City of London Air Quality Annual Status Report for 2020

Date of publication: July 2021

This report provides a detailed overview of air quality in City of London during 2020. It has been produced to meet the requirements of the London Local Air Quality Management (LLAQM) statutory process[1].

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

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Abbreviations

Abbreviation	
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	2020
Particles ($PM_{2.5}$)	Target of 15% reduction in concentration at urban background locations	3-year mean	Between 2010 and 2020
Sulphur dioxide (SO_2)	266 µg m^{-3} not to be exceeded more than 35 times a year	15-minute mean	31 Dec 2005
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

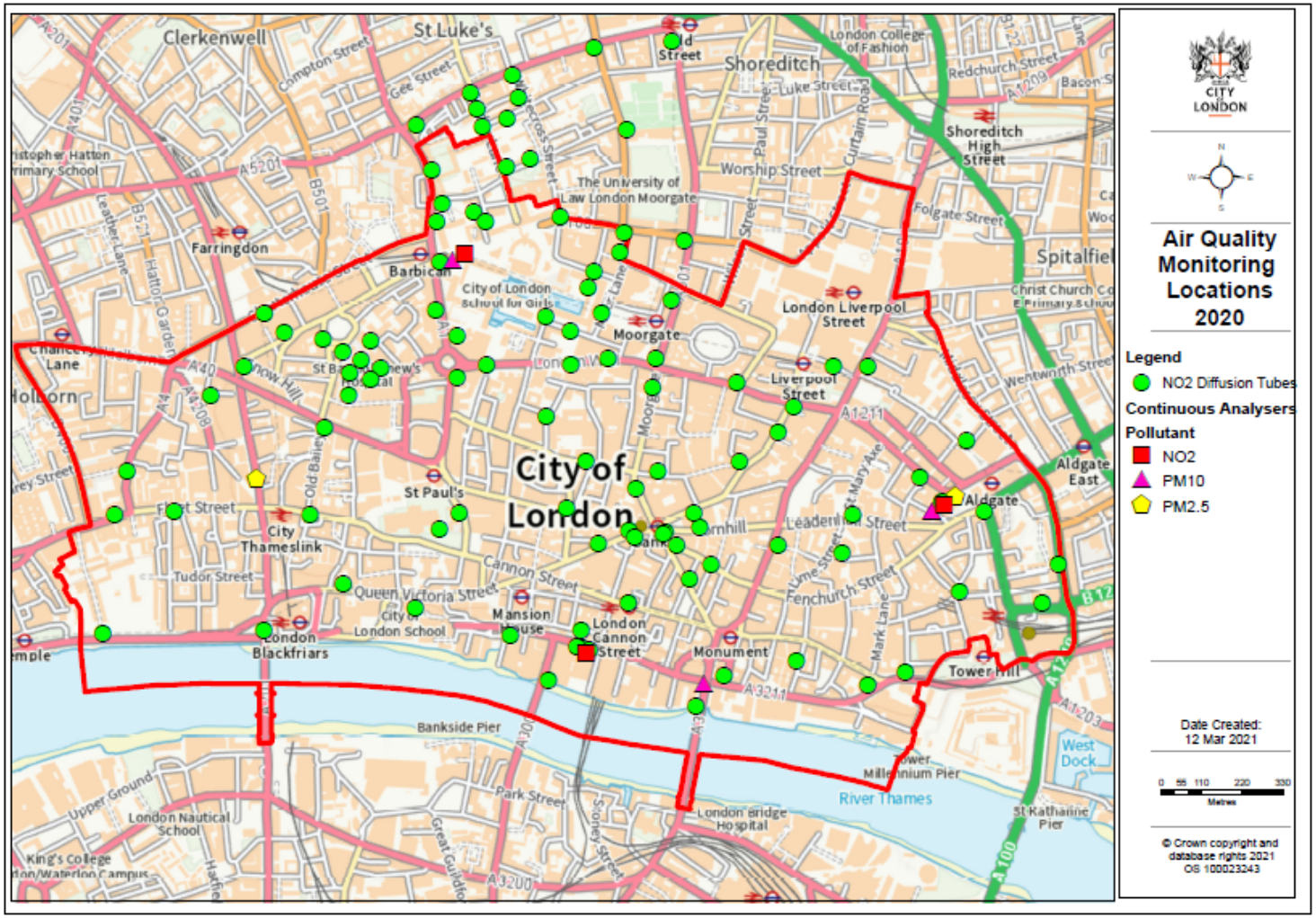


Table B. Details of Automatic Monitoring Sites for 2020

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}	TEOM
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}	TEOM / BAM

Details of Non-Automatic Monitoring Sites (diffusion tubes), 2020

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	NO_2	N
CL38	St. Andrew's Church, Queen Victoria St	531851	180962	Roadside	Y	0 m	2m	3	NO_2	N
CL39	St. Dunstan's Church, Fleet St	531235	181155	Roadside	Y	0 m	2m	1.5	NO_2	N
CL55	Speed House, Barbican Centre	532482	181799	Urban Background	Y	0 m	N/A	0.5	NO_2	N
CL40	Guinness Trust Estate, Mansell St.	533791	181027	Roadside	Y	0 m	3m	2	NO_2	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	NO_2	N
Bank 2	Queen Victoria Street	532576.3	180931.9	Kerbside	Y	0 m	<1m	2m	NO_2	N
Bank 3	King Street	532460.7	181167.5	Kerbside	Y	0 m	<1m	2m	NO_2	N
Bank 4	Corner of Poultry and QVS	532630.9	181111.6	Roadside	Y	0 m	4m	2m	NO_2	N
Bank 5	Magistrates Court	532644.9	181092.6	Kerbside	Y	0 m	<1m	2m	NO_2	N
Bank 6	King William Street	532795.4	180980.2	Kerbside	Y	0 m	<1m	2m	NO_2	N
Bank 7	Lombard and KWS	532759.8	181071.6	Kerbside	Y	0 m	<1m	2m	NO_2	N
Bank 8	Lombard Street	532853.1	181017.6	Kerbside	Y	0 m	<1m	2m	NO_2	N
Bank 9	Lombard Street and Cornhill	532723.0	181099.6	Roadside	Y	0 m	3m	2m	NO_2	N
Bank 10	Cornhill Bank Junction	532729.3	181107.2	Kerbside	Y	0 m	<1m	2m	NO_2	N
Bank 11	Cornhill-Royal Exchange	532822.0	181123.0	Kerbside	Y	0 m	<1m	2m	NO_2	N
Bank 12	Threadneedle Street	532841.0	181192.9	Kerbside	Y	0 m	<1m	2m	NO_2	N
Bank 13	31 Old Broad Street	533036.0	181376.4	Kerbside	Y	0 m	<1m	2m	NO_2	N
Bank 14	Wormwood Street	533077.9	181445.0	Kerbside	Y	0 m	<1m	2m	NO_2	N
Bank 15	3 London Wall	532923.0	181509.1	Kerbside	Y	0 m	<1m	2m	NO_2	N
Bank 16	81 London Wall	532664.5	181552.3	Kerbside	Y	0 m	<1m	2m	NO_2	N
Bank 17	55 Moorgate	532693.1	181497.7	Kerbside	Y	0 m	<1m	2m	NO_2	N
Bank 18	85 Gresham Street	532693.1	181497.7	Kerbside	Y	0 m	<1m	2m	NO_2	N
Bank 19	Lothbury	532723.6	181265.3	Roadside	Y	0 m	2m	2m	NO_2	N
Bank 20	Princes Street	532649.3	181224.6	Kerbside	Y	0 m	<1m	2m	NO_2	N
Bank 22	Gracechurch Street Leadenhall	533,040.4	181,108.6	Kerbside	Y	0 m	1m	2m	NO_2	N
Bank 23	Fish Street Hill	532,839.3	180,714.3	Kerbside	Y	0 m	<1m	2m	NO_2	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

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

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

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

Diffusion tubes were deployed in January 2019 to gather baseline 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 2020 %[(b)]	2014	2015	2016	2017	2018	2019	2020
CT3 (Aldgate School)	Urban Background	N/A	95	**45**	**42**	**42**	38	32	33	22
CT4 (Beech St)	Roadside	N/A	99	**80**	**89**	**85**	**80**	**69**	**62**	29
CT 6 (Walbrook)	Roadside	N/A	87	**122**	**98**	**92**	**92**	**87**	**73**	**45**

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 33%.

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 2020 % [b]	Annual Mean Concentration (µg/m^3)						
					2014	2015	2016	2017	2018	2019	2020
CL5	Urban Background	St. Bartholomew's Hospital courtyard	N/A	83	**43**	38	**49**	**63**	**50**	**42**	33
CL38	Roadside	St. Andrew's Church, Queen Victoria St	N/A	83	**59**	**53**	**56**	**52**	**50**	**41**	28
CL39	Roadside	St. Dunstan's Church, Fleet St	N/A	83	**80**	**87**	**81**	**82**	**70**	**57**	31
CL55	Urban Background	Speed House, Barbican Centre	N/A	92	34	33	35	32	31	28	19
CL40	Roadside	Guinness Trust Estate, Mansell St.	N/A	58	**59**	**56**	**51**	**48**	**46**	39	33

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 33%.

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

Site ID	Site type	Location	Valid data capture % [a]	Valid data capture 2020 % [b]	Annual Mean Concentration (µg/m^3)				
					2016	2017	2018	2019	2020
BANK 1	Kerbside	Cannon Street	N/A	83	**78**	**65**	**50**	**40**	38
BANK 2	Kerbside	Queen Victoria Street	N/A	83	**72**	**59**	**58**	**51**	35
BANK 3	Kerbside	King Street	N/A	83	**52**	**52**	**52**	**47**	30
BANK 4	Roadside	Corner of Poultry and QVS	N/A	83	**71**	**60**	**63**	**55**	35
BANK 5	Kerbside	Magistrates Court	N/A	83	**66**	**63**	**53**	**56**	36
BANK 6	Kerbside	King William Street	N/A	67	**76**	**70**	**61**	**61**	**42**
BANK 7	Kerbside	Lombard and KWS	N/A	83	**57**	**58**	**56**	**54**	30
BANK 8	Kerbside	Lombard Street	N/A	67	**59**	**56**	**56**	**45**	**30**
BANK 9	Roadside	Lombard Street and Cornhill	N/A	67	**68**	**62**	**60**	**46**	32
BANK 10	Kerbside	Cornhill Bank Junction	N/A	67	**71**	**67**	**66**	**57**	31
BANK 11	Kerbside	Cornhill-Royal Exchange	N/A	50	**61**	**57**	**62**	**41**	26
BANK 12	Kerbside	Threadneedle Street	N/A	67	**85**	**69**	**62**	**42**	31
BANK 13	Kerbside	31 Old Broad Street	N/A	67	**59**	**57**	**53**	**45**	28
BANK 14	Kerbside	Wormwood Street	N/A	67	**64**	**61**	**57**	**49**	32
BANK 15	Kerbside	3 London Wall	N/A	67	**64**	**54**	**65**	**53**	33

BANK 16	Kerbside	81 London Wall	N/A	42	**60**	**59**	**62**	**53**	36
BANK 17	Kerbside	55 Moorgate	N/A	75	**69**	**66**	**66**	**52**	36
BANK 18	Kerbside	85 Gresham Street	N/A	83	**53**	**54**	**52**	**46**	30
BANK 19	Roadside	Lothbury	N/A	67	**45**	**44**	**45**	39	24
BANK 20	Kerbside	Princes Street	N/A	75	**78**	**74**	**69**	**49**	36
BANK 22	Kerbside	Gracechurch Street Leadenhall	N/A	50	-	**66**	**62**	**51**	33
BANK 23	Kerbside	Fish Street Hill	N/A	75	-	**66**	**61**	**43**	32

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 33%.

