reduction in NO_2 concentrations, with large reductions being seen in 2020. Compared to 2020, the majority of sites had a slight decrease or remained the same concentration in 2021. All sites, but one, remained below the annual objective. In 2020, King William Street was the only outstanding site; that site has now come within the annual objective whereas 81 London Wall just exceeded the annual objective at 41 $\mu g/m^3$ in 2021. Both sites on London Wall (81 London Wall and 3 London Wall) had the largest increase (5$\mu g/m^3$) in NO_2 pollution in 2021.



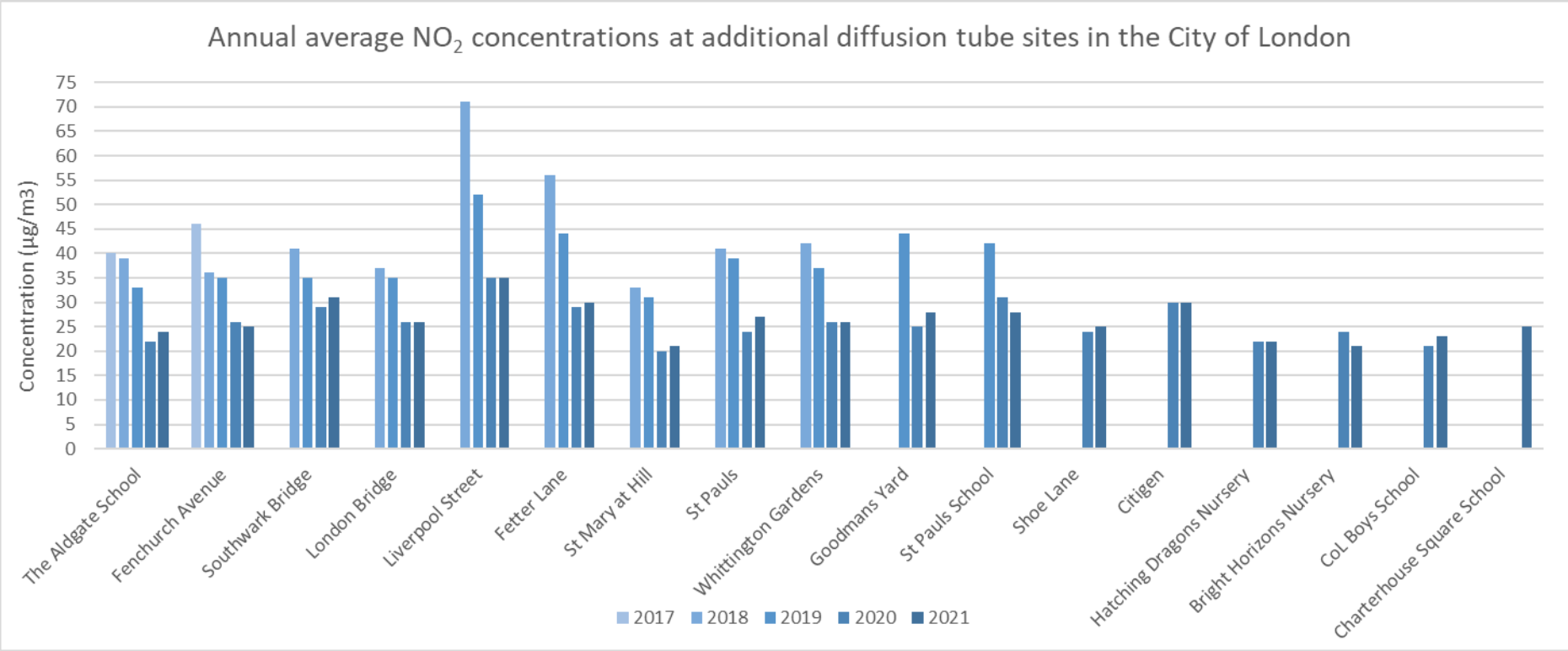
Low Emission Neighbourhood Area

Monitoring commenced in the City Low Emission Neighbourhood (LEN) area around the Barbican at the end of 2017 to measure the impact of the project during its delivery and in the years following its completion. NO_2 concentrations in the area vary however all sites in the LEN area have had a reduction in NO_2 concentrations over the past 5 years and all met the annual objective for a second year running in 2021. Compared to 2020, the majority of sites had a slight decrease or remained the same in concentration in 2021. Only 2 sites, LEN 6 Whitecross/Beech Street and LEN 9 London Wall/Brewers Hall, observed slight increases in concentration.



Other Monitoring Sites

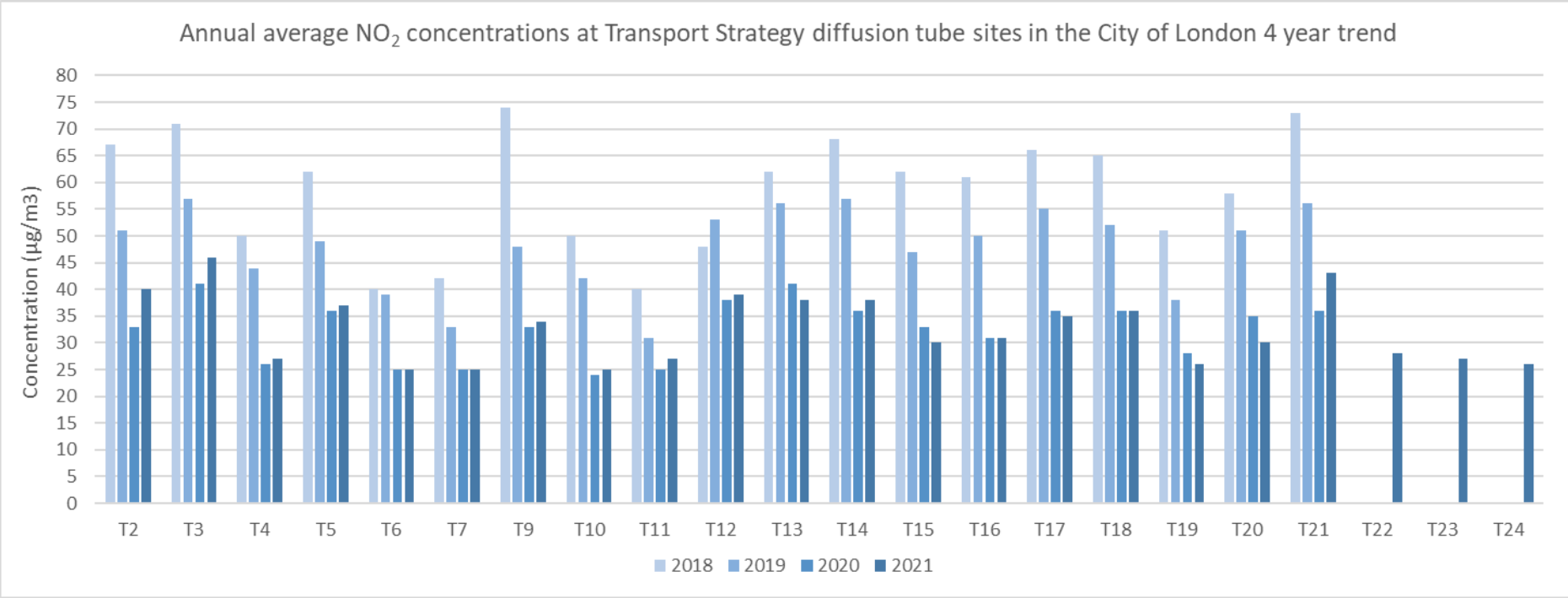
Since 2017, diffusion tubes have continuously been deployed to monitor the NO_2 pollution levels at new locations as need arises at each site. Data has been plotted in accordance with how many years a site has been operational, where there is at least 2 years of data, and shows how pollution levels vary across the site locations. Since 2019, all but two of the sites have been within the 40µg/m^3 annual limit. All sites came within the annual limit in 2020 and have remained that way in 2021.



Transport Strategy Monitoring sites

Extra diffusion tubes were deployed in 2018 to fill the gaps in the monitoring network to measure the impacts of the City of London's first Transport Strategy, which was adopted in May 2019. All sites monitored are roadside sites and all have had reductions in NO_2 concentrations over the past 4 years, some significantly. For example, T9 150 Bishopsgate has reduced by 54% since 2018. In 2021, 10 sites increased slightly with the largest increase being seen at T2 Byward Street and T21 North Old Baily,

both increasing by 7 µg/m^3 ; 4 sites stayed the same and 5 sites decreased slightly since 2020.



Beech Street sites

Diffusion tubes were installed on Beech Street and the surrounding City of London and Islington roads in 2019 to establish NO_2 pollution concentrations prior to and during the experimental 18-month closure of Beech Street to all but zero-emission capable traffic. The scheme began in March 2020 and ended in September 2021. From 2021, all tube locations in the City have showed a decrease in NO_2 concentration. However, all 6 main road sites increased in concentration from 2020 to 2021, whilst of the two quieter road sites, one site remained the same and one decreased in concentration by 1µg/m^3.

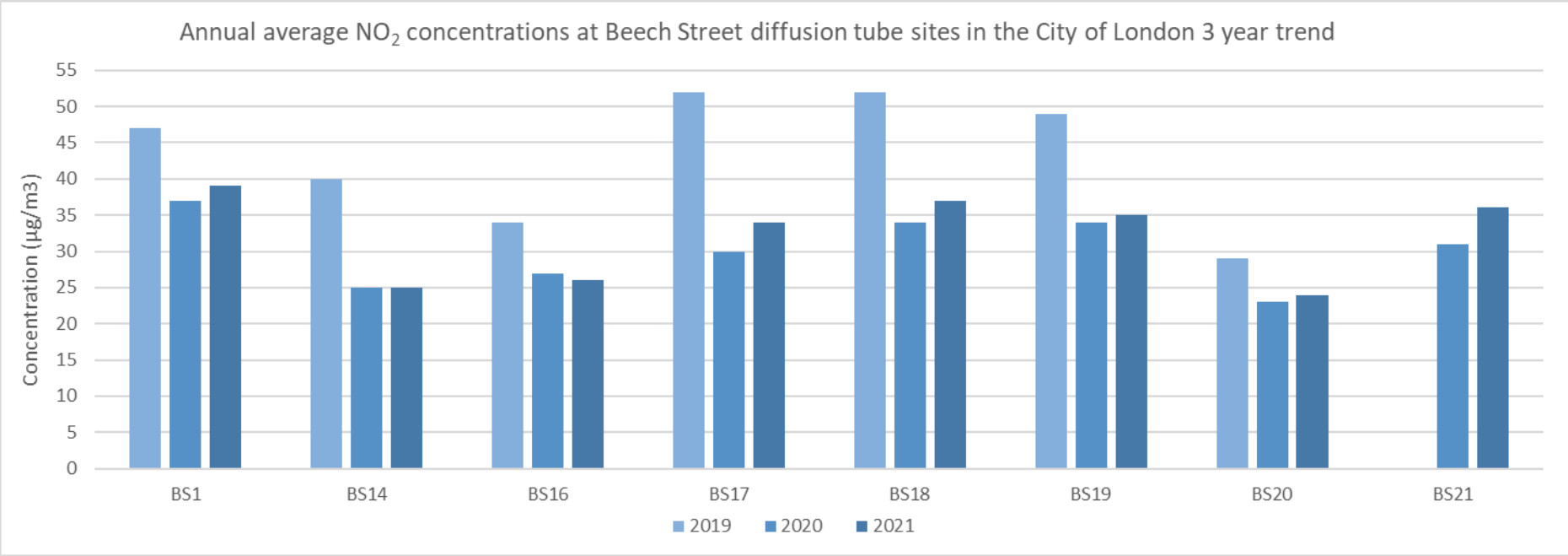


Table E. NO_2 Automatic Monitoring Results: Comparison with 1-hour Mean Objective, Number of 1-Hour Means > 200 µg m^{-3}

