Royal Borough of Kensington & Chelsea Air Quality Annual Status Report for 2019
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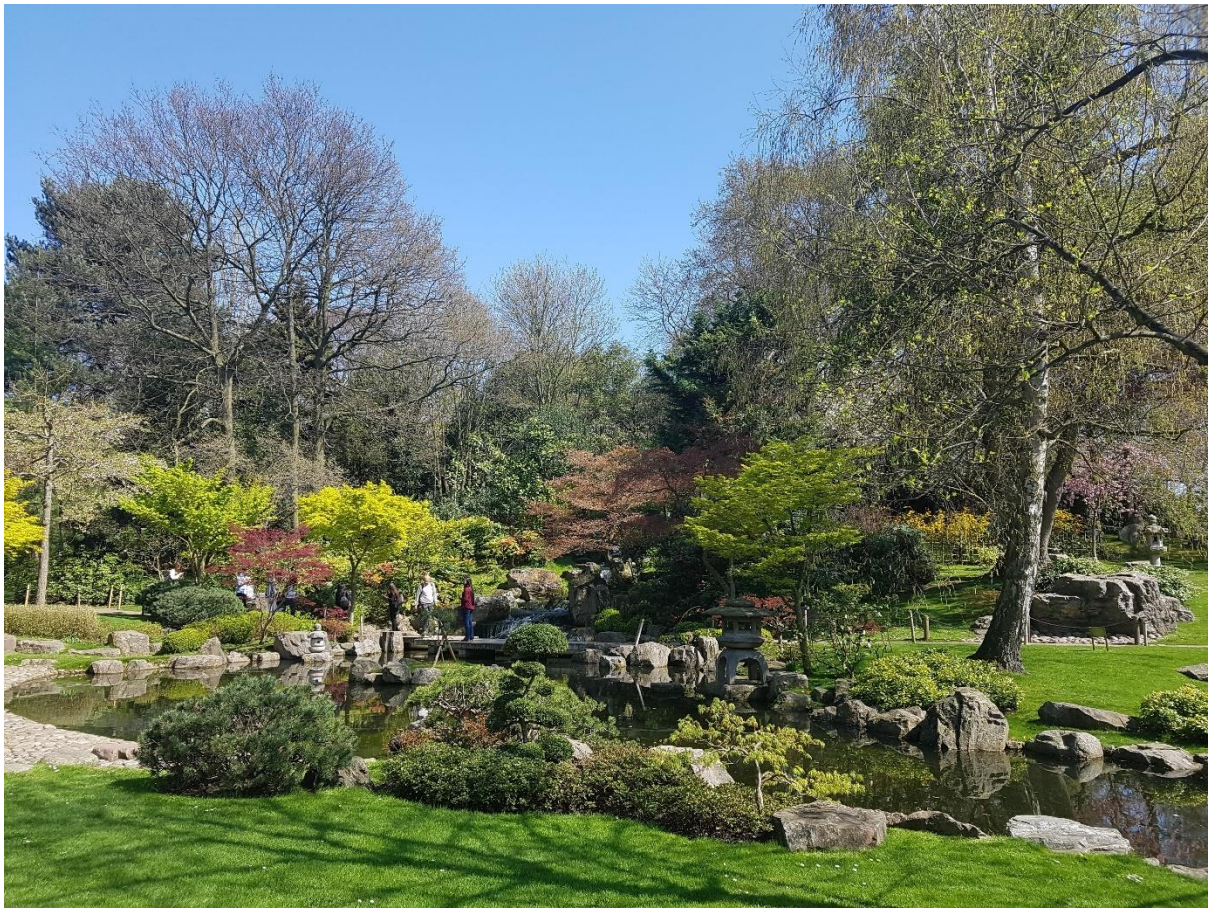

This report provides a detailed overview of air quality in the Royal Borough of Kensington and Chelsea during 2019. It has been produced to meet the requirements of the London Local Air Quality Management statutory process[1].

Contact details

Rebecca Brown
Pollution Regulatory Team – Manager
Royal Borough of Kensington and Chelsea
Council Offices
37 Pembroke Road
W8 6PW
airquality@rbkc.gov.uk
www.rbkc.gov.uk

[1] LLAQM Policy and Technical Guidance 2019 (LLAQM.TG(19)). https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/working-boroughs

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Abbreviations

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

Table A. Summary of National Air Quality Standards and Objectives

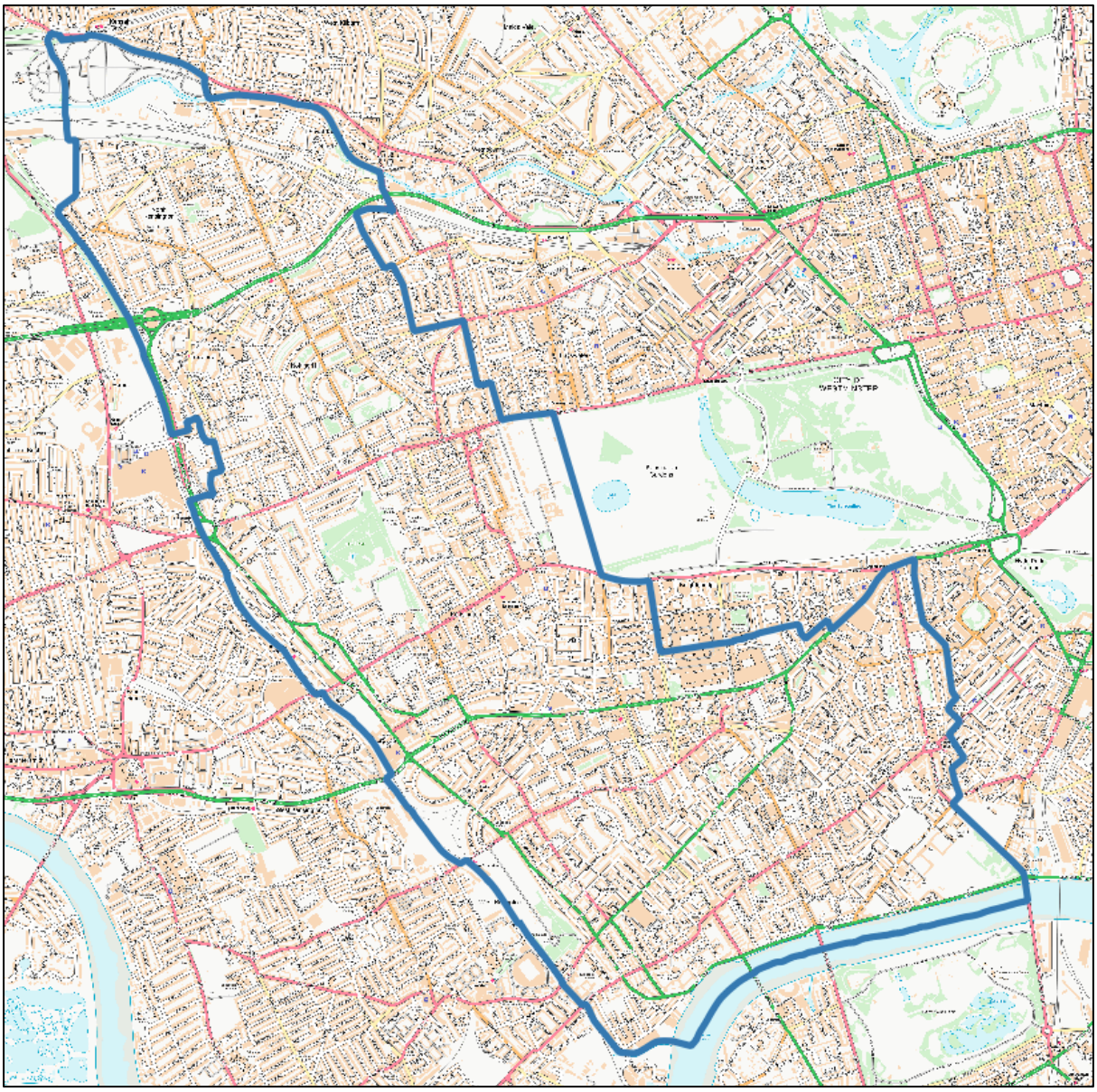
Pollutant	Objective (UK)	Averaging Period	Date[1]
Nitrogen Dioxide - NO_2	200 μg m^{-3} not to be exceeded more than 18 times a year	1-Hour Mean	31 Dec 2005
	40 μg m^{-3}	Annual Mean	31 Dec 2005
Particles - PM_{10}	50 μg m^{-3} not to be exceeded more than 35 times a year	24-Hour Mean	31 Dec 2004
	40 μg m^{-3}	Annual Mean	31 Dec 2004
Particles - $PM_{2.5}$	25 μg m^{-3}	Annual Mean	2020
	Target of 15% reduction in concentration at urban background locations	3 Year Mean	Between 2010 and 2020
Sulphur Dioxide (SO_2)	266 μg m^{-3} not to be exceeded more than 35 times a year	15 Minute Mean	31 Dec 2005
	350 μg m^{-3} not to be exceeded more than 24 times a year	1-Hour Mean	31 Dec 2004
	125 μg m^{-3} not to be exceeded more than 3 times a year	24-Hour Mean	31 Dec 2004

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

Table B. Summary of WHO Air Quality Guideline Values

Pollutant	Metric	Guideline Value (2005)
NO_2	1-Hour Mean	200 μg m^{-3}
	Annual Mean	40 μg m^{-3}
PM_{10}	24-Hour Mean	50 μg m^{-3}
	Annual Mean	20 μg m^{-3}
$PM_{2.5}$	Annual Mean (Stage 1)	10 μg m^{-3}
	Annual Mean (Stage 2)	
	24-Hour Mean	25 μg m^{-3}

Figure 1. AQMA Boundary (Entire Boundary)



Introduction

The Environmental Health Department in Kensington and Chelsea (RBKC) was previously merged with the London Borough of Hammersmith and Fulham (LBHF). Last July, the Bi-Borough Environmental Quality Team, who as part of its work, oversaw the air quality duties for both boroughs, disaggregated and all bi-borough staff returned to sovereign duties at LBHF. A new team for RBKC was recruited and is known as the Pollution Regulatory Team (PRT).

This has not been without its challenges. With all new staff, the second half of 2019 was therefore jointly focussed on getting up to speed with the existing systems, arrangements and projects already in place to support the Council's joint Air Quality and Climate Change Action Plan, which is in its penultimate year. In addition, the team has started to look to the future to consider how to raise the profile of air quality and its impact on public health, engage more with residents and businesses and ensure it remains a Council priority.

In October 2019, the Lead Member for the Environment, Councillor Cem Kemahli, agreed that the Council would work towards the World Health Organisation air quality guideline values. This is now our challenge. To do this, we require a robust monitoring network and a clear action plan. Modelled data is also invaluable to enable us to focus on specific areas.

Whilst the purpose of this report is to focus on data and action taken in 2019, we want to share our direction of travel and outline our key plans for 2020.

- We have just completed a review of our automatic monitoring sites. We have provided updated details below, in addition, we have identified the following actions;
    - At KC2, replace the monitoring cabin and PM_{10} monitor plus install a new PM2.5 analyser; and
    - At KC3 and KC5, replace the NOx analysers.
- Complete a review of all diffusion tube sites to ensure site information is accurate;
- Carry out modelling to obtain a greater understanding of the areas of exceedance in the borough. We have commissioned CERC to produce maps for the years 2016, 2019 and 2021, for NO_2, PM_{10} and $PM_{2.5}$
- Start preparation for a new Air Quality Action Plan to demonstrate the Council's new commitment to work towards achieving the World Health Organisation Guideline Values.