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 (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 2020 % [b]	Annual Mean Concentration (µg/m^3)			
					2017	2018	2019	2020

LEN 1	Kerbside	Giltspur Street	N/A	83	**53**	**43**	38	28
LEN 3	Roadside	Beech Street- Near barbican station	N/A	67	**69**	**<u>62</u>**	**50**	33
LEN 4	Kerbside	Aldersgate	N/A	75	**62**	**57**	**47**	**41**
LEN 5	Roadside	Viscount Street	100	58	**40**	37	**-**	24
LEN 6	Roadside	Whitecross Street/ Beech street	N/A	67	**46**	**42**	40	23
LEN 7	Kerbside	Silk Street	N/A	67	**41**	**41**	36	25
LEN 8	Kerbside	Fore Street	N/A	75	**41**	38	34	25
LEN 9	Kerbside	London Wall/ Brewers Hall Gardens	N/A	67	**48**	**49**	**42**	29
LEN 10	Roadside	Aldermanbury	N/A	83	38	37	31	24
LEN15	Kerbside	Fann Street	N/A	50	-	**41**	36	23
LEN16	Kerbside	Moor Lane	N/A	58	**-**	39	30	23

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 **<u>bold and underlined</u>**.

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 33%.

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

Site ID	Site Type	Location	Valid data capture % [a]	Valid data capture 2020% [b]	Annual Mean Concentration (µg/m^3)						
					2014	2015	2016	2017	2018	2019	2020
SJC1/6/8*	Urban Background	The Aldgate School rear playground (co-location)	N/A	33	**46**	**41**	39	**40**	39	33	22
PLA5	Roadside	Southwark Bridge	N/A	83	-	-	-	-	**41**	35	29
PLA6	Urban Background	London Bridge	N/A	75	-	-	-	-	37	35	26
Liverpool St	Kerbside	Liverpool Street	N/A	58	-	-	-	-	**71**	**52**	35
Fenchurch Ave	Roadside	Fenchurch Avenue	N/A	75	-	-	-	**46**	36	35	26
Fetter Lane	Kerbside	Fetter Lane	N/A	92	-	-	-	-	**56**	**44**	29
OS1	Urban Background	St Mary at Hill's Churchyard	N/A	58	-	-	-	-	33	31	20
OS3	Urban Centre	St Pauls	N/A	83	-	-	-	-	**41**	39	24
OS5	Urban Background	Whittington Gardens	N/A	75	-	-	-	-	**42**	37	26
Goodmans Yard	Roadside	Goodmans Yard	N/A	50	-	-	-	-	-	**44**	25
Goldman	Roadside	Goldman Sachs, Shoe Lane	N/A	92	-	-	-	-	-	-	24
Citigen	Roadside	Citigen	N/A	92	-	-	-	-	-	-	30
N1	Urban Background	Hatching Dragons Nursery	N/A	67	-	-	-	-	-	-	22

N2	Urban Background	Bright Horizons Nursery	N/A	83	-	-	-	-	-	-	24
SPS2	Roadside	St Pauls School front railings	N/A	92	-	-	-	-	-	**42**	31
CLS2	Urban Background	CoL Boys School access ramp	100	33	-	-	-	-	-	-	21

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 2020 % [b]	Annual Mean Concentration (µg/m^3)		
					2018	2019	2020
T2	Kerbside	Byward Street	N/A	58	**67**	**51**	33
T3	Kerbside	Seething Lane	N/A	67	**71**	**57**	41
T4	Kerbside	Crosswall	N/A	58	**50**	**44**	26
T5	Kerbside	Minories	N/A	75	**62**	**49**	36
T6	Kerbside	Stoney Lane	N/A	67	**40**	39	25
T7	Kerbside	Heneage Lane	N/A	67	**42**	33	25
T9	Kerbside	150 Bishopsgate	N/A	67	**74**	**48**	33

T10	Kerbside	St Mary Axe	N/A	67	**50**	**42**	24
T11	Kerbside	Old Broad Street	N/A	58	**40**	31	25
T12	Kerbside	Upper Thames Street	N/A	67	**48**	**53**	38
T13	Kerbside	Blackfriars Bridge	N/A	75	**62**	**56**	**41**
T14	Kerbside	Victoria Embankment	N/A	67	**68**	**57**	36
T15	Kerbside	Fleet Street	N/A	67	**62**	**47**	33
T16	Kerbside	Ludgate Hill	N/A	75	**61**	**50**	31
T17	Kerbside	Museum of London	N/A	75	**66**	**55**	36
T18	Kerbside	London Wall	N/A	58	**65**	**52**	36
T19	Kerbside	West Poultry Ave	N/A	67	**51**	38	28
T20	Kerbside	The Fable	N/A	67	**58**	**51**	35
T21	Kerbside	North Old Baily	N/A	75	**73**	**56**	36

Table D (vi) Annual Mean NO_2 monitoring results for the Beech Street Project ($\mu g/m^3$)

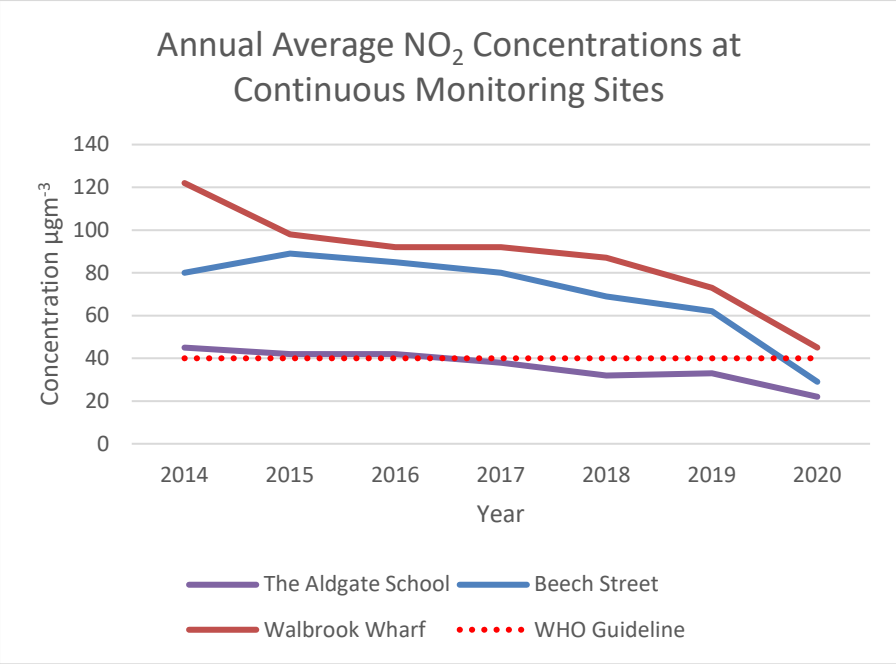
Site ID	Site Type	Location	Valid data capture for monitoring period % [a]	Valid data capture 2020 % [b]	Annual Mean Concentration (μgm^{-3})	
					2019	2020
BS1	Kerbside	Aldersgate Street	N/A	50	**47**	37
BS14	Kerbside	Bunhill Row/Chiswell Street	N/A	67	40	25
BS16	Kerbside	Moore Lane/Ropemaker Street	N/A	67	34	27

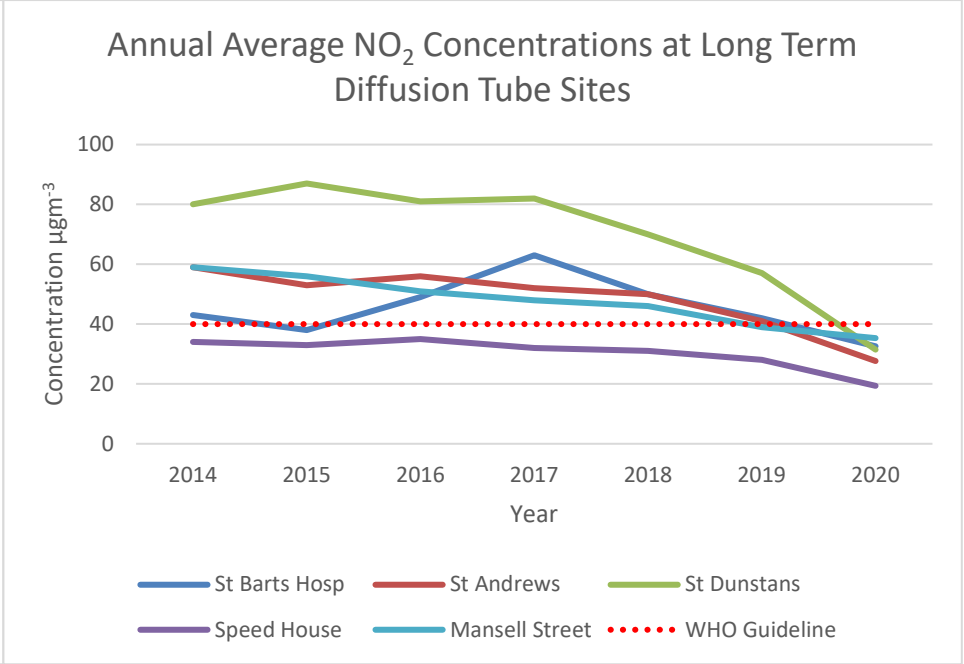
BS17	Kerbside	Moorgate	N/A	58	**52**	30
BS18	Kerbside	London Wall/ Moorgate	N/A	58	**52**	34
BS19	Kerbside	London Wall	N/A	75	**49**	34
BS20	Kerbside	Wood Street	N/A	67	29	23
BS21	Kerbside	Goswell Road	100	58	-	31