Site ID	Valid data capture for monitoring period %([a])	Valid data capture 2021 %([b])	2015	2016	2017	2018	2019	2020	2021
CT3 (Aldgate School)	N/A	97	0	0	0	0	0	0	0

Site ID	Valid data capture for monitoring period %([a])	Valid data capture 2021 %([b])	2015	2016	2017	2018	2019	2020	2021
CT4 (Beech St)	N/A	85	**212**	**144**	**67**	**27**	7	0	0
CT 6 (Walbrook)	N/A	96	**203**	**145**	**126**	**37**	15	0	0

Notes

Results are presented as the number of 1-hour periods where concentrations greater than 200 µg m^{-3} have been recorded.

Exceedance of the NO_2 short term AQO of 200 µg m^{-3} over the permitted 18 hours per year are shown in **bold**.

If the period of valid data is less than 85%, the 99.8th percentile of 1-hour means is provided in brackets.

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

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

7 Year Trend:

Unlike diffusion tubes that provide annual averages, automatic analysers provide hourly data that can be used to assess compliance with the health based hourly average target. Both roadside sites (CT4 and CT6) have declined in hourly exceedances over the past 7 years, from a very high number of exceedances at CT6 and CT4 in 2015, to all sites meeting the objective for the first time in 2019, and then for all sites not having a single hour over the 200µgm^{-3} limit in 2020, remaining that way in 2021.

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

Site ID	Valid data capture for monitoring period %([a])	Valid data capture 2021 %([b])	2015	2016	2017	2018	2019	2020	2021
CT3 (Aldgate School)	N/A	96	23	24	23	21	19	16	16
CT4 (Beech St)	N/A	97	28	25	23	24	22	18	15
CT8 (Upper Thames St)	N/A	70	**41**	35	32	32	27	24	19

Notes

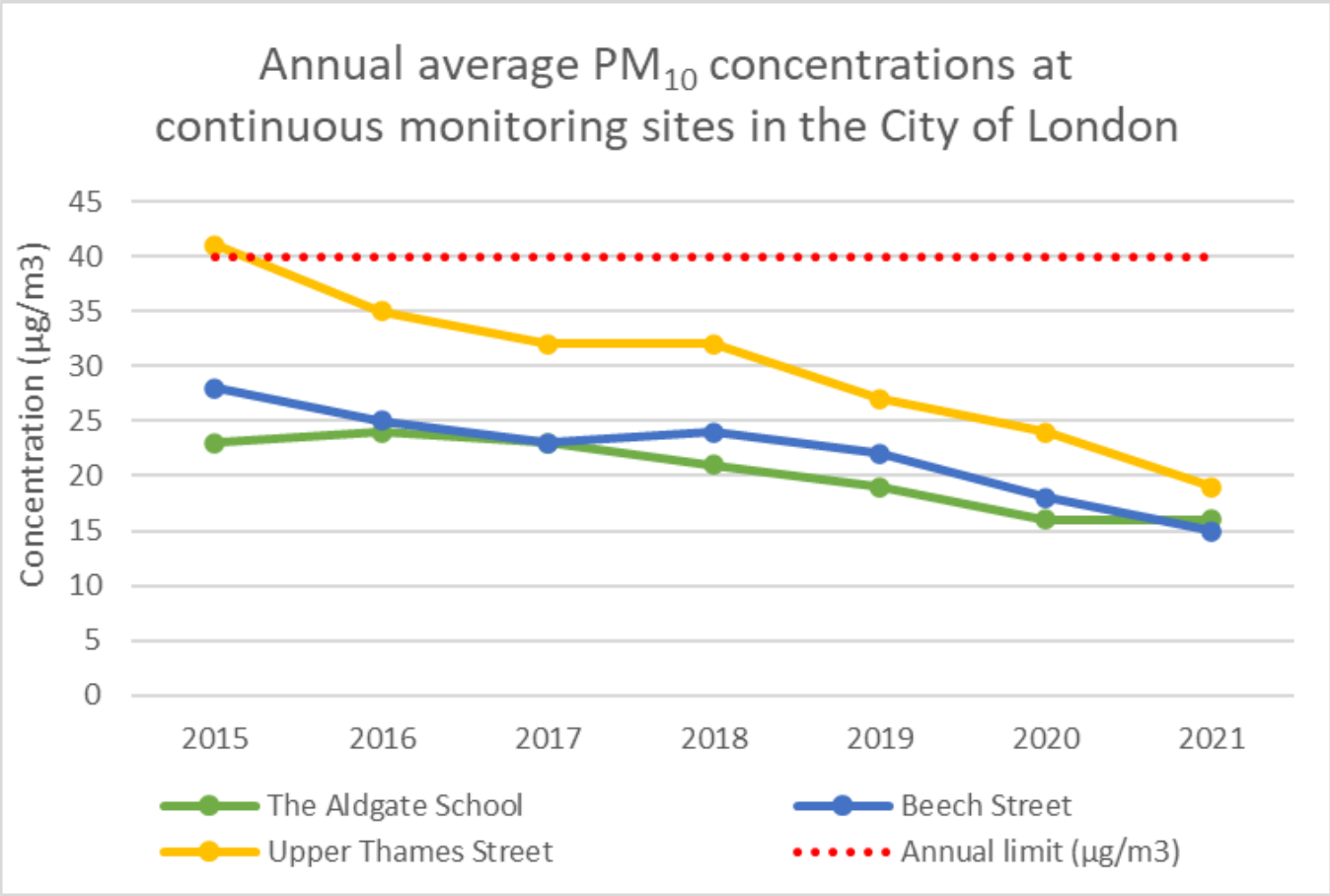
The annual mean concentrations are presented as µg m^{-3}.

Exceedances of the PM_{10} annual mean AQO of 40 µg m^{-3} are shown in **bold**.

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

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

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



7 Year Trend:

There has been an overall reduction in PM_{10} levels at all sites over the past 7 years. Slight increases in concentrations were seen at roadside sites in 2018 however these reduced again in 2019.

All three sites had a reduction in PM_{10} concentrations in 2020 from the previous year and roadside sites reduced further in 2021. All sites meet the current legal objectives.

Table G. PM_{10} Automatic Monitoring Results: Comparison with 24-Hour Mean Objective, Number of PM_{10} 24-Hour Means > 50 µg m^{-3}

Site ID	Valid data capture for monitoring period %[(a)]	Valid data capture 2021 %[(b)]	2015	2016	2017	2018	2019	2020	2021
CT3 (Aldgate School)	N/A	96	3	11	8	3	7	1	1
CT4 (Beech St)	N/A	97	17 (41)	16	8	9	6	2	0
CT8 (Upper Thames St)	N/A	70	**72**	**45**	30	25	14	9	6

Notes

Exceedances of the PM_{10} 24-hour mean objective (50 µg m^{-3} over the permitted 35 days per year) are shown in **bold.**

Where the period of valid data is less than 85% of a full year, the 90.4th percentile is provided in brackets.

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

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

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

Site ID	Valid data capture for monitoring period %[(a)]	Valid data capture 2021 %[(b)]	2015	2016	2017	2018	2019	2020	2021
CT2 (Farringdon)	N/A	41	22/17**	16**	16	16	14	12	12
CT3 (Aldgate School)	N/A	90	-	15	14	12	12	12	11

Notes

****January-August 2015 (non-reference equivalent) / August-October 2015 (reference equivalent) site closed after October 2015 and relocated in July 2016**

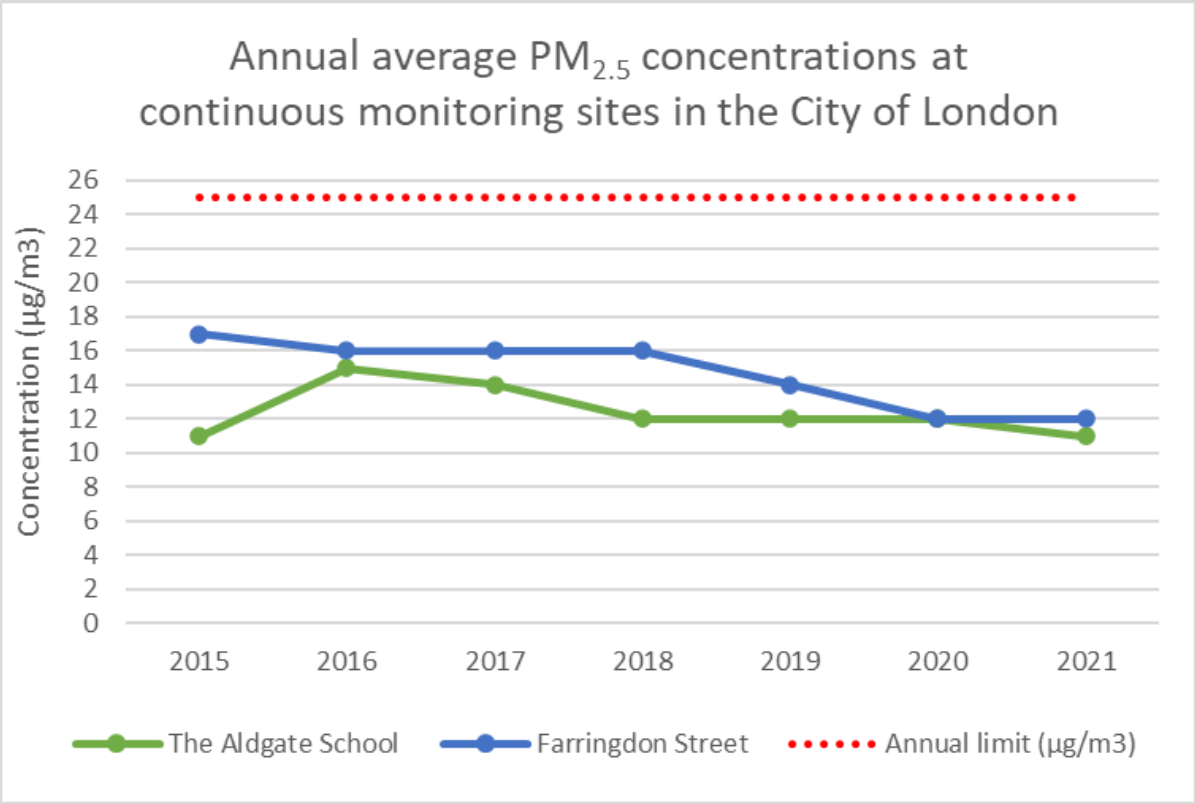
The annual mean concentrations are presented as µg m^{-3}.