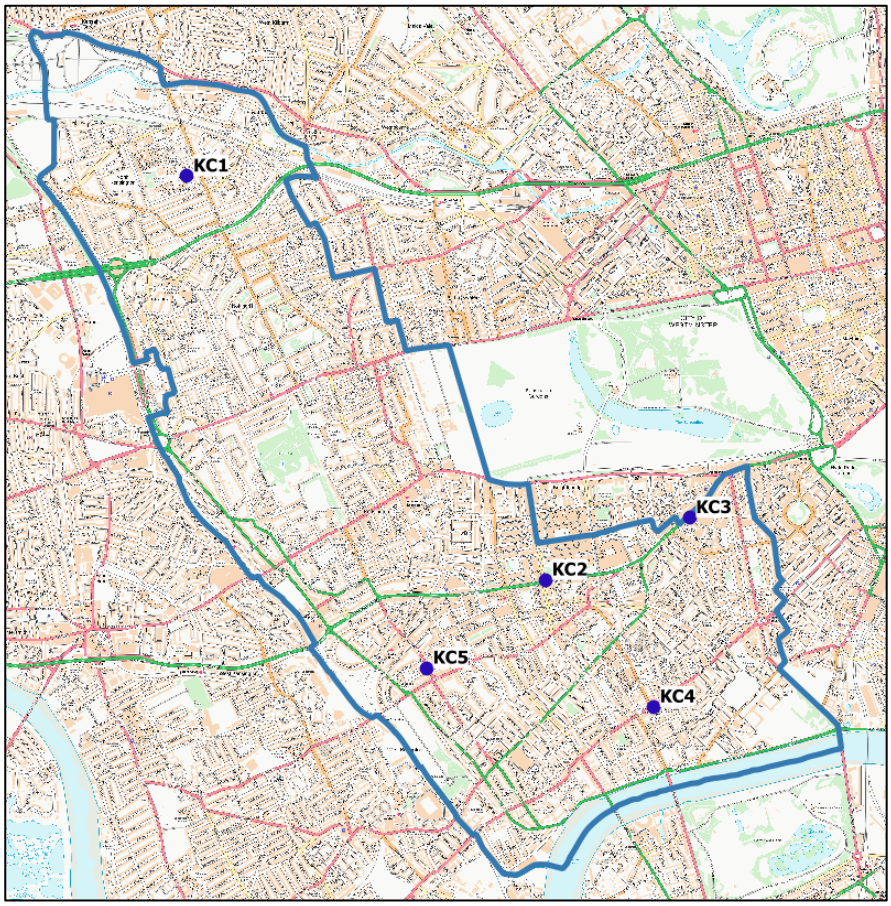
As a new team, we look forward to developing a close working relationship with the GLA and other boroughs in London to be able to tackle and improve air quality together.

1. Air Quality Monitoring

1.1 Locations

Figure 2 below shows the locations of all the automatic monitoring stations in the borough.

Figure 2. Automatic Monitoring Sites



The Pollution Regulatory Team (PRT) has started to undertake an in-depth review of the borough-wide air quality monitoring network (automatic and passive locations). At the time of writing, we have concluded a review of the automatic monitoring stations KC1-KC5. However, due to the COVID-19 pandemic and the subsequent lockdown measures, the review of the diffusion tube (NO_2 and BTEX) network has been postponed and as such these will be reviewed at a later date once safe to do so.

Table C, presented below, is confirmation of the results to date. The original table presented in last year's ASR can be found in Appendix C, in case comparison is helpful.

The main changes identified at the Automatic Monitoring stations are as follows:

- KC2 was previously noted as being 10 metres from nearest relevant exposure but as it is sited in the Wildlife Garden of the museum grounds, the distance has been amended to reflect this; and
- KC3 has been re-classified as a Roadside site (rather than Kerbside) as it is located 0.80 m from the kerb of the quieter local Hans Road and 4.2 m from the busier main Brompton Road. The classification should be based on the dominant road.

Table C. Details of Automatic Monitoring Sites for 2019

Site ID	Site Name	X/Y	Site Type	In AQMA?	Distance from site to relevant exposure (m)	Distance to kerb of nearest road (m)	Corrected Inlet Height (m)	Pollutants Monitored	Monitoring Technique
KC1	North Kensington	524045, 181752	Urban Background, LAQN & AURN affiliate site	Y	Approx. 3.5	Approx. 8m to St Charles Square	3	NO_2, CO, PM_{10}, $PM_{2.5}$, SO_2, O_3	Chemiluminescent, FIDAS, GFC, Fluorescence UV, Photometric
KC2	Cromwell Road	526520, 178968	Roadside	Y	0	10m to Cromwell Road and 5m to Queens Gate	1.4	NO_2, PM_{10}	Chemiluminescent, FDMS
KC3	Knightsbridge	527518, 179395	Kerbside	Y	0	0.8m to Hans Road, 4.2m from Brompton Road	2.4	NO_2	Chemiluminescent
KC4	Chelsea	527267, 178089	Roadside	Y	0	7.7m from Kings Road	3.4	NO_2	Chemiluminescent
KC5	Earls Court	525695, 178364	Kerbside	Y	5.2 (Approx. 4m height)	0.5m to Earls Court Road	1.9	NO_2, PM_{10}	Chemiluminescent BAM 1020 Heated

As mentioned, the locations and heights of the diffusion tubes are in the process of being re-surveyed. However, due to the COVID-19 pandemic and subsequent lockdown measures, it was not possible to complete this work in time for the production of the report. The diffusion tube locations, heights and site types have therefore been reported the same as they were in last year's ASR. As soon as the review has been completed, any amendments will be reported on the Council's website. During 2019 an additional seven NO_2 diffusion tube sites were added to the Non-Automatic monitoring network (KC74 – KC80). There has been no change to the number of C_6H_6 (BTEX) diffusion tube monitoring sites within the automatic network.

Table D. Details of Non-Automatic Monitoring Sites for 2019

Site ID	Site Name	X/Y	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	Co-located with an automatic monitor? (Y/N)
KC31	Ladbroke Grove/North Kensington Library	524342, 181271	Roadside	Y	6	3.5	5	NO_2	N
KC32	Holland Park	524784, 179599	Urban Background	Y	5	380	4	NO_2	N
KC33	Cromwell Rd/ Earls Court Rd	525355, 178841	Roadside	Y	1	1.1	2.1	NO_2	N
KC34	Dovehouse Street	527164, 178103	Urban Centre	Y	30	26	2.8	NO_2	N
KC35	Brompton Road/ Cottage Place	527192, 179185	Roadside	Y	40	8	1.5	NO_2	N
KC38	Earls Court Station	525548, 178556	Roadside	Y	1	1.7	2.7	NO_2	N
KC39	Lots Road/ Upcerne Road	526317, 177022	Roadside	Y	30	8.1	2.5	NO_2	N

Site ID	Site Name	X/Y	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	Co-located with an automatic monitor? (Y/N)
KC40	Brompton Square	527214, 179153	Urban Centre	Y	20	65	2.7	NO_2	N
KC41	Ladbroke Crescent	524294, 181200	Urban Background	Y	8	70	2.2	NO_2	N
KC42	Pembridge Square Library	525191, 180705	Roadside	Y	9	6	3.1	NO_2	N
KC43	St Marks Grove	525950, 177487	Urban Background	Y	12	38	2.3	NO_2	N
KC44	Donne Place	527335, 178810	Urban Background	Y	15	55	2.4	NO_2	N
KC45	Chatsworth Court	525263, 178936	Roadside	Y	13	13	2	NO_2	N
KC47	Sion Manning School	524046, 181758	Urban Background	Y	10	8.5	2.1	NO_2	Y -Triplicate
KC48	Sloane Square	528011, 178675	Roadside	Y	1	7	3	NO_2	N
KC49	Harrods	527516, 179395	Urban Centre	Y	1	4	2.5	NO_2	Y
KC50	Chelsea Physic Garden (Gate)	527726, 177727	Roadside	Y	1	4	2.9	NO_2	N

Site ID	Site Name	X/Y	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	Co-located with an automatic monitor? (Y/N)
KC51	Chelsea Physic Garden (Met Station)	527690, 177800	Urban Background	Y	3	92	1.5	NO_2	N
KC52	Sloane Avenue	527411, 178659	Roadside	Y	5	2.6	2.4	NO_2	N
KC53	Walmer House	523792, 181189	Urban Background	Y	20	12.5	2.3	NO_2	N
KC54	Cromwell Rd/ Natural History Museum	526522, 178968	Roadside	Y	10	3.1	2.6	NO_2	Y - Triplicate
KC55	Blantyre St	526608, 177429	Urban Background	Y	20	100	3	NO_2	N
KC56	Chelsea Old Town Hall	527268, 178089	Roadside	Y	14	9	3.1	NO_2	Y
KC57	Pavilion St/ Sloane Ave	527889, 179145	Roadside	Y	25	3	2.4	NO_2	N
KC58	Kensington H St/Kensington Church St	525630, 179674	Roadside	Y	1	13	2.7	NO_2	N
KC59	Kensington High St/Argyll St	525342, 179464	Kerbside	Y	1	0.7	2.5	NO_2	N
KC60	Old Brompton Rd/ Draycott Ave	526231, 178425	Kerbside	Y	8	0.7	2.5	NO_2	N

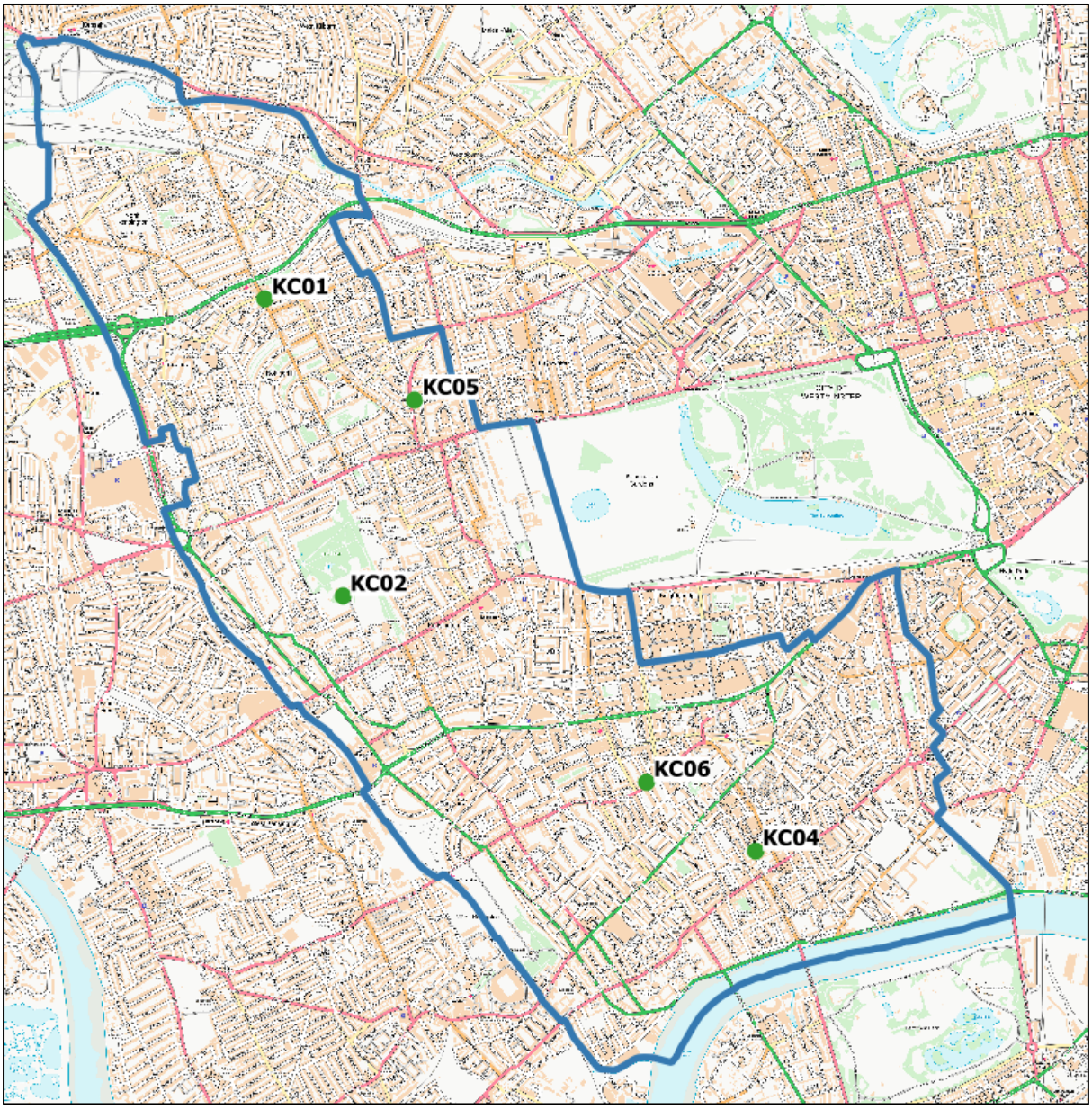
Site ID	Site Name	X/Y	Site Type	In AQMA?	Distance from monitoring site to relevant exposure (m)	Distance to kerb of nearest road (N/A if not applicable) (m)	Inlet Height (m)	Pollutants Monitored	Co-located with an automatic monitor? (Y/N)
KC61	Fulham Rd/Limerston St	526377, 177867	Roadside	Y	20	10	2.4	NO_2	N
KC64	Warwick Road	524825, 178902	Roadside	Y	8	3.5	2.6	NO_2	N
KC65	Barlby Road	523899, 182113	Roadside	Y	20	0.5	2.5	NO_2	N
KC66	Acklam Road	524541, 181893	Railway	Y	18	16	2.5	NO_2	N
KC67	Southern Row	524056, 182148	Railway	Y	55	38	2.5	NO_2	N
KC68	Exhibition Road	526863, 179060	Kerbside	Y	0.5	0.5	2.1	NO_2	N
KC69	Darfield Way	523587, 180893	Urban Background	Y	2	11.7	2.0	NO_2	N
KC70	Oakley Street	527170, 177985	Kerbside	Y	4	0.8	2.0	NO_2	N
KC71	Oakley Street	527267, 177812	Kerbside	Y	4	0.7	2.0	NO_2	N
KC72	Oakley Street	527330, 177716	Kerbside	Y	4	0.8	2.0	NO_2	N