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

Continuous monitoring sites and long-term diffusion tube sites

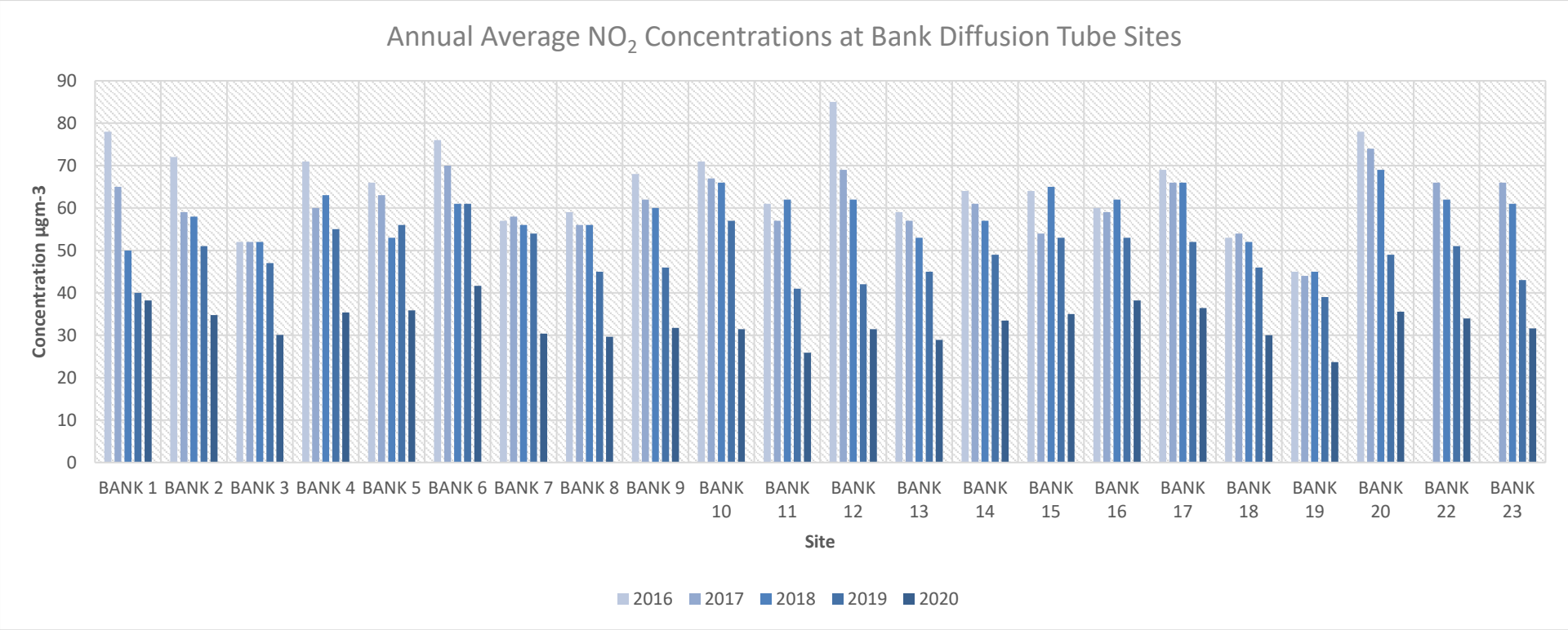
Since 2014 nitrogen dioxide concentrations have been gradually decreasing across roadside and background monitoring sites in the City. The one exception was Barts hospital, which saw a sharp increase in 2016-17. This was associated with the installation of a new energy centre. We worked with St Barts 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. The NO_2 concentration at Beech Street reduced by 53% from 2019 to 2020, due to the combined impact of the Covid19 pandemic and the introduction of our first Zero Emissions Street.





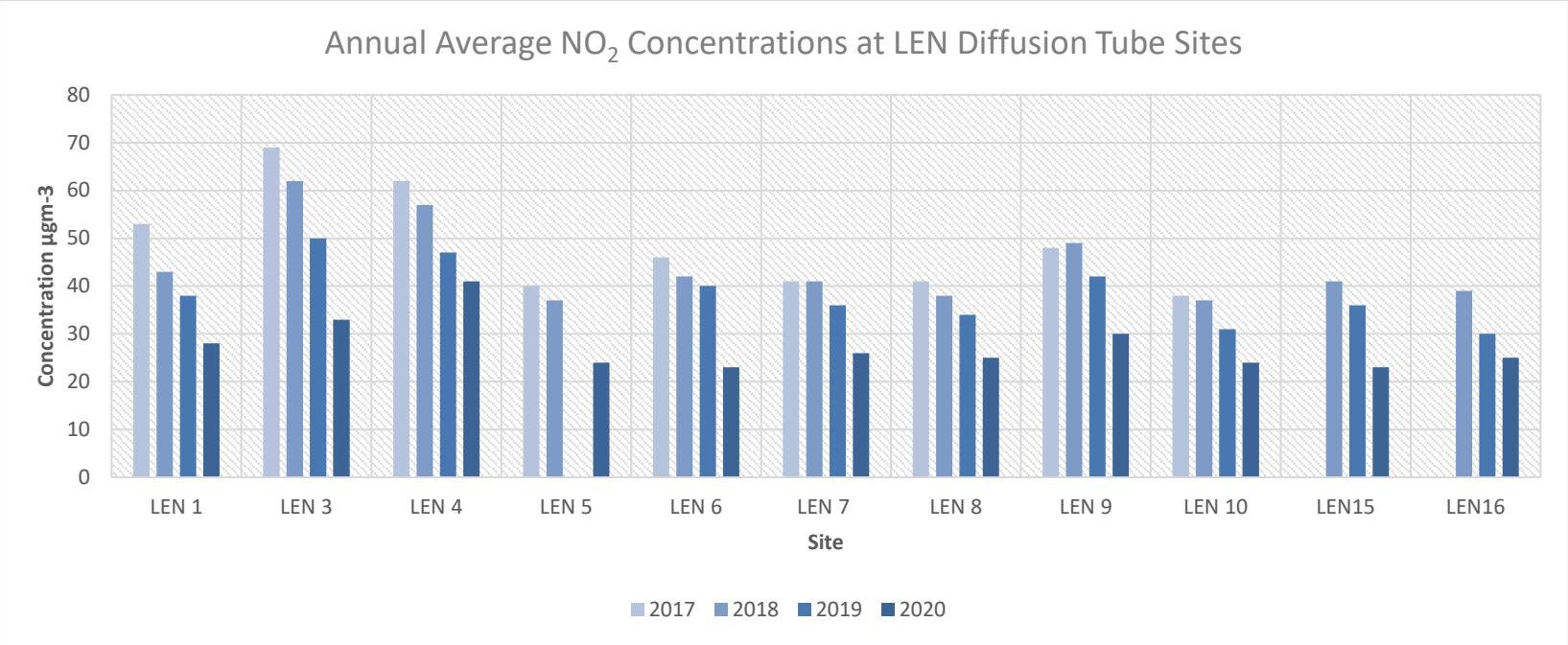
Bank Area

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. In 2019, all sites but one remained over the annual objective but in 2020 all sites except one, Bank 6 -King William Street, met the annual objective.



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. NO_2 concentrations in the area vary. All sites in the LEN area have had a reduction in NO_2 concentrations over the past 4 years. All sites met the annual objective for 2020



Transport Strategy Monitoring sites

Extra diffusion tubes were deployed in 2018 to fill the gaps in the monitoring network in order 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 3 years, some significantly so for example T9 – 150 Bishopsgate which has reduced by 51% since 2018.

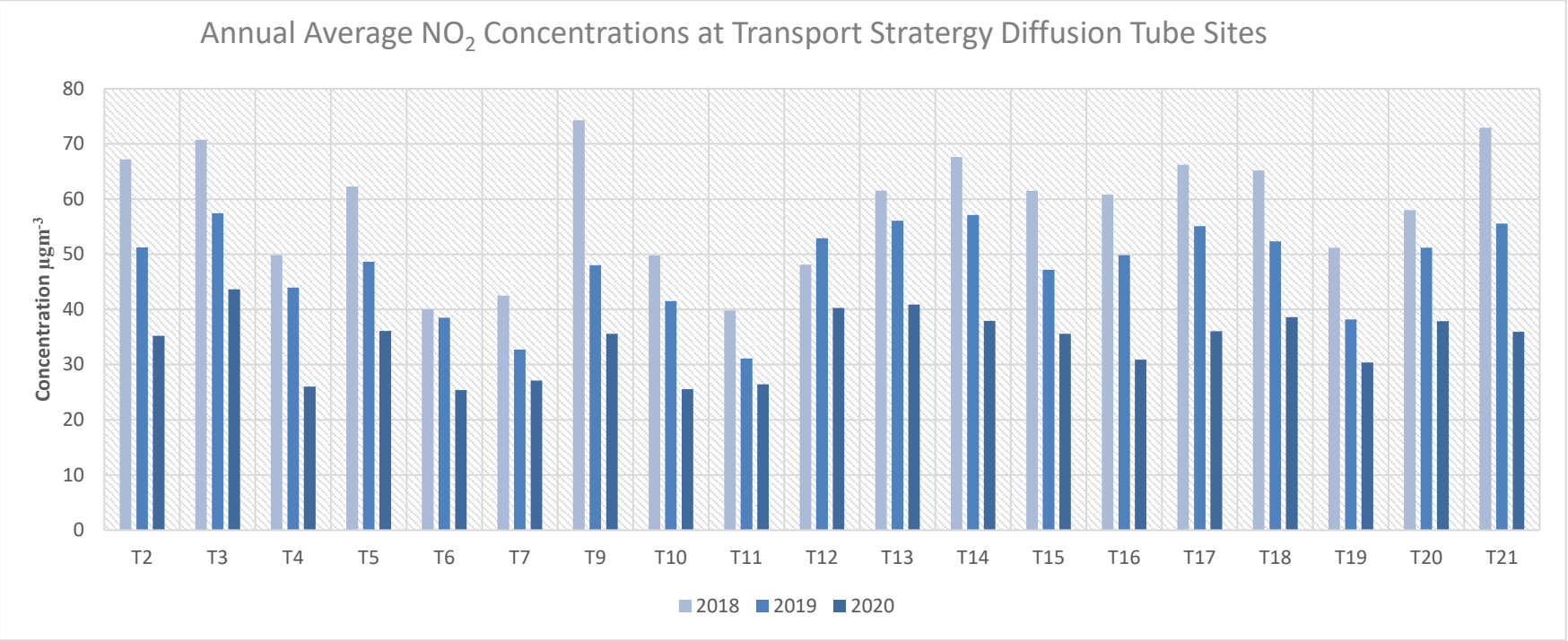

Annual Average NO2 Concentrations at Transport Stratergy Diffusion Tube Sites
Concentration µgm-3
80
70
60
50
40
30
20
10
0
T2
T3
T4
T5
T6
T7
T9
T10
T11
T12
T13
T14
T15
T16
T17
T18
T19
T20
T21
2018
2019
2020

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 2020 %([b])	2014	2015	2016	2017	2018	2019	2020
CT3 (Aldgate School)	N/A	95	0	0	0	0	0	0	0
CT4 (Beech St)	N/A	99	**175**	**212**	**144**	**67**	**27**	7	0
CT 6 (Walbrook)	N/A	87	**656**	**203**	**145**	**126**	**37**	15	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 in 2014, 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, as seen in the table above.