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

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

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

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



7 Year Trend:

The Farringdon monitoring site has shown an overall decline in $PM_{2.5}$ concentrations over the past 7 years.

A new EU reference equivalent BAM was installed in August 2015, but was taken offline in October 2015 due to the Cycle Superhighway Works; therefore data capture is reduced for 2015 (and 2016) and two values are provided to separate the data for two monitoring methods; the 2015 data has not been annualised due to the number of changes at this site.

The reference equivalent BAM was re-installed in July 2016 in a slightly changed location, approximately 30m north of the Junction, still kerbside. The monitor at The Aldgate School recorded a small decrease in concentrations from 2016 to 2018 and then has stayed at the same level to 2020 and reduced slightly in 2021. The data for both sites is below the objective but exceeds World Health Organisation Guidelines.

2. Action to Improve Air Quality

2.1 Air Quality Action Plan Progress

Table J provides a summary of City of London's progress against the Air Quality Action Plan, showing progress made this year.

Table J. Delivery of Air Quality Action Plan Measures

Measure	LLAQM Action Matrix Theme	Action	Progress
1	Ensure that adequate and appropriate monitoring is undertaken across the City of London to fulfil statutory obligations and make good quality data available to the public.	NO_2, PM_{10} and $PM_{2.5}$ monitoring will continue using continuous analysers at 4 locations as a minimum. NO_2 diffusion tube monitoring will take place at 50 locations as a minimum. Support monitoring by our collaborators	The City Corporation has two $PM_{2.5}$, three PM_{10} , one ozone and three NOx continuous analysers. All sites are serviced and audited in line with national guidance. The data is ratified by Imperial College London and made available to the public at www.londonair.org.uk. As part of the ongoing maintenance and management of automatic equipment, and to ensure resilience, one TEOM PM_{10} analyser was replaced in 2021 with a new BAM. During 2021, we measured nitrogen dioxide at 105 locations using diffusion tubes.
2	Use air quality data to generate pollution alerts and messages using a range of media such as the free CityAir Smart Phone App.	Monitoring data will be used effectively to generate alerts for the smart phone app and tailored alerts for vulnerable people.	The air quality monitoring data is used to provide current information on air quality through the City Corporation CityAir App. It is also used to support the AirTEXT service.
3	Publish an annual report of air quality data on the City Corporation web site.	Annual reports will be produced for compliance with statutory obligations, demonstrating how air pollution compares to health-based Limit Values and WHO Guidelines and demonstrating how pollution has changed over time.	The 2020 Annual Status Report is available on the City Corporation website: www.cityoflondon.gov.uk/air This report will also be made available on the web site.

Measure	LLAQM Action Matrix Theme	Action	Progress
4	Continue to make live data from continuous air quality monitors available to the public on the London Air Quality Network web site.	Kings College London will be commissioned to undertake independent checks of air quality data and make the data freely available to the public, consultants, and academics as part of a London wide resource.	Data from all continuous analysers is available on the London Air Quality Network web site www.londonair.org.uk. This is managed by Imperial College London.
5	Support the testing of new air quality sensors to establish their degree of accuracy.	Support the testing of one new sensor per year. Work with partners on a standardised framework to improve comparability of results.	The AirNode sensor being trialled at Aldgate School was replaced in 2021. It is a low-cost, low-power, compact ambient air monitoring device. It measures temperature, humidity, CO2, NO2, ozone, PM1, PM2.5, PM4 and PM10.
6	Undertake an annual assessment of air quality to ensure levels of nitrogen dioxide in 90% of the Square Mile meet health-based Limit Values and World Health Organisation Guidelines by 2025	Source funding to undertake annual air quality forecasts to ensure Limit Values and WHO Guidelines will be met by 2025. If it looks like limits will not be met, develop additional action plan for approval.	An area compliance assessment was undertaken for the year 2020, which was the latest year with a completed set of ratified data. The area of the Square Mile to comply with the nitrogen dioxide limit value and WHO guideline in 2020 was 93%, this is a vast increase from 2019 when it was 67%. This figure was calculated using air quality modelling, calibrated with all of the monitoring data collected across the Square Mile. The resolution of the output is $1m^2$.
7	Continue to place air quality as an important political priority and support the outcomes of the City Corporate Plan and local and London-wide action.	Host at least one London wide event per year for relevant air quality organisations. Arrange meetings with relevant policy and research bodies.	A London Borough's 'Sharing Best Practice in Air Quality' event was held via Microsoft Teams in March 2021. 4 councils shared recent air quality projects they had undertaken. Air quality / environmental officers and Councillors from all 33 London Local Authorities were invited, with around 50 attendees. Meetings were held with Defra officers to potential options for new powers for local authorities to manage emissions from non-transport sources of pollution. A meeting was also held with UK100 to gain their support.

Measure	LLAQM Action Matrix Theme	Action	Progress
			Officers attended Defra workshops on the new Environment Act and responded to consultations relating to the provisions of the new Act.
8	Provide information on reducing emissions from buildings for City Corporation facilities managers and investment property managers.	Develop on-line resource Deliver annual lunchtime workshops for at least 80% of Facilities Managers.	A guidance document '*Combustion plant: Recommendations for best practice'* is available on the City's Air Quality webpages. When first produced, a webinar was held to explain the Combustion plant guidance for facility managers. The recording of this webinar has been converted to an educational video, available to view on YouTube via a requested link.
9	Reduce emissions of air pollutants from buildings owned by the City Corporation.	Undertake energy audits of City Corporation buildings. Reduce emissions of NOx from large buildings by at least 3% per year.	Energy Audits were completed in 15 buildings. Gas usage increased by 5% from the previous year – this was due to buildings opening back up after the main phase of the pandemic. 100% of the electricity used by the City Corporation is from renewable sources.
10	Review the provision of electric vehicle charging across City Corporation sites including residential estates.	Assess the requirement for electric vehicle charge points. Make recommendations for the installation and use of charge points to meet residents' requirements. Source funding for additional charging infrastructure.	Baynard House EV charge points are expected to be available from early Summer 2022. This has been partly delayed by pandemic working restrictions. Identification of further 4/5 on-street rapid charging sites is in progress and should be put to market tender in 2022. Barbican car parks have installed new EV charge points in 2021; new charge points in further DCCS estate planned, subject to funding (2022/23).
11	Ensure that, subject to operational requirements, 100% of vehicles owned or leased by the City Corporation are electric or hybrid by 2025.	Use the Responsible Procurement Strategy and Transport Coordination Group to ensure this target is met subject to suitable vehicle availability.	The following vehicle purchasing hierarchy is implemented: fully electric; plug in hybrid; petrol hybrid, Euro VI petrol; Euro VI diesel.

Measure	LLAQM Action Matrix Theme	Action	Progress
			We continue to reduce the size of our fleet and expand the number of electric vehicles. We currently have 22 fully electric or hybrid vehicles. Five fully electric refuse collection vehicles are now used in our refuse collection contract. 20 new electric vehicle charge points have been installed to support our vehicles. 100% of the electricity used by the City Corporation is from renewable sources, so electricity used to charge corporate vehicles is not contributing to air pollution outside the City of London boundary.
12	Continue to trial low and zero emission technology.	Take all opportunities to trial and evaluate at least one new low and zero emission vehicle per annum.	The trial of the all-electric refuse collection vehicles led to the purchase of 5 all electric RCVs for the refuse collection contract.
13	Continue to encourage zero emission vehicles through the supply chain.	Apply the menu of options in the Responsible Procurement Strategy to assist in reducing air pollution to major contracts. Review the menu of options biannually.	The Corporate refuse contract has: 5 Electric RCV's 5 Electric Sweepers 4 Electric Groupil small cages 7 Mitsubishi Canter Hybrid Cages.
14	Require electric or hybrid vehicles as a default for the corporate taxi contract, together with annual emission reduction targets	When the Corporate taxi contract is renewed, stipulate a requirement for low and zero emission vehicles as default, with emission reduction targets applied.	The taxi contract is yet to be renewed.
15	Require zero emission and electric or hybrid vehicles as a default for courier contracts, together with annual emission reduction targets	When the courier contracts are renewed, stipulate a requirement for zero and low emission vehicles as default, with emission reduction targets applied.	For deliveries within 5 miles, the Courier Contract requires the use of zero emission transport e.g. cargo bikes. The contract for national and international parcels requires the use of safe,

Measure	LLAQM Action Matrix Theme	Action	Progress
			low-emission and zero emission modes of transport wherever possible.
16	Continue to ensure that all relevant corporate strategies and policies reflect the importance of improving local air quality and reducing exposure.	All existing strategies will be assessed for actions to assist in improving air quality and reducing exposure. Further measures will be included in corporate strategies when they are reviewed.	The air quality team works very closely with a number of other teams to air quality is considered in decision making. This includes Planning, Transportation, Public Realm, Highways, Recycling and Waste, Open Spaces, Procurement, Remebrancers, Public Health, Climate Action, and Fleet Management. Following a Corporate restructure, the team is now part of a wider Environment Department which was partly devised to enhance collaboration.
17	Work with London Councils and other stakeholders to develop proposals for legislation to help improve air quality across London.	Agree proposals for a Private Members Bill with London Councils. Coordinate proposals with the Greater London Authority and other bodies. Support the passage of the Bill through the House of Lords.	The Emission Reduction (Local Authorities in London) Private Members Bill was introduced to the House of Lords by Lord Tope in October 2019, and again in January 2020. The Bill, which is supported by London Councils, has not been selected for a second reading to date, but has been used to influence discussions with Defra officials about the provision of new powers to assist London local authorities with obligations under the Environment Act 2021. Several meetings with Defra took place throughout the year to discuss options for new powers
18	Continue to work closely with the Greater London Authority and Transport for London on policies to improve air quality and ensure that all actions support the aims and objectives of the Mayor's Environment Strategy.	Ensure actions within this Strategy support the Mayor of London's activities and the requirements of LLAQM. Undertake air quality improvement projects with the support of the Mayor's Air Quality Fund. Support the activities of the Mayor of London Air Quality Department.	The following Mayor's Air Quality Fund projects came to a close in March 2022: • Pan London Idling Action Project, jointly managed with the London Borough of Camden • City Cluster Zero Emission Zone • Clean Air Thames project with Cross River Partnership and the Port of London Authority