Site ID	Site Name	X/Y	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	Co-located with an automatic monitor? (Y/N)
KC73	Oakley Street	527227, 177918	Kerbside	Y	4	0.6	2.0	NO_2	N
KC74	Hans Road	527600, 179325	Kerbside	Y	3.1	0.3	2.2	NO_2	N
KC75	Basil Street	527675, 179325	Kerbside	Y	3.35	0.7	2.0	NO_2	N
KC76	Basil Street	527691, 179390	Kerbside	Y	-	0.8	2.0	NO_2	N
KC77	Lonsdale Road	524820 181065	Kerbside	Y	1.7	0.65	2.0	NO_2	N
KC78	Lonsdale Road	524762 181049	Kerbside	Y	3	0.65	2.0	NO_2	N
KC79	Cadogan Gardens	527892 178731	Kerbside	Y	1.5	0.4	2.0	NO_2	N
KC80	Pavilion Road	527917, 178755	Kerbside	Y	2.3	1.24	2.0	NO_2	N
KC01	Ladbroke Grove/Nth Ken Library	524342 181271	Roadside	Y	6	3.5	5.5	C_6H_6	N
KC02	Holland Park	524784 179599	Urban Background	Y	5	380	4	C_6H_6	N

Site ID	Site Name	X/Y	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	Co-located with an automatic monitor? (Y/N)
KC04	Dovehouse Street	527111 178165	Urban Background	Y	30	45	2.2	C_6H_6	N
KC05	Pembridge Square Library	525191 180705	Roadside	Y	9	6	4	C_6H_6	N
KC06	Old Brompton Rd/ Clareville Grove Petrol St	526496 178553	Petrol Station	Y	3	12	N/A	C_6H_6	N

Figure 3. Non-Automatic NO_2 Monitoring Sites

Figure 4. Non-Automatic C_6H_6 Monitoring Sites



1.2 Comparison of Monitoring Results with AQOs

This year we have updated the approach to applying a Bias Adjustment Factor (BAF) to some diffusion tube monitoring locations within the borough. Historically a BAF was derived from the North Kensington Monitoring Station (NKMS) urban background co-location site, was used to correct raw Diffusion Tube data. The NKMS BAF is considered to represent the best local BAF for Urban Background Diffusion Tube monitoring locations and monitoring locations away from busy roads in the borough. However, applying it to monitoring locations associated with busier roads is likely to under report true concentrations.

To maintain conservatism and ensure consistency with the approach taken in previous years, the NKMS BAF will continue to be applied to all raw diffusion tube data, however, for data which, after being corrected using the NKMS BAF, exceeds 45µg/m^{-3}, the result corrected using the National BAF will also be reported. Typically, the true result should be at the lower end of the calculated range. Taking this approach will provide a more realistic result for roadside locations and any model verification.

Further details of this updated approach to bias adjustment is included in Appendix A.

The results presented overleaf are after adjustments for “annualisation” and for distance to a location of relevant public exposure, the details of which are also described in Appendix A.

Table E. Annual Mean NO_2 Ratified and Bias-Adjusted Monitoring Results (μg/m^{-3})

Site ID	Site Type	Valid Data Capture for Monitoring Period % [a]	Valid Data Capture 2019 % [b]	Annual Mean Concentration (μg/m^{-3})									
				2013[c]	2014[c]	2015[c]	2016[c]	2017[c]	2018[c]	2019[c] RAW	2019[c] (NKMS BAF)	2019[c] (National BAF)	2019 (DC)
KC1	Urban Background	99.00	99.00	37	34	32	35	33	29.1	27.38	N/A	N/A	N/A
KC2	Roadside	99.40	99.40	**60**	**56**	**55**	**58**	**51**	**47.6**	**43.73**	N/A	N/A	**42.6**
KC3	Kerbside	90.73	90.73	**90**	**72**	**71**	**80**	**66**	**66.4**	**54.41**	N/A	N/A	**53.5**
KC4	Roadside	97.65	97.65	**84**	**76**	**73**	**78**	**63**	**59.6**	**54.98**	N/A	N/A	**52.6**
KC5	Kerbside	88.56	88.56	**95**	**93**	**91**	**86**	**78**	**78.7**	**55.94**	N/A	N/A	**54.0**
KC31	Roadside	100.00	100.00	**60.9**	**53.5**	**49.26**	**55.50**	**52.2**	**42.8**	**42.6**	**43.1**	N/A	**42.2**
KC32	Urban Background	100.00	100.00	34.0	29.2	27.49	29.9	31.5	26.2	23.8	24.1	N/A	N/A
KC33	Roadside	100.00	100.00	**106.3**	**98.2**	**84.45**	**104.5**	**106.1**	**84.0**	**71.6**	**72.3**	**62.3**	**70.1**
KC34	Urban Centre	100.00	100.00	**50.3**	**45.1**	**40.76**	**43.7**	**43.7**	39.0	36.3	36.7	N/A	N/A
KC35	Roadside	75.00	75.00	**90.9**	**82.4**	**75.68**	**80.7**	**77.9**	**58.5**	**56.0**	**56.5**	**48.7**	**52.3**
KC38	Roadside	100.00	100.00	**108.8**	**100.7**	**99.0**	**101.0**	**119.2**	**75.8**	**70.3**	**71.0**	**61.2**	**69.4**
KC39	Roadside	91.67	91.67	37.1	34.5	32.5	38.5	34.7	30.6	29.2	29.5	N/A	29.9
KC40	Urban Centre	91.67	91.67	**52.9**	**44.1**	**41.6**	**45.1**	-	32.5	32.0	32.4	N/A	N/A
KC41	Urban Background	100.00	100.00	**41.7**	36.7	34.6	38.2	37.7	32.2	30.5	30.8	N/A	N/A
KC42	Roadside	100.00	100.00	**50.9**	**42.4**	**41.2**	**46.2**	**45.4**	38.4	34.5	34.9	N/A	34.7
KC43	Urban Background	91.67	91.67	**47.1**	38.7	34.2	36.2	36.6	30.0	29.9	30.2	N/A	N/A
KC44	Urban Background	91.67	91.67	**47.0**	**40.0**	39.6	**46.1**	**41.0**	35.5	33.1	33.4	N/A	N/A
KC45	Roadside	100.00	100.00	**57.9**	**53.5**	**48.6**	**52.6**	**50.3**	**44.9**	**41.9**	**42.4**	N/A	**41.8**
KC47	Urban Background	100 / 100/ 100	100 / 100 / 100	36.7	32.9	27.5	34.2	33.3	27.7	27.2	27.4	N/A	N/A
KC48	Roadside	100.00	100.00	**86.6**	**73.9**	**63.0**	**72.3**	**71.8**	**58.4**	**49.9**	**50.4**	N/A	**50.2**
KC49	Urban Centre	100.00	100.00	**94.0**	**74.5**	**69.7**	**87.5**	- [e]	- [e]	**59.9**	**60.5**	N/A	**59.9**
KC50	Roadside	100.00	100.00	**62.9**	**59.4**	**48.2**	**56.4**	**52.7**	**41.0**	**45.9**	**46.4**	**43.5**	**46.0**
KC51	Urban Background	100.00	100.00	36.6	33.3	31.6	36.2	39.5	27.7	31.4	31.7	N/A	N/A
KC52	Roadside	100.00	100.00	**65.3**	**58.4**	**52.9**	**64.5**	**56.1**	**49.4**	39.4	39.8	40.0	39.2
KC53	Urban Background	100.00	100.00	**53.6**	**48.4**	**42.6**	**47.0**	**49.0**	**40.7**	38.0	38.4	N/A	N/A
KC54	Roadside	83.33 / 66.67 / 66.67	83.33 / 66.67 / 66.67	**80.6**	**73.7**	**62.9**	**72.5**	**70.9**	**57.3**	**48.8**	**46.2**	39.8	**44.6**
KC55	Urban Background	91.67	91.67	**48.8**	**44.1**	**35.5**	**49.0**	**48.0**	**40.5**	37.5	37.9	N/A	N/A
KC56	Roadside	100.00	100.00	**88.2**	**74.4**	**63.7**	**72.7**	**68.0**	**59.9**	**51.2**	**51.7**	**44.5**	**49.8**

Site ID	Site Type	Valid Data Capture for Monitoring Period % [a]	Valid Data Capture 2019 % [b]	Annual Mean Concentration (µg/m^{-3})									
				2013[c]	2014 [c]	2015[c]	2016 [c]	2017 [c]	2018 [c]	2019 [c] RAW	2019 [c] (NKMS BAF)	2019 [c] (National BAF)	2019 (DC)
KC57	Roadside	100.00	100.00	**59.0**	**54.4**	**43.6**	**56.2**	**57.2**	**47.1**	**42.8**	**43.2**	N/A	**41.3**
KC58	Roadside	91.67	91.67	**75.0**	**58.9**	**50.9**	**59.7**	**62.7**	**48.0**	**46.0**	**46.4**	**40.0**	**46.3**
KC59	Kerbside	100.00	100.00	**86.9**	**74.9**	**70.3**	**79.0**	**74.9**	**66.5**	**59.2**	**59.8**	**51.5**	**57.8**
KC60	Kerbside	100.00	100.00	**75.1**	**69.9**	**61.2**	**73.1**	**71.3**	**51.8**	**50.9**	**51.4**	**44.3**	**47.7**
KC61	Roadside	100.00	100.00	**64.7**	**54.6**	**51.5**	**61.0**	**52.3**	**45.2**	**43.6**	**44.0**	N/A	**42.6**
KC64	Roadside	91.67	91.67	**55.5**	**54.8**	**50.6**	**58.3**	**46.5**	**42.5**	**41.6**	**42.0**	N/A	**40.9**
KC65	Roadside	100.00	100.00	**47.2**	**40.5**	33.1	**41.3**	**40.9**	34.5	33.2	33.5	N/A	31.8
KC66	Railway	91.67	91.67	**45.4**	**44.2**	34.4	**55.8**	**46.2**	38.5	33.6	34.0	N/A	N/A
KC67	Railway	100.00	100.00	**48.7**	**44.2**	36.2	**45.1**	**46.0**	36.8	35.3	35.7	N/A	N/A
KC68	Kerbside	100.00	100.00	**58.3**	**52.9**	**44.6**	**51.0**	**51.9**	**42.1**	39.1	39.5	N/A	39.1
KC69	Urban Background	100.00	100.00	-	**48.7**	39.3	**46.1**	**47.1**	35.8	37.0	37.3	N/A	N/A
KC70	Kerbside	100.00	100.00	-	-	-	-	-	**55.5**	**50.1**	**50.6**	**43.6**	**46.8**
KC71	Kerbside	100.00	100.00	-	-	-	-	-	**44.0**	**41.6**	**42.0**	N/A	39.5
KC72	Kerbside	100.00	100.00	-	-	-	-	-	**59.6**	**51.5**	**52.0**	**44.8**	**47.7**
KC73	Kerbside	100.00	100.00	-	-	-	-	-	**44.0**	**41.2**	**41.7**	N/A	39.3
KC74	Kerbside	100.00	91.67	-	-	-	-	-	-	38.8	39.2	N/A	37.3
KC75	Kerbside	81.81	75.00	-	-	-	-	-	-	**48.9**	**49.4**	**42.6**	**45.6**
KC76	Kerbside	100.00	91.67	-	-	-	-	-	-	**46.2**	**46.6**	**40.2**	**43.4**
KC77	Kerbside	100.00	91.67	-	-	-	-	-	-	30.4	30.7	N/A	30.5
KC78	Kerbside	90.90	83.33	-	-	-	-	-	-	30.4	30.7	N/A	30.4
KC79	Kerbside	100.00	91.67	-	-	-	-	-	-	34.1	34.4	N/A	33.5
KC80	Kerbside	90.90	83.33	-	-	-	-	-	-	35.8	36.2	N/A	34.9

Notes:

Exceedance 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**.