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

Site ID	Valid data capture for monitoring period %(a)	Valid data capture 2020 %(b)	2014	2015	2016	2017	2018	2019	2020
CT3 (Aldgate School)	N/A	92	20	23	24	23	21	19	16
CT4 (Beech St)	N/A	96	25	28	25	23	24	22	18
CT8 (Upper Thames St)	N/A	92	34	**41**	35	32	32	27	24

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 33%.

(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:

Whilst all sites saw an increase in PM10 concentrations from 2014 to 2015, 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. All sites meet the legal objectives and two out of three now also meet the World Health Organisation Guidelines.

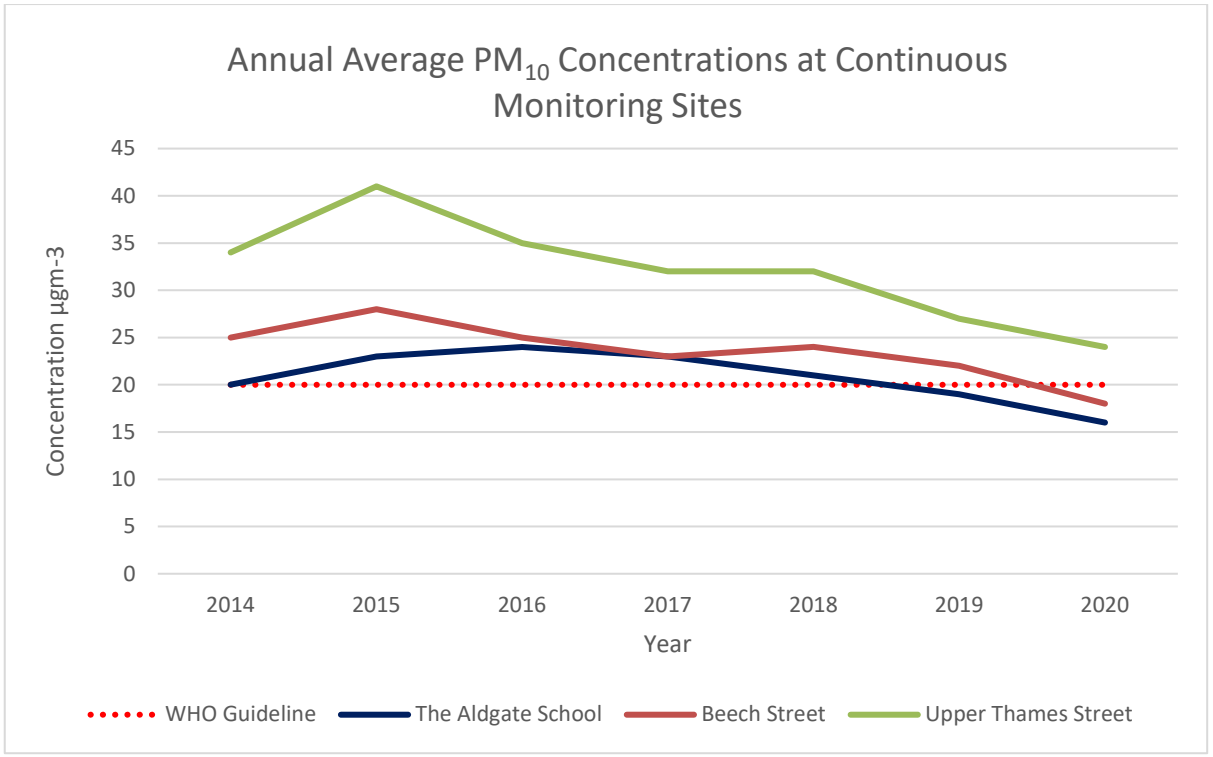

Annual Average PM10 Concentrations at Continuous Monitoring Sites
Concentration µgm-3
45
40
35
30
25
20
15
10
5
0
2014
2015
2016
2017
2018
2019
2020
Year
WHO Guideline
The Aldgate School
Beech Street
Upper Thames Street

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 2020 %[(b)]	2014	2015	2016	2017	2018	2019	2020
CT3 (Aldgate School)	N/A	92	5	3	11	8	3	7	1
CT4 (Beech St)	N/A	96	19	17 (41)	16	8	9	6	2
Ct8 (Upper Thames St)	N/A	92	25	**72**	**45**	30	25	14	9

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 2020 %[(b)]	2014	2015	2016	2017	2018	2019	2020
CT2 (Farringdon)	N/A	88	**26**	22/17**	16**	16	16	14	12
CT3 (Aldgate School)	N/A	87	-	-	15	14[c]	12	12	12

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**.

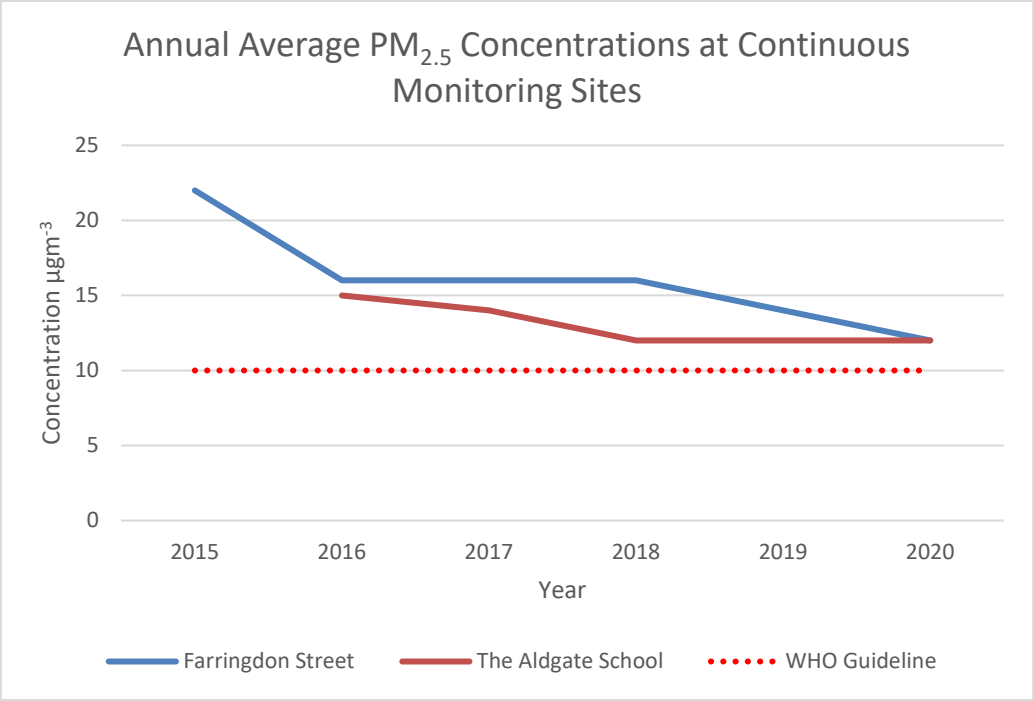
All means have been "annualised" in accordance with LLAQM Technical Guidance, if valid data capture is less than 75% and more than 33%.

(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%).

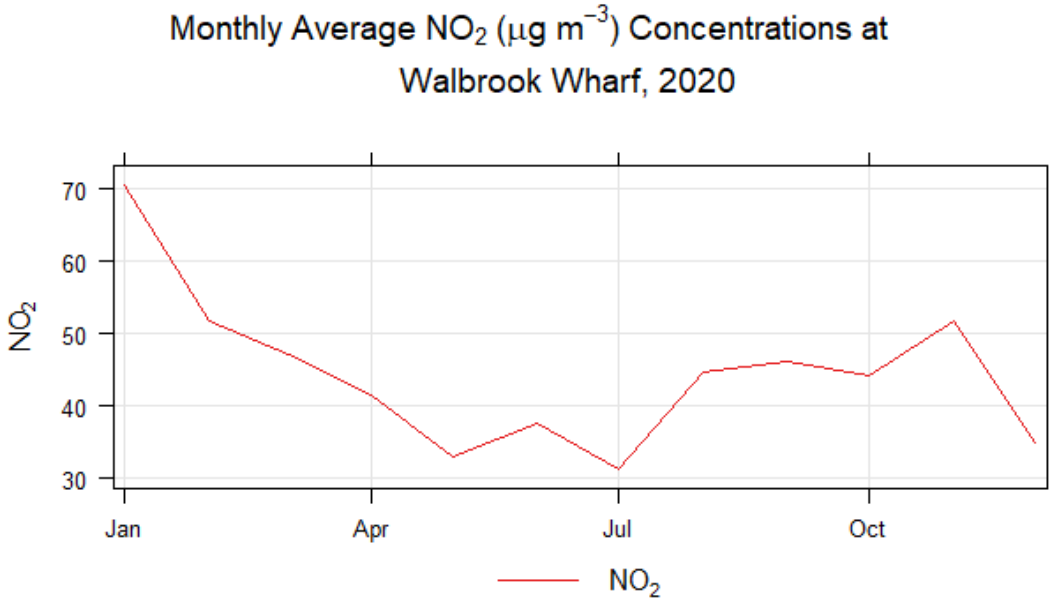
7 Year Trend:

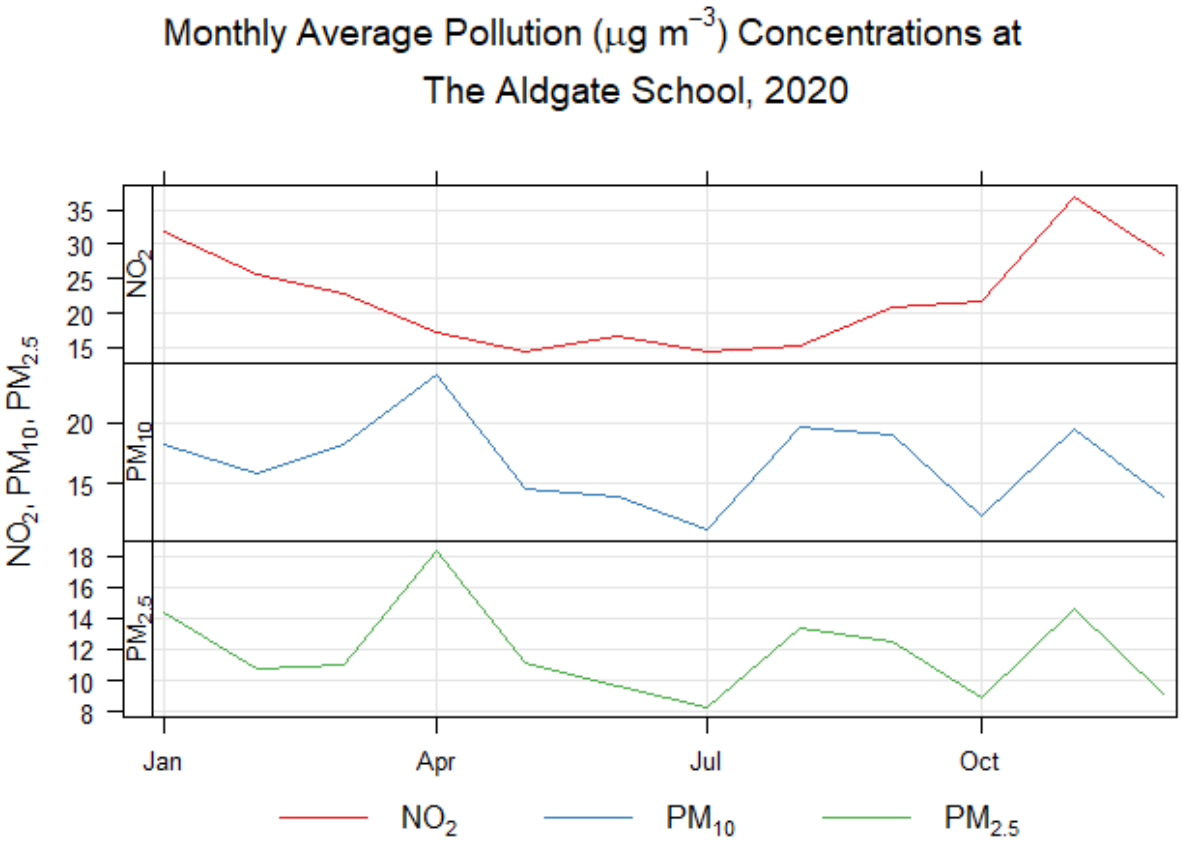
The Farringdon monitoring site has shown an overall decline in $PM_{2.5}$ concentrations over the past 7 years. However a new EU reference equivalent BAM was installed in August 2015, but was taken offline in October 2015 due to the Cycle Super Highway Works; therefore data capture is reduced for 2015 (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. The data for both sites is below the objective for 2020 but is still exceeding the World Health Organisation Guidelines.


Annual Average PM2.5 Concentrations at Continuous Monitoring Sites
25
20
15
10
5
0
Concentration µgm-3
2015
2016
2017
2018
2019
2020
Year
Farringdon Street
The Aldgate School
WHO Guideline

2. Impact of COVID-19 upon LAQM

Pollution Concentrations





Large drops in NO_2 were seen in March/April and the low levels remained all summer, gradually increasing later in the year when traffic volumes started to return

to nearer normal. The particulate levels however were more varied across the year and did not experience such a significant impact as was seen with NO_2.

Air Quality Monitoring

- Automatic monitoring data capture – No impact (over 75% data capture)
- Automatic monitoring QA/QC regime – Small impact. Routine calibrations undertaken less frequently than normal for part of the year and carried out by the equipment service and maintenance engineers due to low officer availability. Audits and services carried out on schedule as normal.
- Passive monitoring data capture – Small impact. 55 tubes required annualising due to having data capture less than 75%.
- Passive monitoring Bias Adjustment Factor – Large impact. There were only 48% of the normal number of available bias adjustment studies (2020 compared to 2019). Co-location studies were impacted by limited access to both sites meaning not enough months' worth of data were available to include our co-locations in the Defra National Bias Adjustment calculations.
- Passive monitoring adherence to changeover dates – Small impact. March tubes were left out until mid-April and May tubes ran from mid-April to the end of May, so 3 months became 2 monitoring periods.
- Passive monitoring storage of tubes – Small impact. March tubes stored for longer than usual prior to analysis due to temporary closure of the lab.

City Streets

Changes were made to 36 City streets in response to the pandemic to enable more space for social distancing for pedestrians and for safer cycling. & streets are to have the changes removed at the end of social distancing requirements with the remainder currently being proposed to be retained.

Temporary on-street measures include introducing:

- more space for walking and cycling, including increased cycle parking
- timed closures to motor vehicles on some streets (7am–7pm Monday to Friday), allowing limited access to premises for people with access needs, deliveries and servicing

- closures of streets to through traffic or other changes in operation, e.g. switching to one way or giving priority to buses
- an advisory 15 miles per hour speed limit
- signage to promote social distancing and encourage considerate behaviour

Our first Zero Emissions Street on Beech Street launched on the 18th March 2020. This was just days before the UK entered the first Covid19 lockdown and traffic levels were significantly reduced leading to a large drop in pollution levels. Traffic levels did not return to normal throughout 2020 which has made evaluating the impacts of the Zero Emissions Street scheme, on traffic volumes and air quality, hard to determine.

AQAP measures implementation

For the vast majority of AQAP measures the implementation was able to continue as normal in 2020, therefore there was only a small impact as per the impact matrix.

A few measures were delayed, such as the installation of an air quality sensor trial which was delayed until May 2021; our air quality best practice sharing event for borough officers for 2020 was delayed and then held virtually instead in March 2021. We ceased being able to host the Central London AQ cluster group due to an office move, however these meetings then went virtual anyway due to lockdowns. Our citizen science project at the Barbican, which started in 2020, had to be stopped and then restarted again in April 2021. Our new Traffic Management Order to deal with unnecessary engine idling was approved, however due to social distancing requirements enforcement has been postponed.

All Mayors Air Quality Fund projects continued, some with adaptions.

3. Action to Improve Air Quality

3.1 Air Quality Action Plan Progress

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

Table J. Delivery of Air Quality Action Plan Measures

No.	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} 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 2020 with a new BAM and two M200E API NOX analysers were replaced, one with a T200 NOx analyser and one with a Ecotech Serinus NOx analyser. During 2020, we measured nitrogen dioxide at 106 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	The 2019 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.

No.	LLAQM Action Matrix Theme	Action	Progress
		Guidelines and demonstrating how pollution has changed over time.	
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.	In March 2020, discussions with Airlabs was undertaken to trial an air quality sensor. Due to the COVID pandemic, the installation was delayed until May 2021. An AirNode sensor was installed at Aldgate School. 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 won't be met, develop additional action plan for approval.	An area compliance assessment was undertaken for the year 2019, 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 2019 was 67%. It was calculated using computer modelling, together with all of the air quality 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.	With support from the Supply Chain Sustainability School, we held an event for London Local Authority officers and industry members regarding 'Improving Air Quality through Procurement in the Public Sector'. This event, on 9th March 2020, was held at the Guildhall with 100 attendees from a range of businesses and local authorities in London.

No.	LLAQM Action Matrix Theme	Action	Progress
			We hosted two webinars in conjunction with Ricardo-AEA, to disseminate Combustion Plant Best Practice recommendations. The first webinar took place on 16th July 2020. It was for Local Authority officers nationwide and covered the management and mitigation of generator emissions. The event was attended by over 130 people. On this same theme, we held a second webinar with Ricardo-AEA, specifically for managers of combustion plant within the Square Mile. This event was held on 28th October 2020 with 40 people in attendance.
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.	Following the above webinars 'Generator Emissions – Guidance for Local Authorities' and 'Reducing emissions through management and operation of combustion plant' a guidance document was published 'Combustion plant: Recommendations for best practice'. This is available on the City's Air Quality webpages (https://www.cityoflondon.gov.uk/assets/Services-Environment/best-practice-combustion-guide.pdf). A webinar covering the combustion plant best practice recommendations for Facilities Managers and Operators was held on the 28th October. We will continue to promote the guidance and hold further training sessions for our own facilities managers.
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 7 buildings. Gas consumption, and corresponding NOx emissions, decreased by 18% between 2019 and 2020 100% of the electricity used by the City Corporation is from renewable sources.

No.	LLAQM Action Matrix Theme	Action	Progress
			The adoption of the City Corporation's fully costed Climate Action Strategy in 2020 will lead to the delivery of significant reduction in both carbon and air pollutants from buildings owned by the City Corporation over the next 5 years
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.	In March 2020, an electric vehicle charging infrastructure action plan was developed. The recommendations will be delivered over the next few years. Work has progressed to provide more residential charge points in residents car parks through grant funding from Officer for Low Emission Vehicles (OLEV). Electric vehicle charge points have been installed in Baynard House car park. A new ventilation system installation is progressing through design and procurement stages.
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.	We implement the following vehicle purchasing hierarchy: fully electric; plug in hybrid; petrol hybrid, Euro VI petrol; Euro VI diesel We continue to reduce the size of our fleet and expand the number of electric vehicles. We currently have 12 in service plus 3 petrol / electric hybrid. Five fully electric refuse collection vehicles are now used in our refuse collection contract. We have installed 20 new electric vehicle charge points to support our vehicles. 100% of the electricity used by the City Corporation is from renewable sources, so electricity used to charge corporate vehicles isn't contributing to air pollution outside the City of London boundary.

No.	LLAQM Action Matrix Theme	Action	Progress
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 9 electric vehicles and 10 hybrid vehicles. A further 5 electric refuse collection vehicles (RCVs) are now in use as part of the refuse collection contract.
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 new 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, 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 team supported the development of the Climate Action Strategy published in November 2020. The strategy goals for emission reduction support the aims of the Air Quality Strategy, specifically: • Net zero by 2027 in the City Corporation's operations • Net zero by 2040 in the Square Mile • Net zero by 2040 across the City Corporation's full value chain

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			The air quality team is working alongside the Strategic Transport team in the Transport Strategy review working group to ensure air quality is a key priority within the strategy.
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 continues to be used to influence the contents of the Environment Bill.
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.	We are implementing the following Mayors Air Quality Fund projects, working in collaboration with a wide range of organisations: • 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 • 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.	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.