Measure	LLAQM Action Matrix Theme	Action	Progress
			• Non-Road Mobile Machinery enforcement project, led by the London Borough of Merton • Healthy Streets Everyday project, led by the London Borough of Islington
19	Continue to collaborate with London Boroughs and London Councils on action to improve air quality.	Provide air quality advice to London Councils. Chair four meetings per annum of the London Air Quality Steering Group. Host four meetings per annum of the central London Air Quality Cluster group.	We hosted and chaired four virtual meetings of the London Air Quality Steering group. These were attended by representatives from the Greater London Authority, Environment Agency, London Councils, Public Health England, and Lead Air Quality Cluster co-ordinators. We have attended, and chaired in turn, quarterly Central London Cluster group meetings throughout 2021, providing City of London updates as called upon and receiving updates from other Central London Boroughs and the GLA.
20	Support Universities with research into the health impacts of air pollution, to increase understanding of the sources of pollution and the effectiveness of interventions to reduce pollution.	Support research on impact of building form on wind patterns and pollution concentrations. Support an air quality dissertation through Dissertations for Good. Support other research projects as and when required. Source funding to support London Universities with research for dealing with air pollution in urban areas.	We are a member of the Clean Air Futures Research Group which is mapping out the future research and evidence requirements of air pollution. It was convened by the UK Clean Air Champions to help to shape the future research agenda and supports the joint UK Research and Innovation and Met Office Strategic Priorities Fund Clean Air Programme. Meetings have been held on: • the requirements of portable sensors • creating a pathway towards the new WHO Guidelines • the research required to understand and track inequalities and vulnerabilities in air pollution exposure.
21	Continue to support the Third Sector to deliver air quality improvement projects and raise	Judge the Sustainable Transport Category of the Sustainable City Awards.	We provided a representative for the judging panel for the 2022 Sustainable City Awards.

Measure	LLAQM Action Matrix Theme	Action	Progress
	awareness amongst London's communities.	Support the work of Environmental Protection UK with events, meeting space and administrative support.	We supported three Environmental Protection UK Air Quality Committee meetings and three Trustee meetings. We prepared consultation responses for the Air Quality Committee and provide the lead for legislation for the group.
22	Support the Port of London Air Quality Strategy through air quality monitoring and in taking wider action to reduce emissions from vessels on the river Thames.	Monitor air pollution along the river. Source funding to support the PLA to pilot measures to reduce emissions from vessels using the river.	Nitrogen dioxide monitoring continues at two locations adjacent to the river – Southwark Bridge and London Bridge. We completed a three-year programme with the Port of London Authority on a Clean Air Thames project to trial engine emission retrofit on river vessels. The project was led on our behalf by Cross River Partnership. We provided air quality comments on the Thames Vision 2050 consultation.
23	Continue to support the Cross-River Partnership in its delivery of air quality projects in central London.	Provide the co-chair for CRP and take part in joint projects.	The City Corporation provided the co-chair for Cross River Partnership and has worked in partnership with the organisation on the Clean Air Thames Project and Healthy Streets Everyday Defra funded project. For the Clean Air Thames project, 2 operators installed SCR systems onto their vessels. Preparations are in hand to enable post-retrofit monitoring, and to demonstrate the air quality benefits accruing from this programme of works. Clean Air Thames featured in the Cross River Partnership webinar series, Lunchtime Launch, The Future of Sustainable Shipping and Trade in London. The project also featured in Air Quality News in August. https://airqualitynews.com/2021/08/19/new-project-will-monitor-pollution-on-river-thames/
24	Continue to support the Environment Agency with action to improve air quality, including the implementation of the	Source funding to undertake a survey of combustion plant in the City of London.	We have collated data from a range of sources to compile a list of combustion plant in the Square Mile. This data was used to

Measure	LLAQM Action Matrix Theme	Action	Progress
	Medium Combustion Plant Directive.	Support the implementation of the Medium Combustion Plant Directive through the provision of information where available and review of permits where required.	inform research into the sources of $PM_{2.5}$ in the Square Mile. We will continue to update this resource. We responded to 1 consultation on a Medium Combustion Plant permit.
25	Continue to engage with and support the Business Community to become Air Quality Champions and reduce their impact on local air pollution.	One on one business engagement through the CityAir scheme. Run at least one Air Quality Business event per year. Engage with intermediary groups who work with small businesses to raise the profile of air quality. Work with the Cheapside Business Alliance (CBA) to raise the profile of air quality and obtain support for action to reduce emissions associated with the CBA member activities.	We continued to engage with the City Business community through our CityAir programme. We engaged one-to-one with 5 City businesses who had expressed interest in signing an Air Quality pledge relevant to their strategy commitments and current/future planned projects to reduce emissions and raise awareness. In January 2021, we collaborated with New London Architecture and the City Centre to run a successful and well attended breakfast seminar for businesses, providing advice for employees on reducing emissions whilst homeworking. In September, we collaborated with Clean City Award Scheme (CCAS) to run a lunchtime event for businesses addressing Car Free Day and promoting our CityAir Business Engagement programme and the Air Quality Pledge. We also partnered with CCAS on the delivery and judging of the 'Air Quality and Climate Change' award for the second year, receiving a higher number of applications for the award than the previous year. Through this partnership we continued to share our air quality resources for businesses with a wider network. We continue to support Cheapside Business Alliance, and have an air quality representative on their Environment, Signage and Wayfinding Steering Group.
26	Support the Mayor of London with the effective implementation of the Ultra-Low Emission Zone.	Publicise the ULEZ amongst local businesses, City Corporation departments and markets.	We are continuing to strive towards 100% ULEZ compliance, operating a 'Transition to Zero Emission Fleet policy', a decision-making hierarchy which applies to all purchased, leased, and hired vehicles operated by the City Corporation.

Measure	LLAQM Action Matrix Theme	Action	Progress
		Ensure City Corporation fleet of vehicles meet the ULEZ criteria.	
27	Work with the taxi industry to reduce empty running of taxis within the Square Mile.	Explore what practical action can be taken to reduce empty taxi running.	No engagement has taken place with the taxi industry due to the COVID19 pandemic
28	Urge Transport for London to prioritise Zero Emission Capable buses on routes through the City of London.	Work with TfL on their programme of upgrades to cleaner buses and review of routes.	All buses that run through the City are either zero emission, hybrid and meet Euro VI emission criteria.
29	Ensure that Healthy Street Plans have air quality improvement targets and that the air quality impact of major transport and public realm schemes are measured.	Healthy Streets plans will have air quality KPIs. Road schemes will be assessed for local air quality impact when there are proposed changes.	All major road schemes are assessed for air quality impacts. Air quality is factored in as a key objective to all Healthy Street Plans. Wide scale air quality monitoring is continuing to assess the impacts of the Bank on Safety/ All Change at Bank project and the Beech Street pilot zero emission street and the wider Transport Strategy.
30	Introduce Local Zero Emission Zones by 2022.	Introduce local ZEZs covering the Barbican and Golden Lane and Eastern Cluster.	The two proposed ZEZs are on hold and will be reviewed once transport and air quality impacts of COVID-19 are better understood; along with outcomes of Healthy Streets Plan and traffic management measures on Bishopsgate (TfL scheme)
31	Implement a wide range of action through the City Corporation Transport Strategy to reduce the exposure of pedestrians to transport generated air pollution in the Square Mile.	Increase in the number of pedestrianised, or pedestrian priority streets. Widen pavements. Reduce the amount of time people wait for a green signal to cross the road. Improve specific walkways such as the riverside walkway and Barbican High-Walk.	Measures to improve the amount of pedestrian priority and cycle space - Key progress in 2021/22 includes: • All Change at Bank detailed design and options for public realm elements went to public consultation in May 2021. Statutory consultation on traffic orders for further traffic management measures took place at the end of 2021. The decision on these will be considered by the Streets & Walkways sub-committee in May. • Healthy Streets minor schemes at Fann Street and Brackley Street have been completed providing

Measure	LLAQM Action Matrix Theme	Action	Progress
		Improve awareness of traffic free walking routes. Timed and temporary street closures Car free days. Lunchtime Streets – at least 5 to be in operation by 2025. Complete Legible London maps and directional signs.	raised carriageway crossings. Accessibility improvements were also completed at Playhouse Yard and Mitre St/Creechurch Lane. • Charterhouse school street restrictions were agreed and developed with the school and implemented on an experimental basis after the 2021 Easter break. • Modelling and option development of traffic management measures to remove the St Paul's gyratory system and Museum of London roundabout, in association with development opportunities in the area. • Transitioning remaining Covid-19 measures into the first phase of the Pedestrian Priority Programme using Experimental Traffic Orders. • Commencing on the Healthy Streets Plans to identify traffic management and public realm options and opportunities for the Fleet Street and Temples and the Barbican and Golden Lane areas. • Substantive completion of the first phases of the Moorgate Crossrail integration works, including walking improvements and surrounding public realm. • Liverpool Street Crossrail integration Phase 1 substantially complete and remaining construction tasks and unspent funds transferred to Phase 2 for development in 2022. • Globe View walkway construction programme and design was finalised ready for construction. • Completing Barts Close public realm improvements. • Substantially completing 150 Bishopsgate public realm improvements.

Measure	LLAQM Action Matrix Theme	Action	Progress
			• Middlesex Street (Petticoat Lane Market) public realm and market enhancement works at the northern section of Middlesex Street are nearing completion. Design work for the central section has commenced. • Cool Streets and Greening Programme delivered two small scale projects (Riverside planters and Vine St trees). Four larger projects have been designed in 2021/22 and are due to be implemented in 2022 (including Greening Cheapside and Bevis Marks SuDs).
32	Pilot an ultra-low emission vehicle street.	Assess the feasibility of piloting an ULEV access restriction to inform the development of Zero Emission Zones as part of the City Corporation Transport Strategy. Subject to the outcome of the feasibility study, pilot an ULEV street.	Beech Street zero emission street pilot went live on the 18th of March 2020 under an experimental traffic order. Nitrogen dioxide levels In Beech Street reduced significantly from 62μgm^{-3} in 2019 to 29 μgm^{-3} in 2020. However, as the national lockdown began soon after the scheme began and traffic and pollution levels reduced, it is difficult to quantify the impacts of the scheme separately to those of the lockdown. The NO2 levels remained low in 2021 at an annual average of 31 μgm^{-3} Due to the traffic management order expiring in September 2021 the scheme has now ended however we will be consulting in summer / autumn 2022 on whether to reinstate the scheme permanently.
33	Assess the suitability of rolling out LEN pilot projects at other locations across the Square Mile.	Commission a legacy report to establish the most cost-effective interventions. Source funding to roll out cost effective interventions.	The Low Emission Neighbourhood Legacy report was completed and effective measures that were identified have been incorporated into a range of operations.