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

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

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

Considering NKMS BAF corrected data, there has been a reduction in annual mean NO_2 concentrations at most monitoring sites across the borough. However, KC43, KC47, KC50, KC51 and KC69 experienced increases of the annual mean NO_2 concentration. KC50 saw the greatest increase in annual mean NO2 concentrations with +5 µg/m^{-3}, followed by KC51 (+4 µg/m^{-3}) and KC69 (+1.4 µg/m^{-3}). Increases at KC47 (+0.3 µg/m^{-3}) and KC43 (+0.1 µg/m^{-3}) are considered negligible. The most notable reductions in annual mean NO_2 concentrations were identified at roadside and kerbside locations with reductions of between 0.6-13.9 µg/m^{-3} and 1.6-11.9 µg/m^{-3} respectively.

When compared to the AQO and WHO Guideline values, even with some Diffusion Tube sites experiencing an increase in concentrations, no new locations breached the annual mean objective of 40 µg/m^{-3}. Six locations (KC52, KC53, KC55, KC68, KC71 and KC73) experienced a large enough reduction in concentrations that the locations no longer breached the AQO or WHO Guideline value of 40 µg/m^{-3}.

It is not appropriate to compare the National BAF corrected data to previous year's results derived using the NKMS BAF, however, it is worth noting that broadly the National BAF corrected diffusion tube data appears to correspond better with the results from co-located or nearby continuous monitoring stations, for example, the application of the National BAF has resulted in better agreement at KC33 and KC54 compared to KC2, KC49b compared to KC3 and KC38 compared to KC5. The exception is KC56, which is co-located with KC4. We are currently considering whether the siting of the monitoring station inlet relative to the diffusion tube position, combined with the local street scene could be resulting in the observed discrepancy.

At KC50, KC58 and KC 76 the application of the National BAF changes the annual mean result from exceeding to meeting the National Air Quality Objective. KC50 is set amongst the foliage of a hedge and so the result should be used with caution. This location is also situated about 6m from traffic on the road, which is between the River Thames and an area of open space (The Chelsea Physics Garden) where annual mean nitrogen dioxide concentrations are at background levels and so a result nearer to the objective is possible. KC58 is situated in an open area adjoining Kensington High Street and is set back 16m from the road and so a result near to the objective is reasonable. KC76, only meets the objective after the distance correction has been applied and so the result appears reasonable.

Table F. Comparison of Annual Mean Concentrations at Sites with both BAF Applied

Site	Type	Annual Mean Concentration NKMS BAF	Annual Mean Concentration National BAF
KC33	Roadside	**70.1**	**60.7**
KC35	Roadside	**52.3**	**46.0**
KC38	Roadside	**69.4**	**60.0**
KC48	Roadside	**50.2**	**43.3**
KC49	Urban Centre	**59.9**	**51.7**
KC50	Roadside	**46.0**	39.7
KC54	Roadside	**47.2**	**41.3**
KC56	Roadside	**49.8**	**43.4**
KC58	Roadside	**46.3**	39.9
KC59	Kerbside	**57.8**	**50.2**
KC60	Kerbside	**47.7**	**42.1**
KC70	Kerbside	**46.8**	**41.0**
KC72	Kerbside	**47.7**	**41.9**
KC75	Kerbside	**45.6**	**40.1**
KC76	Kerbside	**43.4**	38.1

In addition to the reduction in NO_2 concentrations experienced at the majority of diffusion tube locations between 2018 and 2019, there was a reduction in the annual mean NO_2 concentrations experienced the all the Automatic Monitoring sites. The most significant reduction was identified at Earl's Court Road (Kerbside Site) of -23.9 $\mu g/m^{-3}$ from the reported 2018 concentration. The automatic monitoring sites presented their lowest annual mean NO_2 concentrations across the period of seven years, however KC2-KC5 continue to breach the AQO and WHO Guideline Annual Mean value of 40 $\mu g/m^{-3}$. These reductions in NO_2 concentrations at roadside and kerbside sites may be attributed partly to the ULEZ and ULE Bus Zones created by the GLA which has seen 13,500 fewer polluting cars being driven into the zone on a daily basis.

The graphs overleaf present the Annual Mean NO_2 concentration trends over a seven year period (2013-2019) as detailed within Table D above. Figure 5 presents annual mean concentrations at roadside monitoring locations; Figure 6 presents annual mean concentrations at kerbside monitoring locations that have been in operation since 2013. Locations with fewer than 3 years' worth of data have not been included as they do not yet provide sufficient trend data for analysis. Figure 7 presents annual mean concentrations at urban background and urban centre monitoring locations. KC49 has been omitted from the graph there is no data for the period of 2017 and 2018. The two Railway monitoring locations are presented in Figure 8.

Figure 5. Annual Mean NO_2 Concentrations: Roadside Monitoring Locations

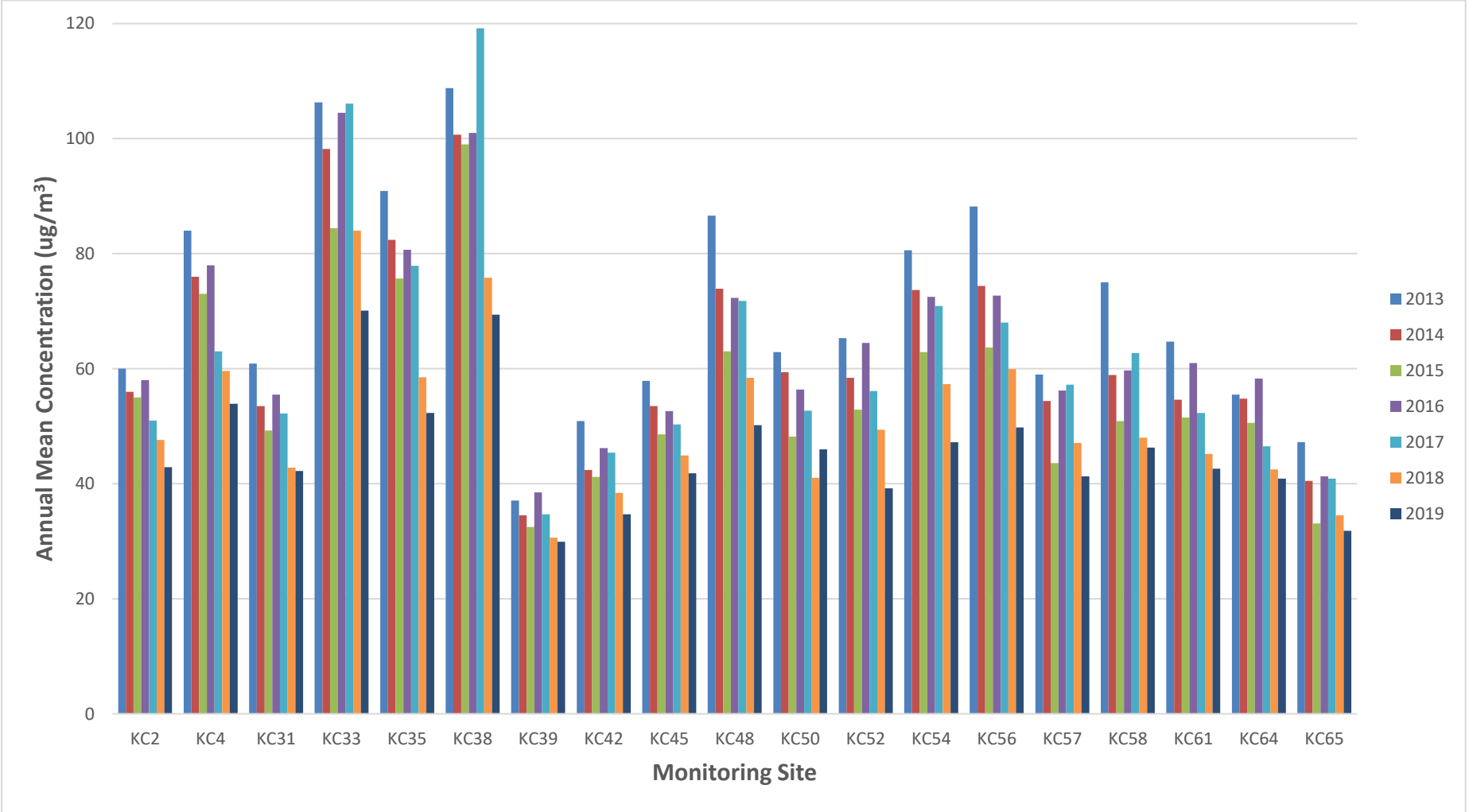


Figure 6. Annual Mean NO_2 Concentrations: Kerbside Monitoring Locations

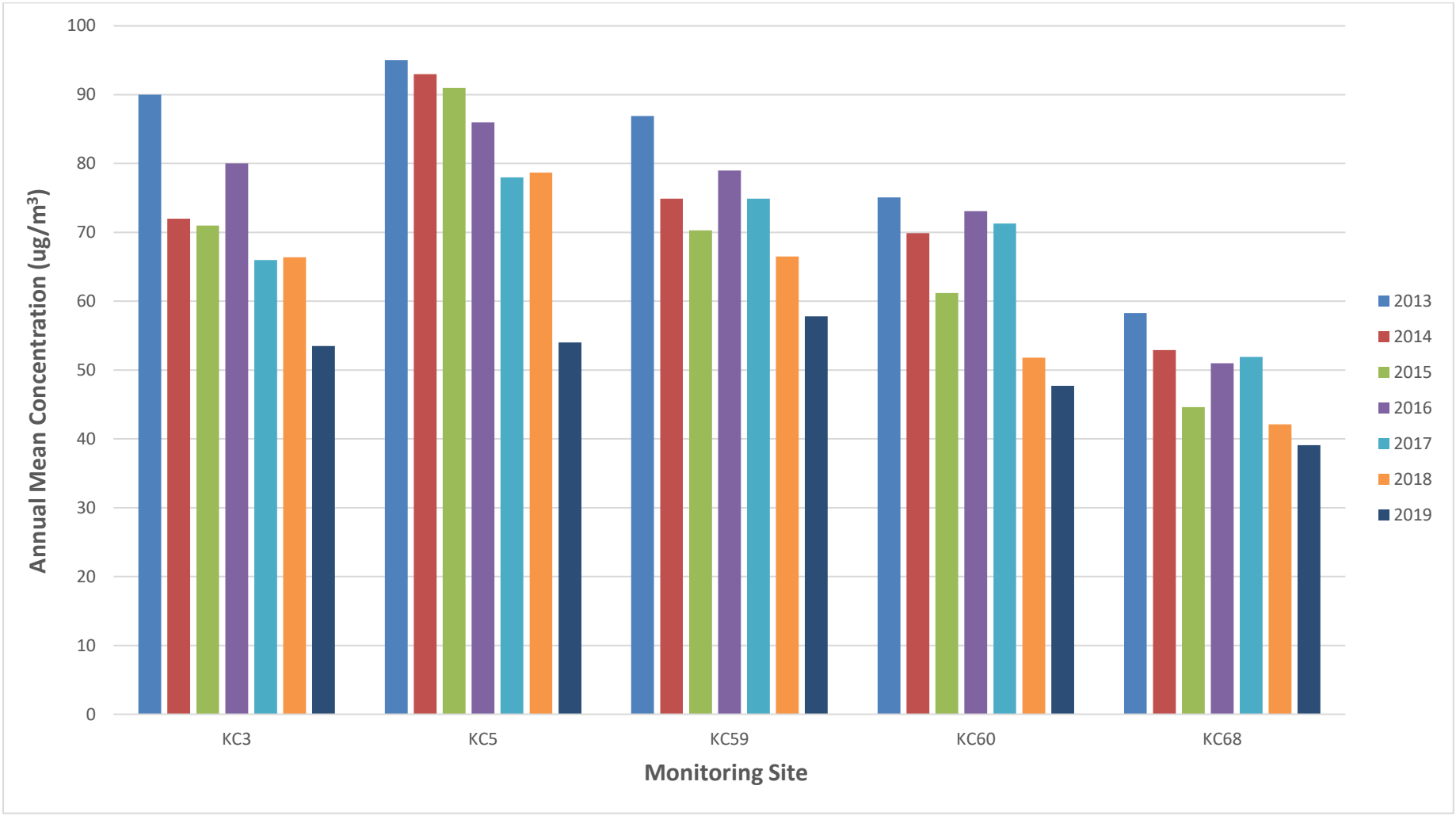


Figure 7. Annual Mean NO_2 Concentrations: Urban Background & Urban Centre Monitoring Locations