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		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.	Unfortunately, due to an office move we were no longer able to host the Central London AQ steering group. This was moved to a rotating chair & host system but has since been held virtually due to Covid19 and home working.
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 continue to support research into the impact of urban form on air quality and provided a black carbon monitor for a researcher to take measurements around the City to incorporate into the study as well as NO_2 diffusion tubes. We are sponsoring an MSc student to work on a thesis to evaluate the effectiveness of the City Corporation citizen science air quality monitoring programme.
21	Continue to support the Third Sector to deliver air quality improvement projects and raise awareness amongst London's communities.	Judge the Sustainable Transport Category of the Sustainable City Awards. Support the work of Environmental Protection UK with events, meeting space and administrative support.	We provided a representative for the judging panel for the 2021 Sustainable City Awards We supported three Environmental Protection UK Air Quality Committee meetings and three Trustee meetings.
22	Support the Port of London Air Quality Strategy through air quality monitoring and in taking wider action to reduce emissions	Monitor air pollution along the river.	Nitrogen dioxide monitoring continues at two locations adjacent to the river – Southwark Bridge and London Bridge.

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	from vessels on the river Thames.	Source funding to support the PLA to pilot measures to reduce emissions from vessels using the river.	We are working with the Port of London Authority on a three-year Clean Air Thames project to trial engine emission retrofit on river vessels. The project is being led on our behalf by Cross River Partnership.
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, Healthy Streets Everyday project and Clean Air Villages Defra funded project. From April 2021-March 2021, the City Corporation was part of CRP's Clean Air Village (CAV) 3 programme, funding a CAV from Monument to Houndsditch, focusing on engaging with the local community of shops, tourists and students and religious organisations. Due to the Covid19 pandemic, in person engagement was minimal so an 'Air Quality Ambassador' scheme was put in place. The aim was to train individuals to run air quality sessions and events within their own friend/family/community groups. This resulted in a Linkedin group 'Clean Air Community' which is open to any individual in London who has an interest in improving air quality. Over the past year, Clean Air Thames Round 1 vessels belonging to GPS Marine Contractors Ltd. and the Port of London Authority completed pre-retrofit exhaust monitoring. Round 2 of funding was launched in December 2020 with the London Metropolitan Police awarded funding for 2 vessels in March 2021.
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 responded to 5 enquiries and consultations on Medium Combustion Plant permits.

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	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.	
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 continued to provide one-to-one support to businesses who committed to an Air Quality Pledge to reduce their emissions profile, support local action to improve air quality and raise awareness amongst employees about air pollution. We also reached out to engage with organisations new to the programme, however we only connected with 2 new business due to the Covid19 pandemic. We also connected with religious organisations, with 6 churches considering options for an Air Quality pledge. We completed extensive engagement with local cargo bike companies and have put together resources to encourage uptake of cargo bike services in a company's supply chain. A new 'Personal Exposure' toolkit was created and promoted to be used by organisations to educate their staff on the health impacts of air pollution and actions individuals can take to improve local air quality. This year, we partnered with Clean City Award Scheme to provide a new 'Air Quality and Climate Change' award with 20 large companies submitting applications. Through this partnership we shared 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.

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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. Ensure City Corporation fleet of vehicles meet the ULEZ criteria.	The introduction of the Mayor's ULEZ was widely publicised through our social media channels and business networks. The six-month findings of ULEZ were shared amongst the business network and through our Air Quality newsletter. 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.
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 including the Fleet Street Area Healthy Streets plan for which the scheme development commenced at the end of 2020. 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 Beech Street zero emission street pilot was developed and went live in March 2020.

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			City Cluster: zero emission plans to be introduced in phased approach with street access restrictions for St Mary Axe and Leadenhall Street. Some emission control restrictions may be implemented in 2022 if the feasibility is agreed. POLIS study - An application for a project monitoring servicing activity in the area with a view to understanding how to shift this activity to zero emission modes will be taken forward if funding is received (submitted May 2021) Barbican and Golden Lane: Delivery of a Zero Emission Zone (ZEZ) is not certain given the need to consider the outcome of the Beech Street Zero Emission Street pilot, which runs through the middle of this area. Traffic restrictions in the London Borough of Islington may have an impact on the decision to develop a ZEZ in this location.
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.	Focus has been on providing temporary changes to the City's streets in order to provide more space for people walking and to socially distance as a result of COVID-19. This has included street closures and pedestrian priority streets. It is likely that at least some of these changes will be converted into Experimental Traffic Orders and assessed for permanent change to improve the experience of people walking. Temporary footway widening has been completed at Bank junction ahead of the All Change at Bank transformational project. Other streets have been subject to pavement widening across the Square Mile as a result of

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			the City's response to COVID-19. Some of these will be continued and assessed for permanent change.
		Reduce the amount of time people wait for a green signal to cross the road.	Signal timing changes were made on Puddle Duck and Mansion House crossings
		Improve specific walkways such as the riverside walkway and Barbican High-Walk.	Improvements to the Globe View section of the riverside walkways have been progressed to detailed design. Highway works for Puddle Dock Pedestrian Route to the riverside are underway.
		Improve awareness of traffic free walking routes.	On hold due to COVID-19
		Timed and temporary street closures	Several timed and temporary street closures are underway primarily to assist in reducing the transmission of COVID-19. I This will have a positive impact on air quality in those locations.
		Car free days.	We took part in a two-week virtual campaign to celebrate Car Free Day 2020.
		Lunchtime Streets – at least 5 to be in operation by 2025.	No activities have taken place throughout 2020 due to lack of funding and COVID-19.

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		Complete Legible London maps and directional signs.	Street level and Barbican 'highwalks' installation have been largely completed.
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 March 2020 under an experimental traffic order. NO_2 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.
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.
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	We have stimulated the marketplace for consolidation services through the planning process, with 13 s106 agreements for use of a physical consolidation centre agreed by developers. Four sites have been proposed for use as last mile logistics hubs, with London Wall Car Park appointing Amazon as the operator for a logistic hub covering part of the car park. On hold.

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		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	A planning application to reinstate Swan Lane Pier was not approved as the freight offering was not acceptable. No further progress to date. No progress to date
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.	On-street and off-street cycle parking spaces for standard bikes and dockless hire bikes have been implementation partly through the City's COVID-19 response. We continue to secure long and short stay cycle parking in new development. These include a requirement to provide 5% of spaces able to accommodate larger non-standard cycles. Two cycle safety roadshows were delivered in partnership with City of London Police at St Bartholomew's Hospital and Moor Lane

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		Work with TFL and cycle providers to improved cycle hire provision. 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.	Two new Santander cycle hire docking stations were installed on Victoria Embankment and Queen Victoria Street in December 2019. Several temporary protected cycle lanes have been implemented as part of the COVID-19 transport recovery measures, including on Bevis Marks, Fleet Street and Threadneedle Street.
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	The Energy Savings Trust has completed an assessment of future charge point requirements to 2025 across the Square Mile, with reference to the Mayor of London Electric Vehicle Infrastructure Task Force. An action plan has been developed to deliver the recommendations over the next few years. During 2020: • A rapid charge point for taxis is in operation on Noble Street • A rapid charge point has been installed at Billingsgate Market • 6 rapid charge points have been installed in Baynard House Car park (but not yet operational) • 50 standard electric charge points are available to the public in our car parks • 22 charge points installed in Barbican residential car parks; further 30 points agreed for installation in Spring 2021, following On-street Residential Charge point Scheme (ORCS) funding. • Electric charge points are being upgraded a Walbrook Wharf to support the refuse collection vehicles

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			• 20 charge points have been installed to support City Corporation owned electric vehicles • Feasibility assessments on CoL housing estates to install charge points for residents. In principle ORCS funding available for implementation 2021-22
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 in 2020 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 2020 and went out for consultation in spring 2021.
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. An internal webinar for staff was held with Idling Action to encourage any staff who drive to support the project and to pledge to not idle. 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

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			the impact of the pandemic and lack of traffic in the City the provision has not yet been rolled out. No FPNs/PCNs were issued for idling in 2020. This is due to social distancing requirements meaning face to face enforcement has been put on hold. The City Corporation is jointly leading the Pan London Idling Action Project with Camden. In 2020 we developed the Idling Action advertising campaign comprising 4 campaign images for billboards, petrol stations and social media, a radio advert and a short video. The campaign went live in Feb 2021. Action is taken following complaints of vehicle engine idling, and signs erected, and letters sent where necessary. The number of complaints in 2020 was very low.
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.	In 2020, a review was undertaken to ensure tariffs would remain in line with the 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. The 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.

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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.
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.	In 2020 the City Corporation considered all the comments made in response to previous consultations on our draft Local Plan, called City Plan 2036. In spring 2021 the City Plan was published again for its final stage of consultation. The City Corporation Draft Local Plan (City Plan 36) reflects the London Plan in prioritising non combustion and zero emissions heating and energy systems. Once the City Plan 2036 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 the air quality officer to ensure planning policies are being adhered to and if combustion plant is proposed the developers are asked to reconsider their plans. The adoption of the City Corporation Climate Action Strategy in 2020 will result in even more non combustion technology in the Square Mile going forwards

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			In 2020, 27 planning applications for new developments proposed to install zero emissions heating plant, mainly heat pumps.
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. 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.	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. If combustion plant is necessary, conditions are applied requiring plant to meet NOx emissions standards. Most planning applications received in 2020 incorporated zero emissions heating solutions, most commonly heat pumps, instead of combustion plant.
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 were just 2 applications in 2020.

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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.
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 some significant changes to planning use classes recently introduced by the Government, some further changes are required to the Proposed Submission City Plan 2036. As a result, the public consultation is scheduled 2021. 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. During 2020 the number that were undertaken were affected by the pandemic. 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

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			sources are not available, sites use the least-polluting diesel equipment possible. We have commissioned 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. This guide will be applicable to construction sites.
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 2021.
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)	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. During December 2020- January 2021, a total of 40 audits were undertaken. • 3 sites achieved Self-Compliant status, 4 sites worked towards and achieved Compliance and 0 sites failed and were recorded as non-Compliant. • 28 sites upon arrival/engagement were completed and 5 sites had No NRMM within scope (37-560kW) presently deployed. • 0% of Site Non-compliance is due to sites being unable to evidence a machine's compliance. This means that the Type Approval Number was not found on the engine, and further, suitable supporting documentation was not available for the machine

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			• 0% of Site Non-compliance is due to 1 or more machines not meeting the required emission standards. • 0% of Non-Compliant sites have refused our officers access and/or stated that they will not cooperate with the NRMM Scheme. This caused their sites to be recorded as 'Declined Audit'. • 0% of Non-compliance is due to sites not using the online NRMM London Register, even though all their machinery is of the stage required by the Mayor's SPG. 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.
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.	The Code of Practice for Deconstruction and Construction Sites will be available in 2021. Additional requirements for emissions from plant and equipment will be incorporated into the next edition. The current CoP is compatible with existing London wide standards. It also encourages the use of the lowest emission options.
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.	Funding for a trial will be sought during 2021. We commissioned 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 will recommend the inclusion of zero and low emission plant in the Street works contract.