Measure	LLAQM Action Matrix Theme	Action	Progress
34	Implement a wide range of action, through the City Local Plan and the City Corporation Transport Strategy, and Freight and Servicing SPD to reduce emissions from freight vehicles in the Square Mile.	Introducing a freight consolidation service for the city. Delivering two last mile logistics hubs Producing a Servicing Action Plan Identifying opportunities to increase the use of the river for freight including exploring the use of Blackfriars and Tower Piers and a reinstated Swan Lane Pier. Require all development in the city to consider the use of the river for the movement of construction material and waste	We are securing an operator for a last mile logistics hub at London Wall car park and progressing approvals for area fit out. Study completed by consultant (Bearing Point) to assess requirements and feasibility for consolidation, and refresh freight industry requirements for last mile delivery. Further work with neighbour boroughs and the GLA to identify locations.
35	Implement a range of actions through the City Corporation Transport Strategy and City Local Plan to support and encourage cycling.	Conduct a City-wide cycle parking review and publish a Cycle Parking Delivery Plan that will detail our ambitions for increasing the amount of cycle parking in the city. Ensure new developments provide secure cycle parking facilities including for non-standard cycles, cargo bikes, hand carts and visitor cycle bays. Promote cycling through improving awareness, support London-wide and national campaigns and explore the potential for an annual City Corporation cycling festival. Work with TFL and cycle providers to improved cycle hire provision.	40 trial cycle parking spaces have been converted to permanent cycle parking, 26 trial cycle parking spaces have been retained for further consideration. In addition, 80 new permanent cycle parking spaces have been added. Identification of new sites for dockless bays was completed in February 2022. During all of August and September the campaigns team ran a Lunchtime Streets programme in partnership with Cheapside BID and Fleet Street Quarter partnership. These ran in two locations on every Wednesday and Thursday, in Carter Lane and Cheapside, with musicians and promotions for cycling and walking. This included cycle roadshows with City of London Police. Work was finalised on the Bevis Marks experimental cycle lanes at the beginning of 2022.

Measure	LLAQM Action Matrix Theme	Action	Progress
		Apply a minimum cycling level of service to all streets initially by reducing motor traffic volumes to below 150 vehicles per hour or Protected cycle lanes that are a minimum of 1.5m wide per direction of travel along a core cycling network.	
36	Install additional publicly accessible electric vehicle (EV) rapid charge points by 2025	An EV Charging Action Plan will be published by December 2019. This will identify how many charge points, including charging hubs, are required up to 2022, as well as longer-term forecasts. Locations to be identified through engagement with the Transport for London Electric Vehicle Infrastructure Taskforce. Install a rapid charging hub for taxis in Baynard House car park Install a taxi only rapid charge point in Noble Street rest rank	Baynard House EV charge points are expected to be available from early Summer 2022. Identification of further 4/5 on-street rapid charging sites is in progress and should be put to market tender in 2022. Barbican car parks have installed new EV charge points in 2021; new charge points in further housing estates planned, subject to funding (2022/23).
37	Through the City Local Plan require the installation of rapid charge points in new developments.	Apply the requirements of planning policy and the Freight and Servicing Supplementary Planning Document.	We ensure that electric vehicle charging facilities are installed in accordance with our parking and servicing standards.
38	Ensure that improving air quality and reducing exposure is an integral part of all major transport and public realm schemes and that all schemes incorporate greening where possible.	Air pollution will be modelled and measured as part of all major transport and public realm schemes. Incorporating greenery and planting when making changes to streets and the public realm.	All major transport and public realm schemes are reviewed for air quality impacts and air quality monitoring and modelling is carried out were necessary. Air quality modelling and monitoring was carried out for the Beech Street Zero Emission Street pilot. Air quality continues to be monitored at numerous locations around Bank Junction to assess the impact of the ongoing changes there. The next phase of changes to Bank includes more pedestrianisation and greening, plans were developed in

Measure	LLAQM Action Matrix Theme	Action	Progress
			2020 and went out for consultation in spring 2021. A report is going to committee on the 31st of May and if approved the works shall commence in autumn 2022.
39	Continue to take a wide range of action to discourage unnecessary vehicle engine idling in the Square Mile.	Run at least 3 Cleaner Air Action Days throughout the year. Review options for enforcement. Jointly lead the Pan London Idling Action project. Respond to complaints and erect signs in hot spot areas.	Idling Action events were put on hold due to the impact of the Covid 19 pandemic. Enforcement options were reviewed and in 2020, we introduced the provision to issue a Penalty Charge Notice for the offence of unnecessary engine idling. This was done using a Traffic Management Order. Due to the impact of the pandemic, lack of traffic in the City and social distancing requirements the provision continued to be put on hold in 2021 and has since gone live in 2022. No FPNs/PCNs were issued for idling in 2021. The City Corporation continued to jointly lead the Pan London Idling Action Project with the London Borough of Camden in 2021. In 2021 we ran 2 bursts of the Idling Action advertising campaign comprising 4 campaign images for 'Out of Home' and social media, a radio advert, digital adverts, and a short video. The campaign ran in Feb 2021 and November 2021. We procured consultants to continue with the Idling Action school workshops and idling action events to compensate for the loss of project officers and continued to support boroughs in adopting enforcement and training their fleets. Action is taken following complaints of vehicle engine idling, and signs erected, and letters sent where necessary. The number of complaints in 2021 was very low.

Measure	LLAQM Action Matrix Theme	Action	Progress
40	Ensure City Corporation parking charges favour low and zero emission vehicles in the City of London.	Differential parking charges applied with the lowest level of charges being applied to zero and low emission vehicles such as electric, hydrogen and hybrid.	A review was undertaken in 2020 to ensure tariffs remained in line with both the Transport Strategy and Air Quality Strategy, in particular discouraging unnecessary car usage in general, and supporting the use of zero emission vehicles, where other modes of transport are not possible. On-street parking charges are based on vehicle emissions. Older, more polluting vehicles pay a higher charge to park on street in the City of London. Electric or hydrogen or hybrid pay the lowest tariff. The charge for vehicles which are Zero Emission Capable is £4 per hour. Petrol vehicles that meet Euro 4 emission criteria and diesel vehicles that meet Euro 6/VI are charged £5.20 per hour. Older vehicles are charged £6.80 per hour. The charging framework supports the Mayor of London Ultra Low Emission Zone scheme.
41	Continue to assess all planning applications for air quality impact.	Review all planning applications and make recommendations for conditions as required. Require air quality assessments for major developments. This includes all fixed plant, boiler and emergency generators, and transportation sources including delivery and servicing.	All planning applications are reviewed for air quality impacts, with conditions recommended where necessary. All major developments require an air quality assessment. This has been incorporated into the draft new Local Plan and will be included in the Air Quality Supplementary Planning Document update. The pre app guidance for air quality was updated and standard conditions for planning applications reviewed and updated to reflect the latest version of the London Plan

Measure	LLAQM Action Matrix Theme	Action	Progress
42	Encourage the use of non-combustion technology during construction and in the operation of new developments.	Developers required to identify suitable non-combustion/zero emission technologies such as heat pumps. BREEAM maximum pollution credits for local air quality to be obtained from non-combustion systems where possible.	The Draft City Plan process has been paused so that more evidence can be gathered. The Draft Plan is now referred to as the City Plan 2040 to align with the commitment in the City Corporation's Climate Action Strategy to support the achievement of net zero for the Square Mile by 2040. It reflects the London Plan in prioritising non combustion and zero emissions heating and energy systems. Once the City Plan 2040 is finalised, we will produce an updated Air Quality Supplementary Planning Document. The update will prioritise zero emissions heating and will include BREEAM maximum pollution credits for local air quality to be obtained from non-combustion systems where possible. All planning applications are reviewed by air quality officers to ensure planning policies are being adhered to and if combustion plant is proposed the developers are asked to reconsider their plans.
43	Apply stringent emission standards for combustion plant where non-combustion plant is not feasible in new developments.	Where non-combustion technologies are not feasible and combustion plant is installed the NOx emissions from Combined Heat and Power (CHP) plant will be required to meet the following emission limits: 50mg/Nm3 (and 25mg/Nm3 for turbocharged CHP) at reference O_2.	Most planning applications for commercial developments received in 2021 proposed zero emissions heating solutions, most commonly heat pumps, instead of combustion plant. All planning applications for developments proposing combustion plant are required to demonstrate that non-combustion is not feasible. Developments are encouraged to install combustion free heating plant in the first instance.

Measure	LLAQM Action Matrix Theme	Action	Progress
		All gas boilers will be required to have a NOx rating of <40mgNOx/kWh at 0% O_2 as a minimum. Options for tightening these limits by 2020 will be kept under review. The use of oil, biomass, biofuels, and wood pellets will be discouraged.	If combustion plant is necessary, conditions are applied requiring plant to meet NOx emissions standards.
44	Ensure that where possible chimney stacks terminate above the height of the nearest building.	Where combustion plant is installed good dispersion of emissions will be required by ensuring adequate dispersion. Chimneys should terminate a minimum of 2m above roof height where possible Stack discharge velocity should be at least 10 m/sec. Appliances 1MW or greater will be required to achieve a stack discharge velocity of 15 m/sec.	The City Corporation Air Quality Supplementary Planning Document (SPD) requires a consideration of combustion flue location and emission discharge velocity at the planning stage to ensure appropriate provision has been made. The Air Quality SPD will be reviewed once the new City Plan has been approved and we will look to strengthen our requirements. We respond to applications for chimney height approval as they arise. There was just 1 application in 2021.
45	Require all new developments to be air quality neutral as a minimum and developments subject to an Environmental Impact Assessment to be Air Quality Positive in line with the requirements of the emerging London Plan.	Evaluate all air quality neutral assessments. Mitigation may be considered but offsetting is not acceptable. Ensure air quality positive assessments are carried out for developments that require an Environmental Impact Assessment.	All major developments must submit an Air Quality Neutral Assessment. All Air Quality Neutral Assessments are reviewed by the air quality officer to ensure the benchmarks are met or relevant mitigation is provided. The requirement for Air Quality Positive Assessments for Environmental Impact Assessment developments has been included in our draft new Local Plan and will be reflected in the Air Quality Supplementary Planning Document update. In addition, we will encourage all development to use an air quality positive approach, where possible, in line with London Plan policy and the Central Activity Zone.