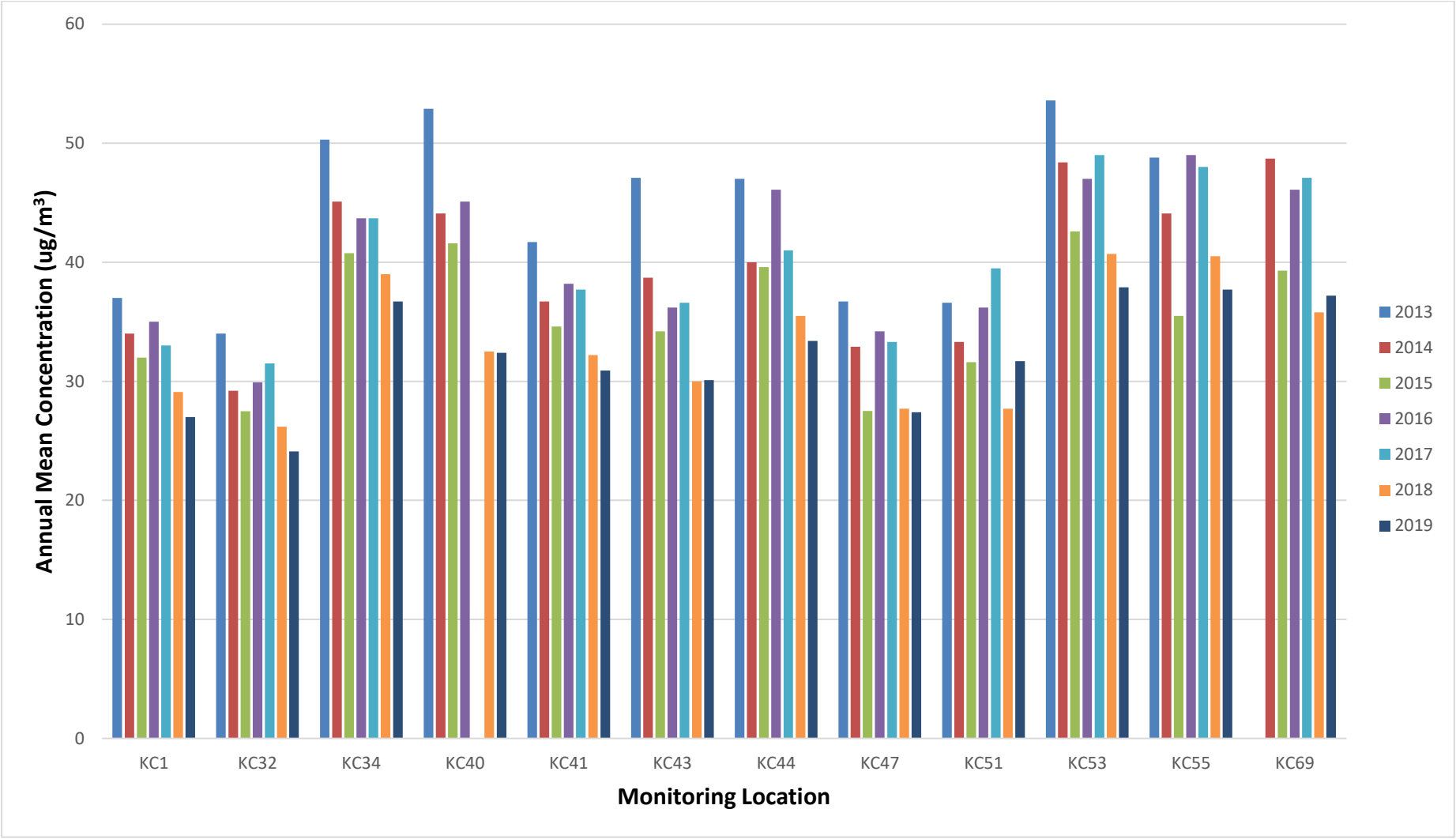


Figure 8. Annual Mean NO_2 Concentrations: Railway Monitoring Locations

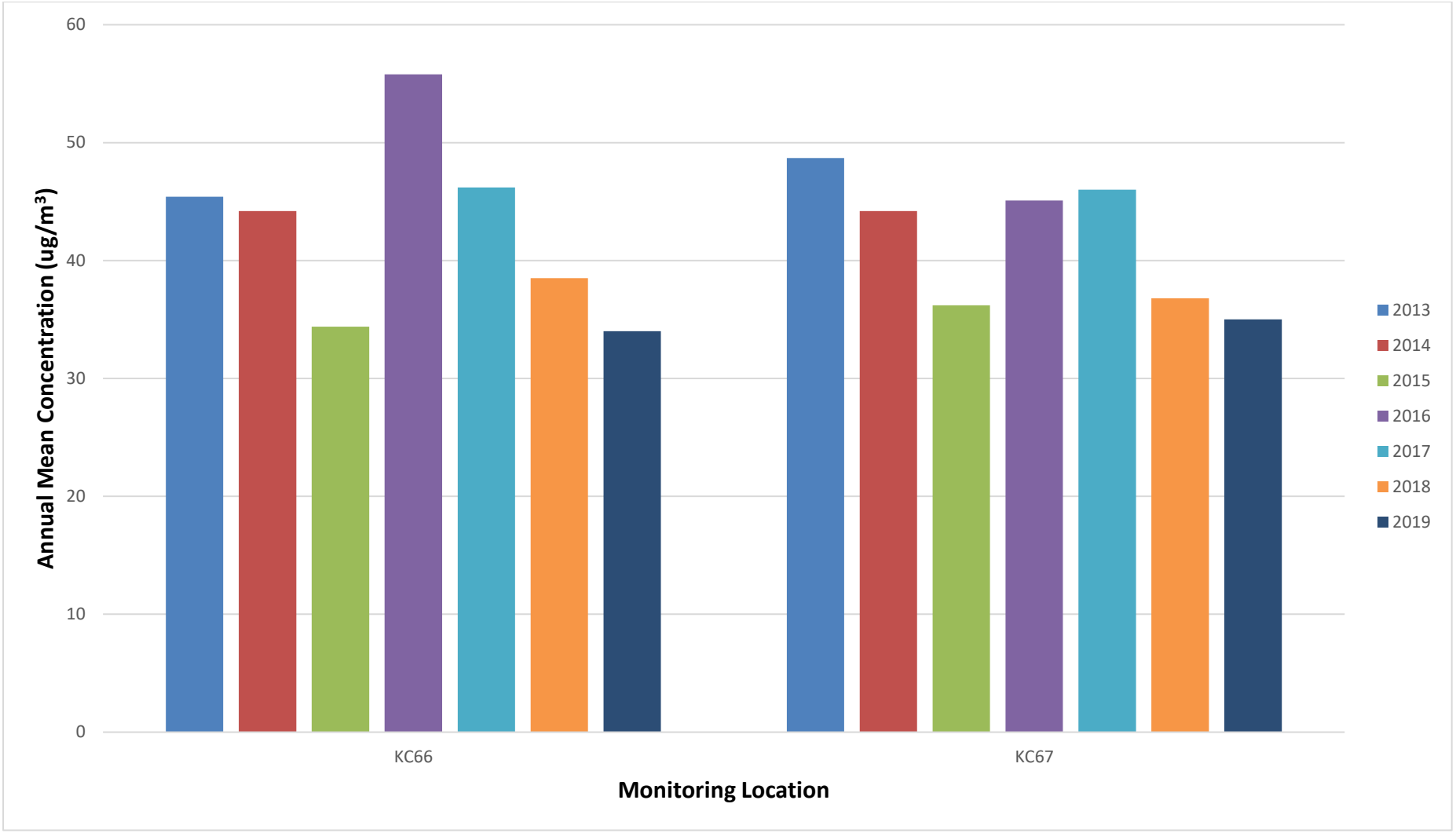


Table G. NO_2 Automatic Monitor Results: Comparison with 1-Hour Mean Objective

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2019 % [b]	Number of Hourly Means > 200 µg m^{-3}						
			2013[c]	2014[c]	2015[c]	2016[c]	2017[c]	2018[c]	2019[c]
KC1	100.00	100.00	0	0	0	0	1	0	0
KC2	100.00	100.00	2	0	0 (1197)	1	0	0	0
KC3	91.00	91.00	**466**	**109**	**97**	**262**	**92**	**43**	15
KC4	98.00	98.00	**47**	5	9	**54**	4	0	0
KC5	89.00	89.00	**140**	**212**	**135**	**120**	**24**	**29**	2

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

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

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

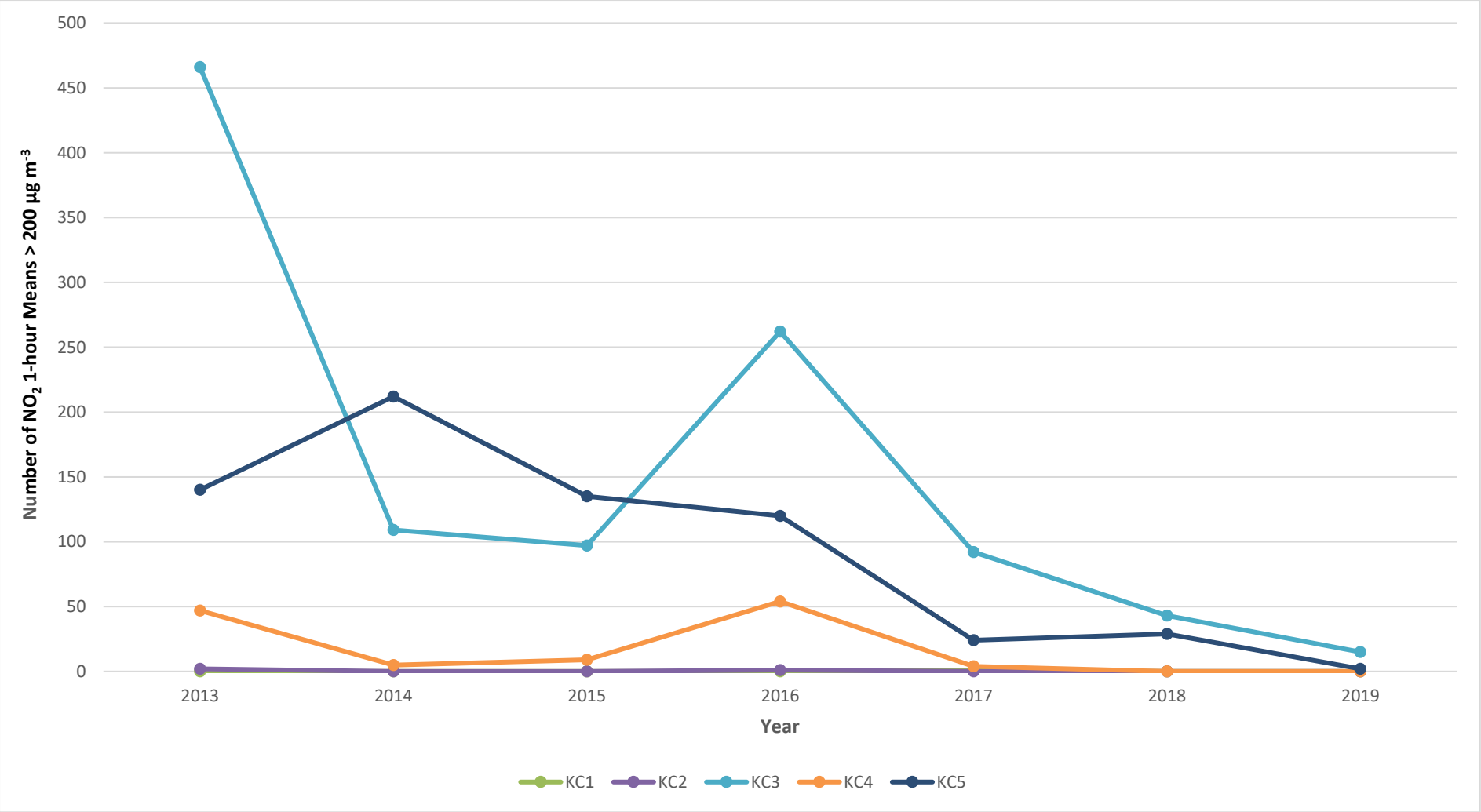
[c] Means should be "annualised" in accordance with LLAQM Technical Guidance, if valid data capture is less than 75%.