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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.	We commissioned a guide to low emission and alternative technology and fuels which will be made available in 2021 to support the uptake of lower emission combustion plant A range of innovative technologies are being developed, including emission Stage V, retrofitted emission reduction systems, electrification, and hybrid power solutions. However, these technologies are new and their suitability and supply as they are developed will continue to be investigated via the Pan London NRMM project. In 2020 we developed 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: 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.	A webinar 'Generator Emissions – Guidance for Local Authorities' was held in July 2020. The advice from this event was incorporated into guidance document 'Combustion plant: Recommendations for best practice' which is available on the City's Air Quality webpages (as above). A webinar covering the combustion plant best practice recommendations for Facilities Managers and Operators was held in October 2020. We will continue to promote the guidance and hold further training sessions for our own facilities managers.
54	Continue to ensure that emissions from chimneys are dispersed as far as possible	Issue authorisations for Chimney Heights for new appliances.	Two Chimney Height approvals were issued during 2020.

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	using the provisions of the Clean Air Act 1993.		
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.
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.	Our factsheet 'Smoke Control from Food Premises', which provides information on smoke provisions and advice to food premises on exempt appliances and authorised fuels, has been made available on our air quality webpages. We gave an online presentation about the fact sheet and associated work to other London Boroughs to share best practice. Our plan to incorporate a system of recording premises using solid fuels for cooking into regular food inspections and disseminate the factsheet directly to food businesses has been delayed due to the impact of COVID19 restrictions.
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.
58	Assess options to improve and further develop the free CityAir	Source funding for improvements to the CityAir Smart Phone App.	We continue to support and promote AirTEXT through a yearly subscription.

No.	LLAQM Action Matrix Theme	Action	Progress
	Smart Phone App and continue 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 now use our free CityAir app which is being 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. During 2020, the City Corporation website was rebuilt, giving us an opportunity to revise and increase the air quality information we have available. We have set up 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		Attend events with an information stall. Provide information for newsletters	As part of Aldgate Winter Festival, we held an online lunchtime session for community members introducing the work of the Air Quality team in the City Corporation.

No.	LLAQM Action Matrix Theme	Action	Progress
	Increase awareness of air pollution amongst the City of London residential community.	Attend residents' meetings Support residents who wish to measure air pollution where they live.	Throughout the year we continue to provide information as relevant for e-newsletters by 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. We support residents who request information to undertake their own air quality monitoring and initiated a Citizen Science air quality monitoring project for residents starting in March 2020 with 70 participants. Unfortunately, this had to be delayed to 2021 due to the controls in place to manage the impact of the COVID19 pandemic. We supported the Transport Team at resident's meetings (e.g. during the Beech Street consultation) and ran air quality briefings for residents in connection to air quality specific projects.
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 2020, we held an online webinar for businesses promoting the new 'Personal Exposure Toolkit'. Through email, newsletter and social media promotion, we encouraged schools and community groups to engage with an online day of events held by Global Action Plan.
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	Action plans have been produced for all five City schools and four nurseries, Engagement opportunities in 2020 have been restricted to on-line events. All nurseries have been contacted and offered the opportunity to sign up for the GLA's air pollution alerts. Detailed monitoring has been offered to all 5 schools in the Square Mile and nurseries at locations where there is a risk of limit values being exceeded. To date, monitoring using diffusion tubes is taking place at 3 out of 5 schools and 2 nurseries.

No.	LLAQM Action Matrix Theme	Action	Progress
			Data from the permanent background monitoring site at the Aldgate School continues to be used to produce quarterly reports for the School Governors.
64	Continue to support Barts Health NHS and other health care facilities to reduce their own impact on local air pollution and assist vulnerable patients in reducing their exposure to pollution.	Support hospital events. Liaise with staff to reduce emissions and improve the understanding of air quality. Assess air quality around health care facilities	Engagement with Barts Health has identified areas to improve communication amongst staff and patients. A variety of messaging tools will be used over the next year to improve the understanding on air quality. Barts Health NHS Trust was issued with an environmental permit to operate the energy centre in 2020.
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. A new 'Personal Exposure' toolkit was created and promoted to be used by organisations to educate their staff on the health impacts of air pollution and actions individuals can take to improve local air quality. We continue to encourage businesses to promote the use of our free CityAir app, airTEXT or LondonAir app for employees to receive air quality alerts. This year, we partnered with Heart of the City, New London Architecture and Cheapside Business Alliance to provide a webinar 'Home Working – impact on air quality and climate emissions' with a 'Top 10 tips to reduce emissions at home' resource.

4. Planning Update and Other New Sources of Emissions

Table K. Planning requirements met by planning applications in City of London in 2020

Condition	Number
Number of planning applications where an air quality impact assessment was reviewed for air quality impacts	21
Number of planning applications required to monitor for construction dust	21
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	8
Number of developments where an AQ Neutral building and/or transport assessments undertaken	18
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.	45 registered, 3 self-compliant, 4 compliant, 29 not cold engaged, 11 cold engaged, 28 sites complete, 5 no NRMM

All planning applications are allocated to the Air Quality Officer to review and comment on if relevant. The Air Quality Officer recommends conditions for the Planning Officers to apply, should the development be approved. Our conditions include an NRMM condition and a condition obliging the developers to adhere to the guidelines outlined in our Air Quality Supplementary Planning Document.

4.1 New or significantly changed industrial or other sources

No new sources identified.

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 as needed
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 as needed

Analyser replacements

A number of analysers were replaced in 2020 as we progress through our plan to ensure resilience for our air quality monitoring network.

- Walbrook Wharf M200E NOx API replaced with a T200 NOx analyser on 20th May 2020
- The Aldgate School (John Cass School) M200E NOx API replaced with an Ecotech Serinus NOx analyser on 30th January 2020

- Upper Thames Street TEOM PM10 replaced with a BAM PM10 on 29th April 2020

PM_{10} Monitoring Adjustment

PM_{10} data from the two TEOM sites (CT4 Beech Street and CT8 Upper Thames Street) have been adjusted using the Volatile Correction Model (VCM). The BAM data at CT3 and CT8 from replacement (PM_{10}) has been corrected in line with the EU reference equivalent method by dividing by 1.211.

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.
- Laboratory tube precision for 2020= 91.6% Good Precision
- Air NO_2 PT Scheme results = 75% Jan-Feb 2020, No results May-June & Jul-Aug 2020, 75% Sep-Oct 2020
- Bias adjustment factor from the National Bias Adjustment Spreadsheet available on the LAQM Support Website= 0.82 (Spreadsheet Version Number 03/21
- A co-location study was carried out at Walbrook Wharf Roadside site however data capture was low
- The bias adjustment factor being applied to the annual means from the diffusion tubes is **0.82** from the National Bias Adjustment Spreadsheet

Factor from Local Co-location Studies

Not available due to low data capture at co-location sites

Discussion of Choice of Factor to Use

Due to Covid 19 our data capture for our co-location sites was low so the national bias adjustment factor was used. This was taken as the average from 14 studies.

Table L. Bias Adjustment Factor

Year	Local or National	If Local, Version of National Spreadsheet	Adjustment Factor
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
2014	National	03/15	0.97

A.3 Adjustments to the Ratified Monitoring Data

Short-term to Long-term Data Adjustment

- All continuous analysers but one met the 75% data capture criteria. Farringdon Street PM2.5 has been annualised. Details in the table below.
- Diffusion tube data for sites that had data capture of less than 75% were annualised using data from our Continuous site at The Aldgate School. Details in the Table M.

Farringdon Street (CT2) adjustment

Original mean -12 μgm^{-3}, Annualisation Factor – 1.023
Annualised Mean –12.3 μgm^{-3}

Site 1 – Camden Bloomsbury. Annual mean- 9.3, Period mean – 9.3, Ratio – 1.002

Site 2 – K & C North Ken. Annual mean- 8, Period mean – 7.8, Ratio – 1.038

Site 3 – Westminster Horsferry Road. Annual mean- 11.5, Period mean- 11.2, Ratio- 1.029

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 – The Aldgate School	Raw Data Annual Mean (µg m^{-3})	Annualised average (µg m^{-3})
CL40	1.00	39.76	39.93
LEN5	1.03	27.92	28.67
LEN6	1.00	28.07	28.17
LEN7	0.92	32.43	29.92
LEN9	0.97	36.79	35.69
LEN15	0.96	29.01	27.99
LEN 16	0.92	31.11	28.46
Bank 6	0.92	55.27	50.81
Bank 8	1.03	35.15	36.14
Bank 9	0.88	42.07	37.21
Bank 10	0.97	39.37	38.37
Bank 11	1.03	30.55	31.54
Bank 12	1.03	37.28	38.33
Bank 13	0.92	36.50	33.66
Bank 14	0.92	42.24	38.96
Bank 15	0.92	44.16	40.72
Bank 16	0.83	53.50	44.40
Bank 19	1.00	28.80	28.91
Bank 22	0.84	49.05	40.05
SJC1	0.73	35.62	26.16
SJC6	0.73	37.15	27.28
SJC8	0.73	35.89	26.36
WW1	0.87	57.65	49.94

WW2	0.87	59.09	51.19
WW3	0.87	56.49	48.94
Liv St	1.00	42.94	43.12
OS1	0.93	26.42	24.60
Gdm Yrd	0.89	34.10	30.20
N1	1.00	26.92	27.02
CLS2	0.84	29.83	25.05
BS1	0.82	55.66	45.44
BS4	0.97	31.96	31.01
BS9	0.92	31.62	29.16
BS13	0.97	33.10	32.12
BS14	0.92	32.72	30.19
BS15	0.94	47.24	44.45
BS16	1.04	31.29	32.53
BS17	0.87	42.81	37.09
BS18	0.87	48.28	41.82
BS20	1.04	26.56	27.61
BS21	1.03	37.06	38.06
T2	0.92	44.50	40.72
T3	0.97	51.85	50.30
T4	1.00	31.61	31.76
T6	1.00	30.83	30.94
T7	1.02	29.57	30.19
T9	0.91	44.89	40.76
T10	0.95	30.36	28.97
T11	0.91	32.69	29.88
T12	0.89	51.76	46.30
T14	0.91	47.83	43.44
T15	0.93	43.84	40.59