Measure	LLAQM Action Matrix Theme	Action	Progress
			We have updated our pre-application advice to include air quality positive.
46	Update the City Corporation Supplementary Planning Document for Air Quality to reflect new policies and requirements of the City Local Plan and London Plan.	Update the Supplementary Planning Document for Air Quality to reflect the latest guidance.	Due to more evidence gathering, informal stakeholder engagement and drafting of a revised version of the City Plan 2040 with further consultation proposed in December 2022 to 2023 the adoption of the plan has been delayed. Once the draft Local Plan has been finalised an updated Supplementary Planning Document will be produced.
47	Ensure emissions from construction sites are minimised through close management and control.	Regularly inspect sites and respond to complaints. Investigate options for powering tower cranes by mains electricity rather than a diesel generator. Encourage the use of electric excavators and diggers.	Construction sites are required to follow the City of London Code of Practice for Deconstruction and Construction Sites. We work with construction companies during the development of the proposals for construction practice proposals in order to minimise emissions to atmosphere and respond promptly to complaints. Site audits of Non-Road Mobile Machinery (NRMM) are undertaken through the pan London project, funded by the Mayor of London. From December 2020- January 2021, 40 site audits were undertaken. Our CoP for Deconstruction and Construction Sites encourages sites to secure an electrical supply for sites well in advance of works. Membership of the NRMM Project ensures that where alternative fuels and power sources are not available, sites use the least-polluting diesel equipment possible. Our guide to low emission and alternative technology and fuels is available on our webpages to support the uptake of lower

Measure	LLAQM Action Matrix Theme	Action	Progress
			emission NRMM for use during construction and street works, filming, and other events.
48	Regularly update the City Corporation best practice guidance on minimising emissions from construction and demolition in order to reflect best practice.	Work with demolition and construction companies to update the best practice guide. Look for further opportunities to reduce emissions with key companies.	An updated version will be available in 2022.
49	Enforce the Mayor of London NRMM requirements on construction sites as a minimum.	Carry out an inspection programme. Continue with membership of the London Low Emission Construction Partnership (LLECP)	Whilst funding for the LLECP has now stopped, we will continue to liaise with the Centre for Low Emission Construction and look for opportunities to trial low emission equipment. We continue to be a member of the pan London Non-Road Mobile Machinery project. Our sites are audited regularly for compliance with NRMM requirements. A range of sources are used to identify active demolition and construction sites. January 2021 – December 2021, 40 audits were undertaken. 14 sites were self-compliant 3 compliant after inspection 0 were non-compliant 13 sites had no NRMM 10 sites were complete
50	Introduce a Stage V emission limit for NRMM on construction sites by 2025 where available.	Incorporate this requirement in the City Corporation Code of Practice.	An updated Code of Practice for Deconstruction and Construction Sites will be available in 2022. Additional requirements for emissions from plant and equipment have been incorporated into the draft revised edition including the introduction of stage V by 2025.

Measure	LLAQM Action Matrix Theme	Action	Progress
			Stage V machinery is becoming more common. At the end of 2019 there was no Stage V machinery in the Square Mile, by December 2021 this had increased to 23%. The current CoP is compatible with existing London wide standards. It also encourages the use of the lowest emission options and recommends that an electrical supply for the site is secured for the works.
51	Investigate options for reducing emissions from NRMM used in street works, filming, and other events.	Source funding to undertake a trial of charging facility for street/film events.	We have produced a guide to low emission and alternative technology and fuels which will be made available in 2021 to support the uptake of lower emission NRMM for use during street works, filming, and other events. We have recommended the inclusion of zero and low emission plant in the Street works contract. Funding for a trial will be sought during 2022.
52	Examine options for reducing emissions from existing combustion plant in the Square Mile.	Source funding for trials. Work with the construction industry and equipment suppliers to support and pilot low and zero emission equipment. Work with business to support trials to reduce emissions from combustion plant in buildings.	A range of innovative technologies are being developed, including emission Stage V, retrofitted emission reduction systems, electrification, and hybrid power solutions. Increasingly alternatively powered plant is being trialled on construction sites. Increasingly HVO is now widely used. Battery Packs on generators are now commonly employed effectively turning a normal generator into a hybrid generator i.e., storing energy throughout the day so the engine can be switched off overnight and the battery used to run the security & welfare units. We continue to disseminate best practice advice for facilities managers, operators, and others to reduce emissions from buildings. The guidance document, Combustion plant: Recommendations for best practice is available here:

Measure	LLAQM Action Matrix Theme	Action	Progress
			https://www.cityoflondon.gov.uk/assets/Services-Environment/best-practice-combustion-guide.pdf.
53	Improve the understanding of the use of emergency generators in City of London buildings being used for Demand Side Response and Short-Term Operating Reserve.	Source funding to investigate the use of emergency generators in buildings. Work with building owners to investigate alternative means of providing emergency back-up power. Support the Mayor of London to seek reductions in emissions from large scale generators producing power for commercial buildings.	We continue to promote the guidance produced in 2020: Combustion plant: Recommendations for best practice'. This guidance document is available on the City's Air Quality webpages. We have previously held a number of webinars to promote the guidance including 'Generator Emissions – Guidance for Local Authorities' and the Combustion plant best practice recommendations for Facilities Managers and Operators'. The recording of this webinar has been converted to an educational video, available to view on YouTube via a requested link.
54	Continue to ensure that emissions from chimneys are dispersed as far as possible using the provisions of the Clean Air Act 1993.	Issue authorisations for Chimney Heights for new appliances.	One Chimney Height approval was issued during 2021.
55	Ensure compliance with emission control requirements for the City Corporation's prescribed processes.	Carry out regular risk-based inspections of prescribed processes in the Square Mile.	All permitted processes premises are inspected in line with their risk rating and the recommended inspection schedule. There are three dry cleaning operations and Barts energy centre has also been permitted. In 2021, Barts energy centre was inspected, and was scored as 'LOW' risk.
56	Promote and enforce smoke control provisions detailed in the City of London Various Powers Act 1954 and 1973 and the Clean Air Act 1993.	Continue to enforce the smoke control provisions and raise awareness in the City of London. Engage with food premises to ensure the correct appliances and fuels are used and reach out to employees through the business engagement program.	We have updated the City's air quality webpages to include information on new Domestic Solid Fuels Standards regulations which came into force in May 2021.

Measure	LLAQM Action Matrix Theme	Action	Progress
			We inspected all City shops likely to sell manufactured solid fuels (MSF) and wood to check that the correct labelling was displayed. We followed up non-compliance with a letter and follow up visits are scheduled Our factsheet 'Smoke Control from Food Premises', which provides information on smoke provisions and advice to food premises on exempt appliances and authorised fuels, continues to be available on our air quality webpages. We plan to food visit premises to increase awareness of the factsheet.
57	Make greater use of Public Health Networks to disseminate information about air quality.	Use Public Health Networks to disseminate information and improve awareness of air pollution and its impact on health Promote exposure reduction techniques and greater uptake of exposure reduction apps, such as CityAir phone app especially amongst vulnerable people and groups.	We support the Mayor of London's air pollution alerts to schools and GP practice, amplifying this message through Twitter alerts. The City Corporation CityAir App is promoted both on our website, through our e-newsletter and at every event we attend. We have created a factsheet for health professionals summarising the health impacts of ai pollution and providing tools and guidance for how to minimize exposure to air pollution. It is available to download from the City Corporation web site.
58	Assess options to improve and further develop the free CityAir Smart Phone App and continue	Source funding for improvements to the CityAir Smart Phone App.	We continue to support and promote AirTEXT through a yearly subscription.

Measure	LLAQM Action Matrix Theme	Action	Progress
	to support and promote the AirText service.	Work with Kings College London to upgrade the App. Continue to support and promote AirText	Over 35,000 people use our free CityAir app which has been updated to incorporate road closures.
59	Disseminate information about air quality through various channels such as social media, the City Corporation web site, and an e-newsletter.	Use and continue to develop a range of communication methods to reach businesses, workers, and residents, including social media, digital and website media, newsletters, and events. Specifically: • Daily tweets • Bimonthly e newsletter • At least 2 x hard copy articles per year • Update the City Corporation web pages at least every fortnight Attend at least 4 events per year to promote air quality	We continue to promote air quality messaging through our Twitter account, monthly e-newsletters, and our website pages. We use our Twitter account to alert 3000+ followers to days of moderate, high, and very high air pollution. The content on the Air Quality pages of the City Corporation website is reviewed monthly We have a CityAir Linkedin page to promote event invites, air quality news and our monthly e-newsletters. We regularly submit short articles for inclusion in other e-newsletters including Clean City Award Scheme and Cheapside Business Alliance.
60	Develop an action plan, in support of the Mayor of London's air pollution forecasting service, to reduce exposure on days of high and very high levels of air pollution.	An action plan focussed on raising awareness on days of high and very high air pollution.	We support the dissemination of the Mayor of London air pollution forecasting system and take opportunities as they arise to raise the profile of air quality.
61	Increase awareness of air pollution amongst the City of London residential community.	Attend events with an information stall. Provide information for newsletters Attend residents' meetings Support residents who wish to measure air pollution where they live.	Throughout the year we provided information where relevant for e-newsletters for a variety of partners, including Clean City Award Scheme and Cheapside Business Alliance. We utilise the Barbican Resident's weekly e-newsletter for pertinent messaging.

Measure	LLAQM Action Matrix Theme	Action	Progress
			Air quality superhero lanterns created as part of the Aldgate in Winter Festival were displayed at The Gate Hotel. We also had a stall, where we gave out leaflets on air pollution. To encourage engagement from City of London residents, a year-long Citizen Science project was run from March 2021 to March 2022 on the Barbican and Golden Lane Estates. Around 50 participants used diffusion tubes to measure monthly Nitrogen dioxide levels on their balconies and at public locations across the Estates. This project was a repeat of the Science in the City project held in 2014, and data has shown an almost 50% improvement in NO_2 concentrations across the Estates compared to 2014.
62	Run events in support of National Clean Air Day.	Run up to 3 events each year on and around National Clean Air Day.	For Clean Air Day 2021 we ran two information stalls one at Barts Hospital and the other at Aldgate Square for parents and any other users of the Square, engaging with 85+ throughout the day. We provided a pre-recorded virtual assembly for the Aldgate School which was shown in class bubbles.
63	Develop plans for improving air quality and reducing the exposure to pollution of children who attend schools and nurseries in the City of London	An action plan for all City of London schools and nurseries	All action plans have been reviewed for all five City schools and four nurseries. Monitoring reports have been produced based on the monitoring results from the sites or at nearby comparable locations and have been provided to the schools and nurseries. Data from the permanent background monitoring site at the Aldgate School continues to be used to produce six monthly reports for the School Governors.
64	Continue to support Barts Health NHS and other health care facilities to reduce their own	Support hospital events.	We obtained joint funding with the London Boroughs of Hackney, Tower Hamlets, and Newham to improve messaging

Measure	LLAQM Action Matrix Theme	Action	Progress
	impact on local air pollution and assist vulnerable patients in reducing their exposure to pollution.	Liaise with staff to reduce emissions and improve the understanding of air quality. Assess air quality around health care facilities	around air quality for 'hard to reach' communities. This will include training healthcare professionals and creating patient resources Barts Hospital was inspected for compliance with its environmental permit for its energy centre.
65	Continue to work with businesses to raise awareness of air pollution amongst workers.	Engage with business through CityAir business engagement programme. Working with Heart of the City and Business Healthy on business engagement.	We continue to engage with the City Business community through our CityAir programme (see above). We continue to support Heart of the City and Business Healthy through retweets and inclusion of relevant items in our newsletter. Heart of the City joined us National London Architecture for the January event promoting emissions reduction whilst homeworking.