Compliance with the AQO NO_2 1-hour mean objective of 200 µg/m^{-3} (not to be exceeded more than 18 times in a year's period) was achieved at all five automatic monitoring locations during 2019. This is the first year within the seven years of data presented that all locations have achieved compliance with this AQO. KC3 and KC5 had previously exceeded the AQO every year for the period 2013-2018.

The WHO Guidelines also suggest a 1-Hour Objective of 200 µg/m^{-3}, however this is not allowed to be exceeded more than once. In this case KC1, KC2 and KC4 have met the objective, whilst KC2 and KC5 have not.

Figure 9 overleaf presents the number of 1-hour means in excess of the AQO for the period of 2013-2019. For KC2 in 2015 the actual number of 1-hour means in excess of the AQO have been plotted rather than the 99.8th percentile value, due to the data capture being low (51.2%) at KC2 within 2015 there may have been further exceedances experienced. It can be seen that there has been a downward trend from 2012 to 2019 for sites KC3, KC4 and KC5, and that KC1 and KC2 have remained at a consistent number throughout the seven year period with less than five 1-hour NO_2 mean concentrations in excess of 200 µg/m^3 for each year.

Figure 9. Number of NO_2 1-hour Means > 200 µg m^{-3}



Note: Data capture was less than 85% in for KC2 during 2015 (51%). The monitored number of 1-hour means in excess of 200 µg/m^{-3} have been plotted rather than the 99.8th percentile value of 1-hour means.

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

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2019 % [b]	Annual Mean Concentration (μg m^{-3})						
			2013[c]	2014[c]	2015[c]	2016[c]	2017[c]	2018[c]	2019[c]
KC1	99.97	99.97	23	23	20	20	17	14	15
KC2	5.43	5.43	26	25	23	22	20	18	14
KC5	88.46	88.46	34	31	27	28	27	25	24

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

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

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

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

*Data should not be relied upon even after annualisation of results due to very low data capture ~5% for the period of 2019.

The Gravimetric Partisol previously located at KC5 was removed during October 2017 and replaced by a heated 1020 BAM in May 2018. Data capture at KC5 was below 75% during 2018 and the monitoring data was annualised to obtain a representative annual mean concentration. In early 2019 the TEOM FDMS located at KC2 failed, beyond viable repair, having reached its end of life usability and the cabin that the monitoring equipment is housed in has become vulnerable to water ingress. A new PM_{10} analyser has been purchased and will be installed upon erection of the new cabin. Drawing have been drafted and the Council is mid-way through obtaining approval from the Natural History Museum, with the aim of having the new cabin and equipment (including a $PM_{2.5}$ monitor) during Summer 2020.

Compliance with the PM_{10} Annual Mean AQO continued to be achieved at all three monitoring sites, as it has been for the period of 2013-2018. In addition to this the lowest annual mean concentration in recent monitoring history (2013-2019) was reported at KC5. It should be noted that data capture at KC2 was approximately ~5% during 2019, so the data has been annualised to obtain a representative annual mean concentration, nevertheless it cannot be relied upon due to the very low data capture. The WHO Guidelines suggest a value of 20 μg/m^{-3} for the PM_{10} annual mean, with this in mind KC1 would have met the objective whilst KC5 would not have.

Figure 10 presents the annual mean PM_{10} concentrations for the period of 2013-2019 for KC1, KC3 and KC5. It can be seen that there has been a gradual decline in concentrations experienced at KC2 and KC5 between 2012 and 2019, whereas the concentrations at KC1 have remained more stable across the period.

Figure 10. Annual Mean PM_{10} Automatic Monitoring Results

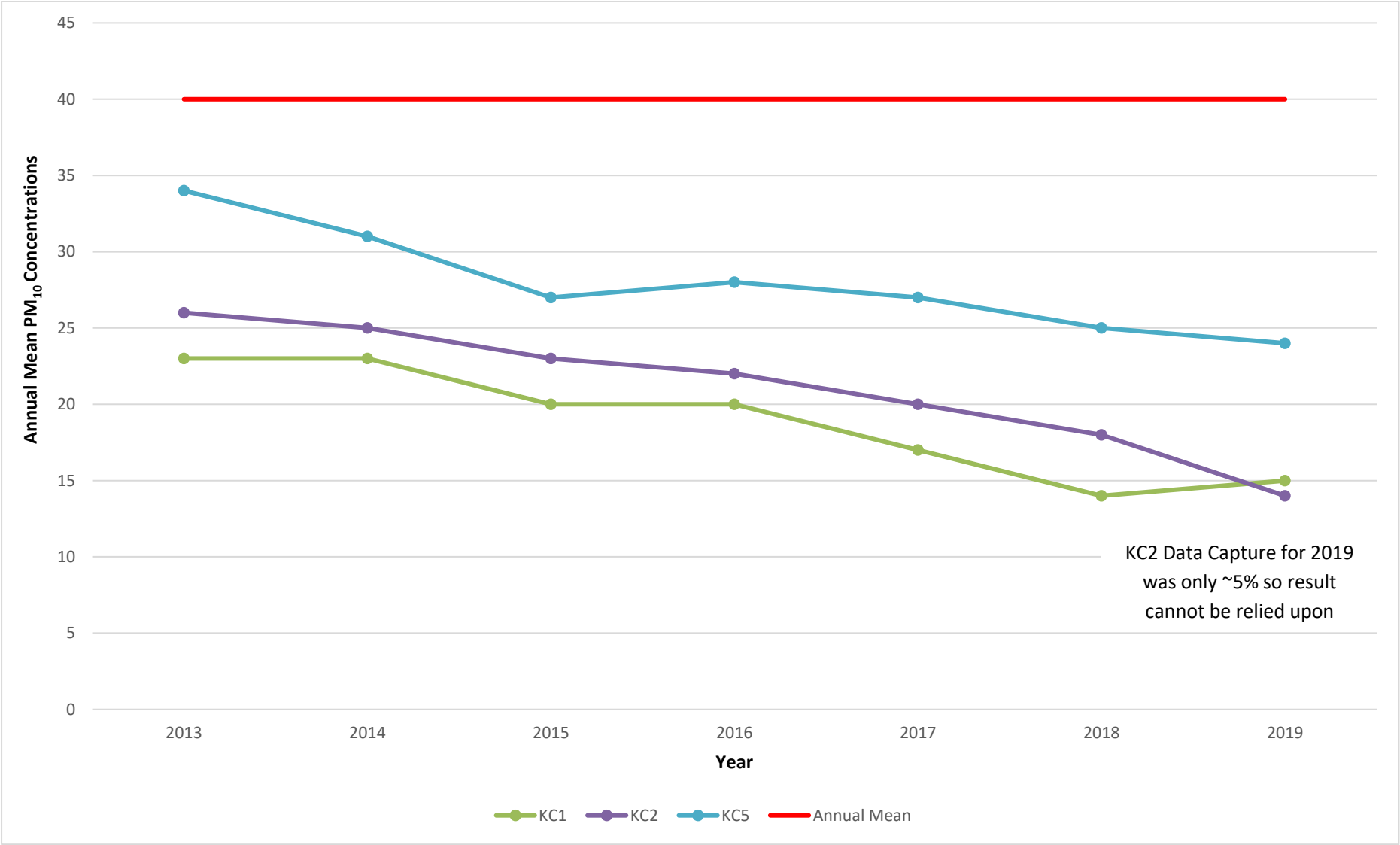


Table I. PM10 Automatic Monitor Results: Comparison with 24-Hour Mean Objective

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2019 % [b]	Number of Daily Means > 50 µg m^{-3}						
			2013[c]	2014[c]	2015[c]	2016[c]	2017[c]	2018[c]	2019[c]
KC1	99.97	99.97	9	10 (36.7)	7	10	16	1	5
KC2	5.43	5.43	12	11 (39.1)	4	8	6	0	0*
KC5	88.46	88.46	**39**	25	15	19	18	4 (33.2)	13

Notes: Exceedance of the PM_{10} short term AQO of 50 µg m^{-3} over the permitted 35 days per year or where the 90.4th percentile exceeds 50 µg m^{-3} are shown in **bold**. Where the period of valid data is less than 85% of a full year, the 90.4th percentile is shown in brackets after the number of exceedances.

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

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

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

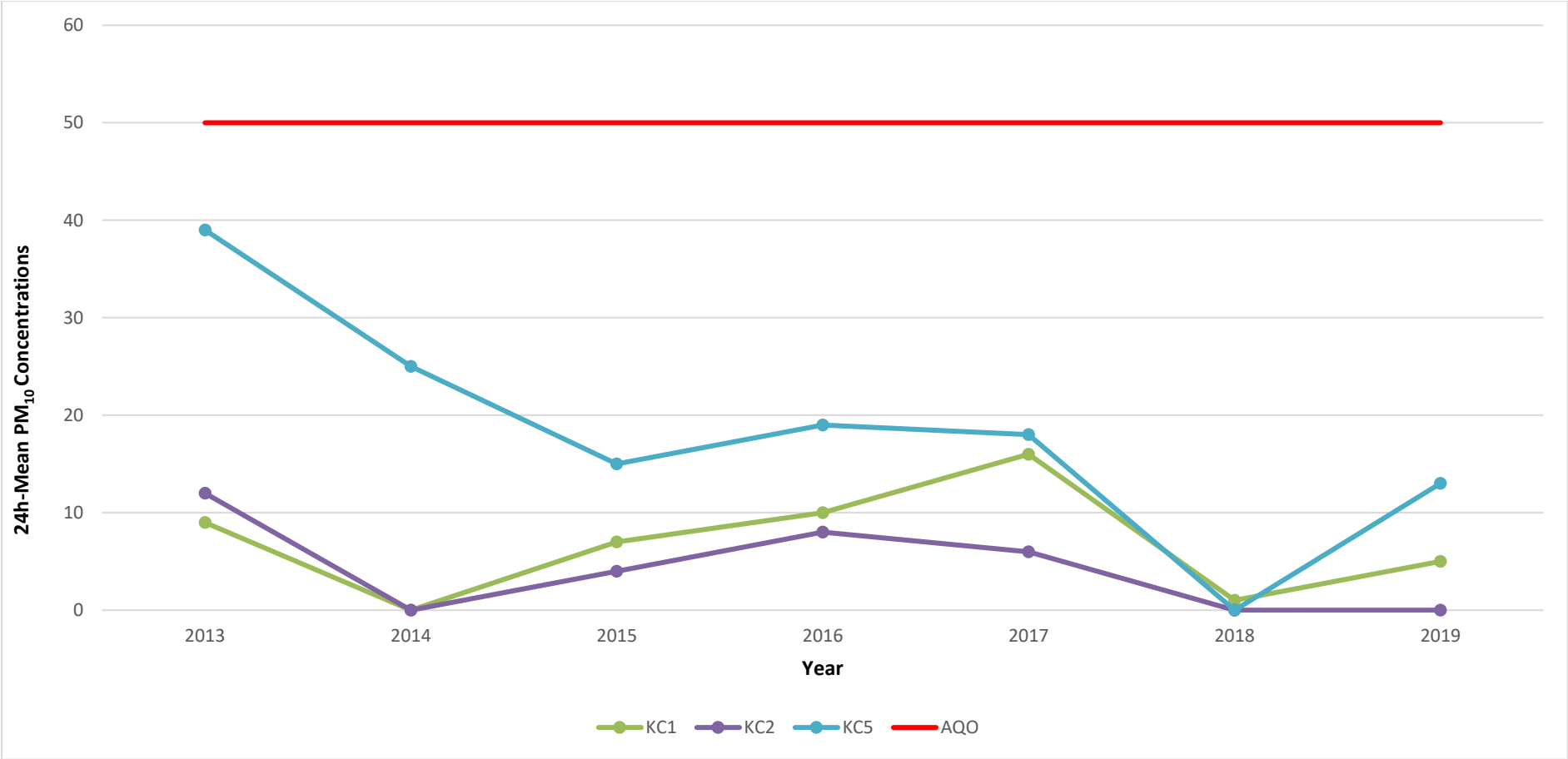
*Data should not be relied upon even after annualisation of results due to very low data capture ~5% for the period of 2019.