T18	0.85	52.19	44.45
T19	0.95	36.10	34.44
T20	1.02	41.34	42.22

Appendix B Full Monthly Diffusion Tube Results for 2020

Table O. NO_2 Diffusion Tube Results

Site ID	Valid data capture for monitoring period %[a]	Valid data capture 2020 %[b]	Jan	Feb	Mar 06.03-15.04	Apr	May 14.04-03.06	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual mean – raw data	Annual mean – bias adjusted
CL5	N/A	83	57.52	56.42	37.90		24.65	33.00	33.60		30.24	39.80	47.55	36.64	39.73	32.58
CL38	N/A	83	42.21	37.03	37.20		21.88	25.90	23.54	33.82	35.37	36.96	43.38		33.73	27.66
CL39	N/A	83	54.83		45.40		27.20	27.60	19.46	41.50	47.25	37.90	41.27	41.41	38.38	31.47
CL55	N/A	92	35.82	26.33	25.30		15.58	16.90	14.18	18.59	22.78	23.55	33.51	27.27	23.62	19.37
CL40	N/A	58	49.21	49.08					33.65	36.42	36.36	35.08		38.49	39.76	32.74
BANK 1	N/A	83	68.49	48.00	50.7			36.37	33.05	43.87	48.06	42.51	50.10	44.66	46.58	38.20
BANK 2	N/A	83	58.24	49.71	45.4			29.33	28.92	37.12	43.26	39.41	48.83	43.77	42.40	34.77
BANK 3	N/A	83	50.63	48.56	36.8			25.05	24.80	28.60	33.14	36.60	46.00	36.85	36.70	30.10
BANK 4	N/A	83	61.70	50.47	39.1			29.05	32.62	39.35	49.82	43.69	44.10	41.50	43.14	35.37
BANK 5	N/A	83	68.37	60.18	44.7			28.61	31.52	34.83	39.64	42.72	47.02	40.03	43.76	35.88
BANK 6	N/A	67	59.71	56.68	52					65.62	48.54	51.49	53.82	54.28	55.27	**41.67**
BANK 7	N/A	83	44.70	39.93	40.2			27.35	24.38	32.96	35.46	36.07	47.82	41.93	37.08	30.41
BANK 8	N/A	67			41.2			28.40	25.79	29.28	36.58	37.67	41.55	40.75	35.15	29.64
BANK 9	N/A	67	51.27	40.91	37.4					49.17	38.06	37.18	43.13	39.42	42.07	30.51
BANK 10	N/A	67		52.61	39.7				25.76	34.44	37.68	38.70	43.69	42.41	39.37	31.46
BANK 11	N/A	50		34.65				25.57	21.08	27.94	32.82		41.23		30.55	25.86
BANK 12	N/A	67			55.7			28.59	27.36	33.92	37.59	31.84	43.55	39.70	37.28	31.43
BANK 13	N/A	67	49.08	44.89					17.65	28.87	31.17	31.50	50.28	38.57	36.50	27.60
BANK 14	N/A	67	52.56	54.37					27.59	37.21	37.99	36.92	47.78	43.52	42.24	31.94
BANK 15	N/A	67	57.88	48.54					34.06	39.87	45.06	37.87	50.71	39.29	44.16	33.39
BANK 16	N/A	42	62.80	61.55						42.25		46.72	54.17		53.50	36.41
BANK 17	N/A	75	60.84	54.99	37.5				29.92	38.23	40.48	42.55	49.19	46.21	44.43	36.44
BANK 18	N/A	83	50.84	46.43	40.8			26.71	27.26	33.89	32.63	33.83	38.39	35.65	36.64	30.05

BANK 19	N/A	67		34.67				22.72	20.97	26.36	28.58	29.98	36.67	30.46	28.80	23.70
BANK 20	N/A	75		61.71	48.3			32.96	33.48	38.46	43.41	43.44	49.28	39.59	43.40	35.59
BANK 22	N/A	50	63.44	52.10							48.63	41.43	49.03	39.69	49.05	32.84
BANK 23	N/A	75	48.26	39.10				30.46	26.40	38.48	40.07	38.89	44.72	40.86	38.58	31.64
LEN 1	N/A	83	50.37	45.87			20.44	27.03	25.41	27.54	32.64	34.87	42.64	36.89	34.37	28.18
LEN 3	N/A	67	57.52	53.99				28.74		33.30	33.38	28.52	46.04	41.43	40.36	33.10
LEN 4	N/A	75	60.68	58.47				35.18	37.78	50.34	51.61	48.69	57.97	48.49	49.91	**40.93**
LEN 5	100	58						20.53	19.90	22.86	28.05	29.17	39.69	35.21	27.92	23.51
LEN 6	N/A	67		46.78				18.07	18.43	22.45	24.69	26.06	37.31	30.76	28.07	23.10
LEN 7	N/A	67	41.33	41.07				20.64	18.52		27.28	27.89	43.19	39.50	32.43	24.53
LEN 8	N/A	75	37.86	40.05				18.96	20.90	25.18	29.98	30.95	40.14	33.85	30.87	25.32
LEN 9	N/A	67	44.70					27.60	29.01	30.57	39.52	37.04	47.02	38.87	36.79	29.27
LEN10	N/A	83	37.36	40.42	32.4		16.35	18.20	16.67	22.58	28.74	28.33	46.00		28.71	23.54
LEN15	N/A	50						21.07		24.85	26.20	27.31	38.59	36.07	29.01	22.95
LEN16	N/A	58	38.55	36.79				19.58		23.46	30.09	27.71	41.56		31.11	23.34
SJC1	N/A	33	37.12	31.51									37.57	36.30	35.62	21.45
SJC6	N/A	33	41.08	32.40									38.69	36.42	37.15	22.37
SJC8	N/A	33	39.97	31.87									36.59	35.14	35.89	21.61
PLA5	N/A	83	49.87	45.26	37.6			22.05	22.08	29.02	35.04	34.79	44.86	32.98	35.35	28.99
PLA6	N/A	75	41.87	31.83	28.8		17.60	21.07			32.70	32.74	40.38	35.77	31.42	25.76
Liverpool St	N/A	58	57.37	35.93					28.48	40.95	47.26	44.49		46.09	42.94	35.36
Fenchurch Ave	N/A	75	43.86	39.37				22.94	19.13	25.27	27.38	31.01	42.66	30.44	31.34	25.70
Fetter Lane	N/A	92	50.10	44.75	39.6		23.03	26.65	25.28	29.88	37.86	35.03	44.15	34.65	35.54	29.15
OS1	N/A	58	34.80	28.27					16.65	20.17	25.45	25.44	34.19		26.42	20.17
OS3	N/A	83		44.15	37.8		17.27	19.52	16.82	25.67	28.93	30.48	40.80	35.26	29.67	24.33
OS5	N/A	75		42.50	33.1		20.26	21.24		27.95	32.60	31.10	37.17	34.31	31.14	25.53
Goodmans Yard	N/A	50	43.53	39.30						34.14	36.89		13.27	37.49	34.10	24.77
Goldman	N/A	92	42.92	35.65	36.9		20.61	19.49	18.54	25.09	29.66	18.99	43.34	33.24	29.49	24.19
Citigen	N/A	92	46.04	48.96	37.8		23.04	25.50	27.32	33.51	40.91	36.40	43.34	38.38	36.47	29.91

N1	N/A	67		35.80				19.80	19.69	21.98	27.06	26.66	34.60	29.77	26.92	22.16
N2	N/A	83	40.42	43.34	30.8		13.91		19.10	20.88	27.18	26.84	36.46	28.60	28.75	23.58
SPS2	N/A	92	44.69	57.39	44.4		19.84	31.99	29.19	32.64	36.44	34.76	47.61	40.27	38.11	31.25
CLS2	100	33									26.75	27.11	33.68	31.78	29.83	20.54
T2	N/A	58	47.57	46.75				34.15		42.40	46.85	42.65	51.11		44.50	33.39
T3	N/A	67	62.21					36.78	41.15	52.35	64.32	52.14	57.24	48.61	51.85	**41.25**
T4	N/A	58		34.36				22.48	22.25	30.18	34.08		42.63	35.32	31.61	26.04
T5	N/A	75	55.16	46.99				34.99	32.66	42.51	42.18	47.25	50.56	43.81	44.01	36.09
T6	N/A	67		43.06				22.21	19.88	25.88	29.39	32.85	38.96	34.42	30.83	25.37
T7	N/A	67	41.40	35.61				20.80	21.30	25.96	27.75	27.34		36.35	29.57	24.76
T9	N/A	67	60.10	58.84				37.38	32.98		43.12	40.07	48.56	38.05	44.89	33.43
T10	N/A	67	42.86					22.81	20.58	28.24	29.28	25.95	40.60	32.60	30.36	23.75
T11	N/A	58	46.73	41.16					13.01	28.69	29.11	28.83	41.28		32.69	24.50
T12	N/A	67	66.23	64.26				39.41		51.55	49.40	51.24	51.69	40.30	51.76	37.96
T13	N/A	75	62.89	54.73				40.41	36.88	51.72	54.48	50.52	54.82	42.34	49.87	**40.89**
T14	N/A	67	70.74	57.27				36.62	26.27		47.41	47.40	54.42	42.51	47.83	35.62
T15	N/A	67	62.89	56.07				28.57	31.83	37.73		44.34	46.50	42.75	43.84	33.28
T16	N/A	75	48.27	41.06				25.27	24.09	36.26	39.40	40.52	46.62	37.77	37.70	30.91
T17	N/A	75	55.61	51.46				33.99	31.56	42.17	41.65	47.69	51.61	39.72	43.94	36.03
T18	N/A	58	61.91	56.66						47.09	43.05	47.80	57.13	51.69	52.19	36.45
T19	N/A	67	46.64					27.11	25.19	37.09	36.76	33.64	43.00	39.33	36.10	28.24
T20	N/A	67	53.83	52.03				33.04	27.95	40.25	40.50	43.58		39.57	41.34	34.62
T21	N/A	75	63.89	53.42				41.01	36.95	35.06	40.78	39.72	46.01	37.58	43.82	35.94
BS1	N/A	50	57.71	58.18							58.97	48.70	54.86	55.53	55.66	37.26
BS14	N/A	67	44.89	42.09				21.58	19.23		28.75	27.19	43.40	34.61	32.72	24.75
BS16	N/A	67	44.97	36.90				25.16	19.75	25.39	30.47	31.87		35.81	31.29	26.67
BS17	N/A	58	52.43	46.89						34.41	40.95	40.85	44.92	39.22	42.81	30.41
BS18	N/A	58	55.98	54.99						41.85	50.64	42.63	52.58	39.26	48.28	34.30
BS19	N/A	75	50.79	50.23				30.69	29.57	35.70	43.33	35.96	48.18	45.56	41.11	33.71
BS20	N/A	67	36.29	28.79				19.23	18.08	23.11	28.47	29.97		28.51	26.56	22.64
BS21	N/A	58						27.03	28.16	35.90	41.73	38.86	45.84	41.90	37.06	31.21

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 bias adjusted means have also been “annualised” in accordance with LLAQM Technical Guidance if valid data capture for the calendar year is less than 75% and greater than 33%.

(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%).