3. Planning Update and Other New Sources of Emissions

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

Condition	Number
Number of planning applications where an air quality impact assessment was reviewed for air quality impacts	22
Number of planning applications required to monitor for construction dust	22
Number of CHPs/Biomass boilers refused on air quality grounds	0
Number of CHPs/Biomass boilers subject to GLA emissions limits and/or other restrictions to reduce emissions	0
Number of developments required to install Ultra-Low NO_x boilers	9
Number of developments where an AQ Neutral building and/or transport assessments undertaken	21
Number of developments where the AQ Neutral building and/or transport assessments not meeting the benchmark and so required to include additional mitigation	0
Number of planning applications with S106 agreements including other requirements to improve air quality	0
Number of planning applications with CIL payments that include a contribution to improve air quality	0
NRMM: Central Activity Zone and Canary Wharf Number of conditions related to NRMM included. Number of developments registered and compliant. Please include confirmation that you have checked that the development has been registered with the GLA through the relevant NRMM website and that all NRMM used on-site is compliant with Stage IIIB of the Directive and/or exemptions to the policy.	All planning approvals require the use of LEZ compliant NRMM as standard through compliance with our Construction code of practice 40 audits were undertaken. 14 sites were self-compliant 3 compliant after inspection 0 were non-compliant 13 sites had no NRMM 10 sites were complete. .

All planning applications are reviewed for air quality impact. The Air Quality Officer recommends conditions for the Planning Officers to apply, should the development be approved.

3.1 New or significantly changed industrial or other sources

No new sources identified.

4. Additional Activities to Improve Air Quality

4.1 City of London Fleet

We have 17 electric and 5 hybrid (zero emission capable) vehicles. This makes up 40% of the fleet. This total does not include specialist vehicles used in open spaces where zero emission options are not available.

4.2 NRMM Enforcement Project

We will continue to support the NRMM Enforcement project in 2022 – 23.

4.2 Air Quality Alerts

We continue to support *air*TEXT (https://www.airtext.info/) and also issue air quality alerts through our own smartphone App CityAir.

Appendix A Details of Monitoring Site Quality QA/QC

A.1 Automatic Monitoring Sites

Site	Data Management	Site Serviced and Repaired by:	Site Audited by:	City of London Calibration and Maintenance
CT2 (Farringdon Street)	Imperial College	Matts Monitors (biannual)	--	Filters changed every 8 weeks
CT3 (The Aldgate School)	Imperial College	Matts Monitors (biannual)	National Physics Laboratory (biannual)	Calibration every 4 weeks and BAM filter change every 8 weeks
CT4 (Beech St NOx)	Imperial College	Matts Monitors (biannual)	National Physics Laboratory (biannual)	Calibration every 2 weeks
CT4 (Beech St PM10)	Imperial College	Matts Monitors (biannual)	National Physics Laboratory biannual)	Filters changed every 8 weeks
CT6 (Walbrook Wharf)	Imperial College	Matts Monitors (biannual)	National Physics Laboratory (biannual)	Calibration every two weeks
CT8 (Upper Thames Street)	Imperial College	Matts Monitors (biannual)	National Physics Laboratory (biannual)	Filters changed every 8 weeks

PM_{10} Monitoring Adjustment

The BAM data has been corrected in line with the EU reference equivalent method by dividing by 1.211. All data is corrected by Imperial College London

A.2 Diffusion Tubes

- Diffusion Tubes supplied and analysed by Gradko International Laboratory
- Preparation method used is 50% Triethanolamine (TEA) in Acetone preparation method and analysed using U.V. Spectrophotometry.
- Gradko International Ltd is a UKAS accredited laboratory and participates in the AIR-PT Scheme (a continuation of the Workplace Analysis Scheme for Proficiency (WASP)) for NO_2 tube analysis and the Annual Field Inter-

Comparison Exercise. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO_2 concentrations reported are of a high calibre. The lab follows the procedures set out in the Harmonisation Practical Guidance.

- Results of laboratory precision results:
    - Laboratory tube precision for 2020= 100% good precision
    - Air NO_2 PT Scheme results = 25% for Jan – March 2021. No further results for 2021
- Bias adjustment factor from the National Bias Adjustment Spreadsheet available on the LAQM Support Website= 0.83 (Spreadsheet Version Number 03/22
- 2 Colocation studies were carries out, one roadside at Walbrook Wharf and one background at The Aldgate School. Results below.
- The bias adjustment factor being applied to the annual means from the diffusion tubes is **0.83** from the National Bias Adjustment Spreadsheet

Factor from Local Co-location Studies

Walbrook Wharf – Roadside

Tubes average	Reference average	Bias Adjustment Factor
53	47	0.88

The Aldgate School – Background

Tubes average	Reference average	Bias Adjustment Factor
29	23	0.79

Discussion of Choice of Factor to Use

The national bias adjustment factor has been used. This is consistent with previous years and also the national bias adjustment factor is the same as the average of our two local factors, showing that it is representative of conditions in the City.

Table L. Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2021	National	03/22	0.83
2020	National	03/21	0.82
2019	National	03/20	0.87
2018	National	03/19	0.92
2017	National	03/18	0.97
2016	National	03/17	1.03
2015	LWEP	-	0.97

A.3 Adjustments to the Ratified Monitoring Data

Short-term to Long-term Data Adjustment

Distance Adjustment

No distance adjustment has been carried out it is assumed that all sites are of relevant public exposure

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

Site ID	Annualisation Factor City of London - The Aldgate School	Annualisation Factor Camden - Bloomsbury	Annualisation Factor Southwark - Elephant and Castle	Average Annualisation Factor	Raw Data Annual Mean (µg m^{-3})	Annualised Annual Mean (µg m^{-3})	Comments
CT8 (Upper Thames Street) PM10	0.992	0.958	0.949	0.966	20	19.3	

Site ID	Annualisation Factor City of London - The Aldgate School	Annualisation Factor Greenwich - Eltham	Annualisation Factor Southwark - Elephant and Castle	Average Annualisation Factor	Raw Data Annual Mean (µg m^{-3})	Annualised Annual Mean (µg m^{-3})	Comments
CT2 (Farringdon Street) PM2.5	1.11	1.264	1.186	1.187	10	11.9	

Site ID	Annualisation Factor The Aldgate School	Average Annualisation Factor	Raw Data Annual Mean (µg m^{-3})	Annualised Annual Mean (µg m^{-3})	Comments
Bank 5: Magistrates Court	1.057645359	1.057645359	36.11	38.19	
Bank 12: Threadneedle Street	0.981002613	0.981002613	34.51	33.86	
OS1: St Mary at Hill Churchyard	0.951117611	0.951117611	26.95	25.63	
OS3: St Pauls	0.890742147	0.890742147	32.13	28.62	
OS6: Finsbury Circus	1.005464029	1.005464029	29.57	29.73	

Brushfield Street	0.988385168	0.988385168	27.74	27.42	
LEN 16: Moor Lane	0.890081397	0.890081397	30.77	27.39	
BS17: Moorgate	1.028017537	1.028017537	39.44	40.55	

Appendix B Full Monthly Diffusion Tube Results for 2021

Table O. NO_2 Diffusion Tube Results

Site ID	Valid data capture for monitoring period %[a]	Valid data capture 2021 %[b]	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual mean – raw data	Annual mean – annualised and bias adjusted
CL5	N/A	100	44.84	36.1	42.5	26.86	31.45	27.88	26.35	29.91	41.26	43.97	46.64	44.3	36.84	31
CL38	N/A	83		32.59	35.61	30.88	29.79	31.66	29.26	28.44	40.87	34.67	44.91		33.87	28
CL39	N/A	100	45.47	40.46	40.08	36.04	41.22	45.49	37.98	39.54	52.07	48.63	51.57	41.74	43.36	36
CL55	N/A	92	34.3	27.56	25.55	22.09	19.03	16.9	16.42	14.3	23.83	26.65		25.39	22.91	19
CL40	N/A	83	41.35	33.77	35.16	30.34	29.03	26.65	25.78			36.02	39.48	33.03	33.06	27
Bank 1	N/A	100	52.23	42.51	40.91	38.19	43.84	42.76	41.17	35.03	52.78	48.77	48.88	41.14	44.02	37
Bank 2	N/A	75	45.2	39.14	37.56		36.25	29.67	29.2	26.18	45.74			44.24	37.02	31
Bank 3	N/A	92	40.43	36.62	35.76	33.56	31.16	26.84	29.16		41.03	37.5	46.72	33.1	35.63	30
Bank 5	N/A	67	42.52	38.11		31.88	40.57	27.36		29.47	33.81	45.18			36.11	32
Bank 6	N/A	100	49.43	51.33	44.62	31.03	36.64	35.6	34.84	34.18	54.31	45.19	48.91	42.12	42.35	35
Bank 8	N/A	92	39.93	39.29	37.12	36.86	30.37	24.59	24.85	23.71	34.92	35.56	40.96		33.47	28
Bank 10	N/A	100	44.22	36.86	36.82	30.93	32.64	28.44	26.07	30.62	45.92	41.66	46.02	33.37	36.13	30
Bank 11	N/A	100	42.66	35.9	34.28	25.84	30.86	26.12	25.4	26.84	38.58	33.96	39.53	29.41	32.45	27
Bank 12	N/A	67	41.35	36.86	36.76	31.73	32.39	25.69			39.4			31.91	34.51	28
Bank 13	N/A	75	37.76	34.57	32.47		28.33	24.11	22.67			33.51	35.38	31.15	31.11	26
Bank 14	N/A	92	42.32	39.82	35.82	35.88	40.15	30.32	28.17		44.73	44.82	51.41	34.96	38.95	32
Bank 15	N/A	92	49.44	41.21	42.61	41.18	44.02	44.39	35.82	57.96		49.45	52.2	40.18	45.32	38
Bank 16	N/A	92	53.82	42.01	47.01	42.6	45.85	44.74	35.87	61.8		62.7	60.39	50.17	49.72	**41**
Bank 17	N/A	75	52.93	40.8	40.82			37.57	33.22	49.37		45.27	53.86	36.34	43.35	36
Bank 18	N/A	83	37.97	32.86	33.37	31.34	34.71	31.83	30.12		42.66	37.68	45.92		35.85	30
Bank 19	N/A	75	33.66	28.63	30.61	26.01	26.71		23.27	21.37	31.5		39.03		28.98	24
Bank 20	N/A	83	46.69	35.09	39.37	34.54	37.31	33.98	34.92		47.47	45.76	51.75		40.69	34
Bank 22	N/A	92	43.2	44.15	41.97	40.28	43.32	46.1	41.6	42.39	51.43	42.29		43.46	43.65	36
Bank 23	N/A	92	44.22	33.45	39.98	38.02	38.62	34.79	34.89	34.31		37.6	47.6	31.93	37.76	31
LEN 1	N/A	100	37.836	42.174	37.557	28.859	30.749	24.625	23.51	23.777	38.031	38.572	34.76	34.763	32.93	27
LEN 3	N/A	92	48.354	37.295	39.028	29.196	29.258	29.839	28.162	30.3	39.988	41.095		39.5	35.64	30
LEN 4	N/A	83		20.189	47.712	37.645	42.018		37.229	34.812	52.359	44.644	58.986	45.84	42.14	35
LEN 5	N/A	100	33.803	29.164	27.375	21.265	21.842	19.464	17.695	16.257	29.908	32.032	39.043	29.53	26.45	22