Compliance of the PM_{10} short term AQO was achieved at all monitoring locations, as it has for the period of 2014-2018. There is one historic exceedance of the short term AQO in 2013 when KC5 registered 39 exceedances, 4 more than the permitted 35. 2018 saw the lowest number of daily means in excess of the short term PM_{10} AQO, whilst 2019 saw a rise in the number recorded at KC1 and KC5. It should be noted that data capture at KC2 was approximately ~5% during 2019, as such no exceedances were monitored during this period, however this figure cannot be relied upon due to the very low data capture.

The WHO Guidelines suggest a value of 50 µg/m^{-3} for the PM_{10} 24-Hour Mean, however this is not allowed to be exceeded more than once. With regards to the WHO Guideline value both KC1 and KC5 would not have met this objective.

Figure 10 displays the number of daily means in excess of the short term PM_{10} AQO across the three monitoring sites for the period of 2013-2019. It can be seen that there has been a decline experienced at all sites compared between 2012 and 2018, with 2018 resulting in the lowest numbers but 2019 seeing a slight rise in exceedences at KC1 and KC5.

Figure 10. Number of PM_{10} Daily Means > 50 µg m^{-3}



Note: Data capture for was less than 85% for KC1 (74.1%) and KC2 (63.5%) in 2014, and for KC5 (58.6%) in 2018. The monitored number of daily means in excess of 50 µg/m^{-3} have been plotted rather than the 90.4th percentile value of daily means.

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

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2019 % [b]	Annual Mean Concentration (µg m^{-3})						
			2013[c]	2014[c]	2015[c]	2016[c]	2017[c]	2018[c]	2019[c]
KC1	99.58	99.58	14.7	15.9	10.9	12.1	12.0	9.2	10

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

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

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

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

Compliance with the $PM_{2.5}$ annual mean AQO of 25 µg/m^{-3} was achieved at KC1 during 2019, as it has done for the previous seven years. 2018 saw the lowest Annual Mean concentrations recorded across the period 2013-2018, however this was not continued as 2019 saw a marginal rise in concentrations. The WHO Guidelines suggest a value of 10 µg/m^{-3} for the $PM_{2.5}$ Annual Mean, in this instance the value has been met for 2018 and 2019. It can be seen that overall there has been a gradual decline in concentrations experienced between 2014 and 2018 after a period of increase between 2012 and 2013, with an overall reduction of ~5 µg/m^{-3} experienced in the monitored Annual Mean concentration recorded at KC1 in 2019 compared to 2014.

Previously $PM_{2.5}$ monitoring was undertaken at KC2, however due to an instrument fault, the FDMS that was removed from site in October 2017. Following the removal of equipment, the Council agreed upon a temporary hire agreement to ensure the continuation of PM2.5 monitoring, however this data has not yet been made available. A permanent replacement instrument is in the process of being purchased but cannot be installed until a new monitoring cabin in installed at the Natural History Museum. The present cabin is no longer waterproof and is in need of replacement. It is envisaged that new equipment and cabin will be installed and running by the end of summer 2020.

Figure 11. Annual Mean $PM_{2.5}$ Automatic Monitoring Results

Table K. SO_2 Automatic Monitor Results: Comparison with Objectives

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2019 % [b]	Number of: [c]		
			15-minute means > 266 µg m^{-3}	1-hour mean > 350 µg m^{-3}	24-hour mean > 125 µg m^{-3}
KC1	93.29	92.29	0	0	0

Exceedances of the SO_2 AQOs are shown in **bold** (15-min mean = 35 allowed a year, 1-hour mean = 24 allowed a year, 24-hour mean = 3 allowed / year).

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

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

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

During 2019, as within 2017 & 2018 there were no mean values at KC1 monitoring site that exceeded either the 15-minute, 1-hour, or 24-hour SO_2 AQO concentration limits.

Table L. Annual Mean Benzene Monitoring Results (µg m^{-3})

Year	KC01	KC02	KC03 (Site discontinued 2007)	KC04	KC05	KC06
2000	5.1	3.1	11.4	2.6	4.2	-
2001	4.3	2.0	11.0	3.7	2.9	-
2002	4.9	1.8	12.5	2.1	2.6	-
2003	3.9	2.4	9.6	2.5	2.9	-
2004	2.1	1.2	9.5	1.4	1.6	-
2005	2.0	1.3	9.2	1.4	1.8	-
2006	2.3	1.9	9.2	1.7	2.0	5.7
2007	2.2	1.6	Site Discontinued	1.5	1.7	3.2
2008	2.3	1.6	-	1.6	2.0	2.8
2009	2.1	1.6	-	1.7	1.8	2.6
2010	1.6	1.0	-	1.2	1.6	1.7
2011	1.4	1.3	-	1.4	1.9	2.8
2012	1.2	1.1	-	1.0	1.1	1.6
2013	1.0	0.7	-	0.7	0.9	1.2
2014	0.9	0.7	-	0.7	0.8	1.3

Year	KC01	KC02	KC03 (Site discontinued 2007)	KC04	KC05	KC06
2015	1.25	0.78	-	1.0	0.94	1.8
2016	1.18	0.87	-	0.89	0.92	*6.75*
2017	0.57	0.56	-	0.55	0.61	0.73
2018	0.57	0.47	-	0.78	0.53	0.85
2019	0.49	0.38	-	0.42	0.44	0.69

Benzene (C_6H_6) monitoring is currently completed at five locations across the borough using BTEX diffusion tubes, these include two Roadside, two Background, and one site in close proximity to a petrol station forecourt. The petrol station has operated Stage Two (in addition to stage one) Vapour Recovery since 2007.

Two AQOs have been set for the assessment of benzene, a running annual mean of 16.25 $\mu g/m^{-3}$ (any exceedances within Table J shown in bold) to be met by 31.12.2003, and a more stringent Annual Mean of 5 $\mu g/m^{-3}$ (any exceedances within Table J shown in italics) to be achieved by 31.12.2010.

Table J shows that the 2003 AQO has been met since 2000 (the measured annual mean is assumed to be the equivalent of the running annual mean), and since the introduction of the 2010 AQO only one annual mean concentration has been recorded in excess of 5 $\mu g/m^{-3}$; at site KC06, located at a petrol station, which recorded an annual mean of 6.75 $\mu g/m^{-3}$ in 2016.

The highest annual mean concentration of benzene recorded every year since 2000 has been at a site close to a petrol station. KC03 was located close to a petrol station before the sites discontinuation and KC06 is located close to a petrol station on Old Brompton Road / Clareville Grove.

Aside from the initially high concentrations monitored at the now discontinued NC03 site, monitored concentrations have been low at all of the monitoring sites. The only exceedance of the 2010 AQO was in 2016 at KC06 and following this high monitored value the concentration at the location reduced in both 2017 and 2018. Within 2019, as in 2018, there were no exceedances of the 2010 AQO at any monitoring location.

2. Action to Improve Air Quality

2.1 Air Quality Action Plan Progress

Table M provides a brief summary of RBKC's progress against the Air Quality Action Plan, showing progress made this year. New projects which commenced in 2019 are shown at the bottom of the table.

Table M. Delivery of Air Quality Action Plan Measures

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
X1.Support vulnerable hospital discharge patients with heart and lung conditions	Provide air quality advice and home modifications to discharged hospital patients, particularly those most vulnerable (i.e. children/elderly) with heart and lung diseases.	Public Health will explore opportunities for joined up working with adult social care and the NHS to provide quality advice and home modifications to discharged hospital patients particularly those most vulnerable (i.e. children/elderly) and those with heart and lung disease.
1. Support and promote air quality awareness programmes	Support and promote the schemes Breathe London, Airtext and Walkit to include CityAir/LondonAir and 'Breathe Better Together' principles to provide more information to a wider audience of subscribers.	Public Health continue to fund this scheme. Between April and November 2019, there were 12 new subscribers, which takes the total, as of the 30th November 2019 to 344 subscribers to airTEXT in RBKC. Of these, 88 prefer to receive alerts via email, 206 via text message and 50 via voicemail. An internal evaluation of AirText suggests that 3% of users choose to take their car after receiving an AirText alert. There is therefore concern that alerts are being used to fuel actions contributing to congestion levels. Further work is needed with AirTEXT on health advice given with texts.
2. Support school and community campaigns to reduce smoking at home	Carry out air quality campaign through the 'Healthy School Partnership' at primary schools and 'Thrive Tribe' in the community to reduce domestic smoking at home.	Smoking cessation services were re-commissioned in 2019. The service now responsible for smoking prevention in young people is called Insight which started in July 2019.

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
		Insight has developed for schools and colleges a 50 min lesson plan and assembly presentations including Shisha awareness. Between July – February 2020, Insight has undertaken 28 x 50 minute sessions within 8 Schools/Colleges across WCC & RBKC. Total Number of school/college students reached 1,039. Insight make their stalls as interactive as possible to encourage young people to engage using the following prompts to demonstrate effects of smoking: • CO_2 Diagnostic kit, used to test how much CO_2 is in young people's lungs. • Demo Lung that has been damaged by alcohol • Leaflets & information etc • Shisha pipe
3. Support initiatives to improve outdoor air quality	Identify local needs including smoke free areas and air pollution abatement through 'Healthy Parks/Playgrounds' initiative.	Not yet started. Work continues to be undertaken by the Bi-Borough Public Health Team who is currently focussed on what is being done in Westminster to adapt local park by laws. The results of this will then inform work in RBKC.
X5 Produce policy guidance on the use of e-cigarettes in the workplace	Develop policy guidance for commercial premises on the use of e-cigarettes in the workplace to improve indoor air quality.	RBKC does not currently have a position on e-cigarettes.
4 Promote initiatives to reduce smoking at home	Ensure 'Smoke Free Homes' is promoted through the NHS 'Stop Smoking Service'.	The new adults Integrated Healthy Lifestyles Service (called One You Kensington and Chelsea) which incorporates smoking cessation services began in January 2019. In 2019, 87 people signed smoke free home pledges in RBKC. 13 households were eligible and referred to LFB for Home Fire Safety Assessments. In 2019 RBKC had 813 people quit smoking through the 'One You' service which is above the annual target of 800.
5. Support financial saving schemes that aid residents living in fuel poverty	Support the delivery of the Big Energy Switch 2015, a collective energy switching scheme to help residents negotiate tariffs on gas and electricity and to aid residents living in fuel poverty in line with the 'Healthier Homes' scheme.	The Green Doctors have provided fuel poverty advice and energy switching advice to RBKC vulnerable residents and Grenfell survivors.
X7 Encourage cycling as a non-polluting mode of	Promote cycling through GPs, 'GP Navigator', 'Health Trainer' and 'Cycle	The Social Cycling programme continues to offer ongoing cycle skills training sessions from complete beginners to advanced cycling. We trained over 370 people in 2019-20, most of them from BAME groups.