LEN 6	N/A	92	36.116	31.452	32.026		23.411	21.969	20.007	21.553	33.858	37.977	39.86	31.33	29.96	25
LEN 7	N/A	100	39.138	34.406	31.535	25.504	26.463	20.954	15.289	17.454	30.41	32.318	38.877	30.1	28.54	24
LEN 8	N/A	92	37.731	28.712	30.58	25.328	27.357	22.805	21.207		45.551	33.719	37.907	26.62	30.68	25
LEN 9	N/A	92	45.123	34.974	42.337	37.717	44.019	38.098	38.035	34.665	56.995	50.121	51.808		43.08	36
LEN10	N/A	100	37.601	28.993	29.726	24.255	25.456	20.24	19.667	17.289	29.263	28.888	33.85	30.08	27.11	23
LEN15	N/A	92	39.742	24.799	32.433	23.343	24.246	21.908		17.794	28.249	30.167	37.262	28.96	28.08	23
LEN16	N/A	58	37.53	31.029		25.182	26.736				30.035	32.41	32.492		30.77	23
SJC1	N/A	100	38.785	27.497	34.501	23.937	28.532	18.645	22.211	19.254	31.754	35.078	35.77	28.844	28.73	24
SJC6	N/A	83	30.939	26.902	32.083	25.165		21.262	22.162	18.496	29.811	32.577	38.736		27.81	23
SJC8	N/A	75	35.198	26.82	28.437	23.676		21.282	23.21		30.568	33.492	38.835		29.06	24
WW1	N/A	100	47.212	49.044	44.942	48.599	58.783	51.959	49.683	42.125	66.472	61.936	55.567	48.88	52.10	**43**
WW2	N/A	92	50.317	51.322	42.239	46.715	62.755	47.928		47.15	66.86	58.839	53.868	51.13	52.65	**44**
WW3	N/A	92	48.928	51.671	46.539	48.648	58.189		51.387	43.882	66.676	58.614	57.328	53.62	53.23	**44**
PLA5	N/A	100	44.045	38.778	33.423	29.77	33.836	29.545	29.664	28.304	40.109	43.023	51.125	46.481	37.34	31
PLA6	N/A	75	35.624	29.322	28.095	29.704			23.896	22.691		34.008	44.798	33.166	31.26	26
Liverpool Street	N/A	92	51.338	43.418	44.39	44.303	41.789	41.273	37.019		50.183	20.458	48.881	39.339	42.04	35
Fenchurch Avenue	N/A	92	38.803	31.954	31.647		27.75	21.757	24.177	18.789	34.287	28.165	40.975	31.823	30.01	25
Fetter Lane & Crane Court	N/A	83	41.563	35.824	34.371	33.356	35.323	32.498		25.155	40.756		43.107	37.469	35.94	30
OS1	N/A	67			29.819	26.937	24.441	19.121			26.829	26.482	33.223	28.763	26.95	21
OS3	N/A	67	40.012		29.044	25.781	26.626				28.434	32.331	42.696	32.113	32.13	24
OS5	N/A	92	32.711		31.581	29.69	28.821	26.196	25.154	23.3	36.191	35.109	39.209	34.489	31.13	26
OS6	N/A	67				29.506	26.333		22.258	19.949	34.021	33.925	39.54	31.027	29.57	25
OS7	N/A	100	33.533	31.856	38.632	30.579	29.791	31.036	21.808	26.653	37.817	34.505	45.437	31.352	32.75	27
Brushfield Street	N/A	67		28.576	28.386		26.507		21.717	19.324		28.323	40.021	29.099	27.74	23
Goodmans Yard	N/A	92	43.105	30.899	38.533	29.537	31.22	28.374	26.371	25.456	38.683	35.984	45.976		34.01	28
Goldman Sachs, Shoe Lane	N/A	100	36.656	35.439	32.764	29.324	27.422	21.327	21.171	17.887	31.844	34.357	36.656	33.665	29.88	25
Citigen	N/A	100	44.047	37.745	40.131	32.268	35.826	32.932	26.871	29.399	39.606	40.442	41.174	36.462	36.41	30
N1	N/A	100	33.124	28.643	28.207	16.933	24.522	22.676	20.904	19.823	31.326	31.572	34.239	25	26.41	22
N2	N/A	100	35.058	29.145	26.556	21.458	21.327	17.104	18.554	18.04	25.729	30.708	29.736	27.91	25.11	21
SPS2	N/A	92		33.431	38.425	28.679	32.301	31.241	17.053	27.72	42.233	34.979	44.459	39.046	33.60	28
CLS2	N/A	100	31.767	26.779	27.675	24.468	23.45	20.814	22.833	19.836	30.239	29.458	33.194	36.085	27.22	23

CHS1	N/A	100	38.844	33.284	33.888	24.057	25.017	23.397	20.759	21.785	32.494	36.896	34.006	30.14	29.55	25
T2	N/A	92	46.98	41.07	44.46		46.99	46.07	45.66	39.57	54.45	51.31	64.91	45.35	47.89	40
T3	N/A	92	51.67	43.87	61.24	50.06		51.56	51.31	48.27	65.98	56.78	74.7	55.52	55.54	**46**
T4	N/A	100	39.29	33.25	32.92	29.73	32.28	26.49	28.09	25.29	38.29	35.35	42.76	32.11	32.99	27
T5	N/A	92	51.26	39.53	43.58	32.91	44.7	35.72		35.15	49.83	54.76	56.17	46.8	44.58	37
T6	N/A	100	40.68	30.6	33.34	26.95	13.08	22.18	25.86	19.25	35.27	34.38	40.58	35.15	29.78	25
T7	N/A	100	38.27	31.22	30.41	26.28	30.41	23.07	25.37	18.22	34.61	37.12	37.72	31.46	30.35	25
T9	N/A	83	40.65	44.44	37.31	34.42	39.95	39.88	41.5	36.57	53.47		43.81		41.2	34
T10	N/A	92	37.87	30.49	28.32	26.54		22.37	25.68	22.38	35.56	30.97	39.72	28.7	29.87	25
T11	N/A	75	38.15	32.12	30.59	25.61		24.79			42.87	31.53	44.82	27.45	33.1	27
T12	N/A	100	52.2	40.35	40.46	36.3	48.7	42.95	45.55	40.57	61.64	51.34	58.53	52.8	47.15	39
T13	N/A	100	49.39	47.15	46.2	36.12	46.4	40.23	42.41	38.92	47.38	55.7	57.81	30.02	46.16	38
T14	N/A	100	51.08	43.91	42.63	39.36	46.79	37.82	44.77	34.77	55.41	50.89	52.81	48.8	45.48	38
T15	N/A	100	38.98	31.99	37.57	29.83	37.42	31.09	37.64	31.98	45.9	40.31	40.41	41.39	36.65	30
T16	N/A	92	36.03	38.24	35.22	32.81	34.94	32.31		29.69	45.87	39.91	45.7	37.24	37.07	31
T17	N/A	100	46.35	38.75	45.04	35.6	38.47	39.3	36.62	30.56	49.62	48.39	48.62	42.3	41.63	35
T18	N/A	100	47.788	47.794	43.586	40.191	44.811	43.796	42.506	37.201	52.466	44.938	52.086	23.01	43.35	36
T19	N/A	92	37.87	36.46	33.71	26.29	30.32	24.32	29.15	23.72	37.07		38.1	29.64	31.7	26
T20	N/A	83	45.74	44.74	30.83	31.96	36.29	27.45	36.03	28.91			44.78	39.63	36.3	30
T21	N/A	100	52.64	52.46	49.62	44.19	50.79	43.93	50.73	43.72	64.61	59.84	60.48	53.57	52.09	**43**
T22	N/A	83	40.72	38.36	34.59	29.5	31.76	25.81	31.73	24.35	38.38	40.7			33.59	28
T23	N/A	92	40.63	34.52	36.23	28.19	29.57	21.55	25.73	23.13		33.11	45.93	32.9	31.95	27
T24	N/A	100	41	34.66	33.59	26.67	27.6	22.33	24.86	21.34	36.59	32.71	42.35	29.1	31.07	26
BS1	N/A	83	57.6	47.48	52.31			42.26	42.64	33.35	52.96	45.1	51.48	44.97	47.01	39
BS14	N/A	75	37.12	27.35	29.24			24.72	25.5	19.48		33.89	40.77	30.96	29.89	25
BS16	N/A	92	35.53	31.54	29.59	26.75	27.7	21.93		18.47	34.69	34.97	43.12	34.96	30.84	26
BS17	N/A	67	40.91	35.31	40.22	34.24	38.61	37.14	35.56		53.56				39.44	34
BS18	N/A	83	46.56	38.3	43.22	41.29	46.19	46.01	40.94			48.04	56.06	41.42	44.8	37
BS19	N/A	100	44.87	37.86	40.82	37.73	37.74	40.31	42.47	36.17	53.29	41.77	52.44	46.74	42.68	35
BS20	N/A	75	34.2	28.38	29.02	28		21.33	20.46			31.02	36.13	30.5	28.78	24
BS21	N/A	92	50.34	41.77	44.43	36.67	38.04	39.88	36.64		46.46	43.06	51.68	44.01	43	36

Notes

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

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

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

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

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

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