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
transport and to combat obesity	Coordinator' schemes to improve heart/respiratory health, combat obesity and promote non-polluting transport modes.	91 people who live, work or study in RBKC attended a bike maintenance training course.
6 Discourage burning of logs and house coal	Launch an initial publicity drive backed up by yearly campaigns in the autumn to highlight pollution caused by burning non-smokeless fuels in household fireplaces backed up with enforcement for persistent offenders.	The whole borough is a smoke control area and the Council continues to provide advice to residents and businesses about what this means. As well as responding individually to direct enquiries, the Council website also provides information about wood burning in the borough and is updated when required.
7 Support vulnerable residents to reduce energy consumption and bills	Support residents by providing energy efficiency advice and by installing small and low-cost energy efficiency measures to combat climate change. Reduce their energy bills and carbon footprint, through the Healthy Homes project and through home energy visits by trained green experts.	The Council has received funding from the Warm Homes Fund which is provided by the National Grid and administered by Affordable Warmth Solutions (AWS) to deliver a fuel poverty (home energy programme) project called Homes4Health during 2018-2021. In 2019, 242 free home energy visits took place. These were for RBKC residents vulnerable to the effects of living in cold housing, identified as being elderly, on benefits and/or disadvantaged. As part of these visits, 962 small energy efficiency measures were installed including draught proofing, energy efficient light bulbs, radiator panels, TV power downs, shower heads and water saving devices, energy monitors, door brushes etc. According to an Energy Saving Calculator, these measures have brought a cumulative £3,644.98 financial savings; saved 15,929.3 kg of CO2e and 2,092,746.0 litres of water. The free home energy visits are delivered by independent certified advisors from Groundwork London, called Green Doctors. A visit lasts around 90 minutes and the main objectives of the programme are to provide warmer, affordable and healthier homes, increase comfort and reduce bills to some of London's most vulnerable residents experiencing severe fuel poverty. Homes4Health free energy efficiency home visit includes: • Tailored energy efficiency advice • Advice for on using the heating controls • Fitting/installing free small energy and water saving measures

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
		• Refer residents for larger measures • Further help on how to maximise use of fuel discounts • Offer impartial advice on switching fuel companies to save money • Improve resident understanding of utility bills by 1-2-1 advice During the visit, Green Doctors also offer the following services to residents as part of the visits: - Health and well-being services - London fire brigade for a free fire safety check and smoke alarm - Benefit checks - Handyperson schemes - Befriending programmes In 2019, the Green Doctors attended 25 events in RBKC where they were able to engage with 344 people and to get 118 residents referred into the scheme. They also trained more than 30 Council and community frontline staff on the fuel poverty scheme.
8 Promote case studies of higher- standard insulation and heating systems for existing buildings in the borough	Promote exemplar case studies about sustainable retrofit and regeneration schemes within the borough that have improved insulation and heating systems, and which have exceeded the minimum standards set out in Building Regulations.	The Council has been part of the Ecofurb/Retrofit Together project since 2019 which encourages energy improvements for the able to pay market in RBKC. Case studies will be explored as part of this project in 2020/2021. The Council declared climate emergency in October 2019 and adopted new targets: for the Council to be net zero carbon as an organisation by 2030 and for the borough to be carbon neutral by 2040. Heating systems and case studies have been explored and used for the new homes which the Council is developing. Three case studies for LED lighting projects completed at Ashburnham Community School, St Mary Abbots School and Oratory RC school were produced in March 2019.
X12 Improve the energy efficiency of the six main Council's buildings	Deliver energy efficiency projects in six of the Council's main facilities (Town Hall, Chelsea Old Town Hall, Pembroke Road, Carlyle building, Violet Melchett and Pembroke road car park).	The refurbishment works at Chelsea Old Town Hall was completed in March 2019 and increased staff capacity by bringing large parts of the lower ground floor of the building into functional use as office space. The works included the installation of modern electrical distribution boards and wiring, energy efficient electrical and plumbing fixtures/fittings, adjustable climate and ventilation controls. Significant building

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
		fabric enhancements were also introduced including damp-proofing, void insulation and secondary glazing which further enhanced energy efficiency. Works to improve Pembroke Road also commenced in 2019 (see Action X13).
X13 Improve the use of space in council buildings to increase occupancy and reduce overall energy demand	Improve the use of Council buildings making them more sustainable, flexible and cost- and space-efficient, so that the remaining sites are more energy efficient. This includes the closure of unsuitable and energy inefficient Council sites.	During 2019, the works were scoped, designed, tenders requested and a contractor appointed. Work has commenced to replace all mechanical and electrical infrastructure in the building with new energy efficient equipment and water saving taps. The building is being refurbished in phases while staff are in occupation and residents live above. The works will be completed in 2020. Staff from other sites will be relocated here to enable closure of other buildings.
9 Continue to insulate the heating systems in schools	Deliver and support Flange & Valve insulation projects to the remaining 11 schools to reduce carbon emissions and improve energy efficiency	In 2019 there were no flange and valve insulation projects delivered in schools through the climate change/energy efficiency programme in schools. The main priority for 2019 for the Climate Change Team was to focus on delivering LED lighting projects in schools as these have higher carbon savings attached. Out of 31 RBKC schools included in the Council's carbon performance scope, 29 schools had flange & valve insulation projects already installed. These schemes were carried out through the Council's climate change energy efficiency programme for schools or done independently by the schools. The two remaining schools identified as potential sites for delivering flange & valve projects in the future are: Golborne's Children's Centre and Latimer Education Centre RBKC. They will be explored in 2020 subject to funding being identified.
10 Make sure that boilers in schools are set up and controlled to better adapt heating to each school's needs	Deliver heating health check projects to a large number of schools	Three schools were identified in 2019 for heating health check projects (Oxford Gardens RC, St Clements & St James RC and All Saints College RC). However, these did not go ahead as the funding available was used instead for LED lighting projects. These three schools will be scheduled to have their heating health checks completed in 2020/2021, subject to funding. The schools requested support with installing LED projects to help them reduce their energy bills, improve the comfort for pupils and teachers and improve the energy performance of the schools' buildings, and the Council was keen to do this.
11 Continue to install LED energy- efficient lighting in schools	Deliver energy efficiency lighting projects within schools to increase the use of LEDs and reduce CO_2.	During February half term, four LED lighting projects were installed as part of the climate change/energy efficiency programme at the following schools: Avondale Park Primary School, Ashburnham Community

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		School, Bousfield Primary School and Thomas Jones School. Cumulatively, it is estimate that these projects will result in around 40 tonnes of CO_2 savings per year and £10,580 financial savings for the schools. A further four schools were identified, and these works will take place in February 2020.
X18 Introduce more energy efficient street lighting	Introduce more energy-efficient street lighting	No new energy efficient street lighting projects were completed in 2019 because the focus of the Street Lighting Team was to replace old and damaged lamp posts across the borough. The Street Lighting Team is looking to plan more LED lighting conversions towards the end of 2020 depending on the funding available and the lockdown restrictions associated with Covid-19. Out of 14,808 lighting points in RBKC, 3,591 (24%) have been converted to LEDs so far in the last years**.** In 2019/20 the carbon emissions from street lighting reduced by 2,121 tonnes compared to the baseline year of 2007/08.
12 Embed climate change and sustainability topics in the schools' curriculum	Organise the Children's Parliament on the Environment, deliver energy champions and climate change workshops/sessions and carbon reduction initiatives in schools	The Children's Parliament on the Environment project commenced in November 2019 and five RBKC schools signed up to take part in this yearly event with the following topics: • St Francis of Assisi Primary School: Climate change and air quality issues. • Park Walk School: Flooding and sustainable drainage systems. • Oratory RC Primary School: Single-use plastics • St Charles RC Primary School: Green parks and biodiversity. • St Clements and St James Primary School: Upcycling Each school received four bespoke environmental educational sessions to guide and help them with the project. These educational sessions were delivered between November 2019 and January 2020. The Children's Parliament on the environment event was scheduled to take place in March 2020 but due to coronavirus and the lockdown restrictions this had to be postponed. In 2019, the Council also delivered the following environmental educational initiatives in schools: • Three climate change assemblies were organised at St Charles RC Primary School and Ashburnham Community School between July and November 2019. Over 260 children across the two schools attended. The aim of the assemblies was to teach pupils about the causes and impacts of climate

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
		change and to raise awareness on what actions can be taken at school and at home to reduce environmental footprint; • In July 2019 a climate change posters competition was launched for all the schools across RBKC as part of the Climate Action Week. Pupils were asked to showcase their own ideas for how climate change can be tackled in their local area. The posters have been exhibited at the Car Free Day Event in November 2019 and at the Greener Living Event in February 2020; and • In June 2019, a climate change workshop was delivered with the Eco-Council group of pupils from St Joseph's Primary School which focused on actions/initiatives to reduce the school's carbon footprint.
13 Develop planned programme of communal boiler upgrades and renewals within council housing	Complete the review of communal boilers from council housing and develop a planned programme of replacements and upgrade works. When possible, install individual controlled heating within flats.	No communal boilers were replaced in 2019. Some replacements across estates are complex and feasibility studies are required. The Lancaster West Estate is currently planning for the delivery of a 57 million capital investment for which reviewing and removing poor performing boilers and switching from gas to renewable sources is part of the process. Whilst planning is on-going, the following work took place: switched the existing temporary boiler supplying energy to Hurstway Walk, Testerton Walk, & Barandon Walk from diesel to gas; and switched supply of energy in void homes to Bulb (Green energy supplier). The Council is planning to replace the communal boilers in Cremorne estate between 2021 to 2024.
14 Install ultra-low-nitrogen oxide (NOX) boilers in council housing	Install ultra-low pollution boilers in next phase of boiler replacement in social and council housing (Further phase planned for 2019-20).	During 2019, 402 boilers were replaced. There is a plan to replace a further 300 boilers in 2020/21.
15 Incorporate energy efficiency improvements into the Council's planned social housing renewal programme	Incorporate energy efficiency improvements into the planned renewal programme, for example: upgrade windows from single glazed to double glazed and improve the insulation standard for TMO properties when renewing roofs.	A capital programme of £267 million over the next seven years was approved by the Leadership team in February 2019. Since then, the Council has scoped and packaged 37 separate projects which will focus on repair and replacement of items that form the building envelope. Works should be commencing late 2020. Design consultants for delivery of 57m capital programme for Lancaster West Estate are currently being procured. Sustainability and carbon reduction ideas, criteria and concepts run like a stick of rock though the tender documentation of the programme.

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
		We are part way through a feasibility study carried out by Retrofit Accelerator Homes The study is looking at all residential buildings on the Lancaster West Estate with the aim of identifying what measures would need to be put in place to reduce carbon and make buildings as energy efficient as possible. The Mayor of London has given his written backing to the project at Lancaster West. Treadgold House is also the subject for MUSTBEO European project backed retrofit design competition which is looking at innovative ways to retrofit existing blocks. Designs will be considered as part of the refurbishment of the estate. As part of the Lancaster West Estate refurbishment programme the Council will review its supply chains with the aim of reducing embodied carbon. 30% of staff are employed from the local area around Lancaster West which means less reliance on public transport or cars. Additional benefits around the estate include: • changed lights within voids to LED lighting • installed Switchee and Nest thermostats in all void homes • Installed water efficient shower heads (Methven) in all voids • introduced dual flush toilets • piloted resident composting • created a Tea Garden on the estate • Purchased an Electric Van.
16 Explore the opportunity to install renewable energy technologies in the council's social housing (e.g. solar panels)	Through additional or external funding Renewables will be considered and explored but insulation and energy efficiency will be a higher priority. It will be undertaken when it is a practical and affordable solution.	The Housing Management/Asset Management Team is about to recruit for two specialist energy posts, to work together with the corporate energy resources and support the Council's climate change objectives. A key area that these resources will focus on is working with consultants to use data from the Council to model potential scenarios and projects for the installation of renewable technology. This in turn will feed into the planned capital programme where appropriate. In addition to reviewing all stock for the Lancaster West Estate, as part of the programme design and feasibility studies being undertaking, the Council is also part way through a feasibility study looking at the replacement of heat networks on the estate with renewable sources. This study is supported by the Heat Network Delivery Unit at BEIS and should mature into a funding bid to the Heat Network Investment Project (or successor Green Heat Network Fund) for Lancaster West.

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
17 Ensure that major building sites minimise dust and emissions including those from on-site mechanical plant	Apply the new London Plan – The Control of Dust and Emissions During Construction and Demolition Supplementary Planning Guidance and require low-emission NRMM with appropriate Euro standards on major redevelopment sites.	The Council has been part of the Pan London NRMM Project since the projects outset and continues to support its work. As part of conditions set on Planning Applications developers are required to sign up to the NRMM website and register their development site and NRMM. Between April – December 2019, 62% Sites were self-compliant and 38% of sites were compliant. The Councils Construction Management Team continues to proactively monitor much of the construction in the borough that falls within the remit of this Code, working alongside colleagues in existing teams such as Noise and Nuisance and Streetscene Enforcement. The Council continues to require Air Quality (Dust) Management Plans, Air Quality Monitoring and Construction / Demolition Environmental Plans in line with the Mayor's SPG are submitted for major developments in the borough via the planning regime. The Pollution Regulatory Team is working alongside Planning to produce a Green Supplementary Planning Guidance which will include a section on Air Quality which will update the existing air quality SPG.
18 Ensure that the planning system minimises impact of new development during operation	Utilise the planning application process to assess the implementation of energy strategies in major developments and make air quality and climate change recommendations.	The Local Plan Partial Review (LPPR) was adopted in September 2019. It is now called the Local Plan 2019 https://www.rbkc.gov.uk/planning-and-building-control/planning-policy/local-plan/local-plan-2019**.** Policy CE5 requires all major developments to submit and air quality assessment that will include impacts form their energy strategies. CE5 also resists biomass combustion and combined heat and power technologies/CCHP which may lead to an increase of emissions. It seeks to use greater energy efficiency and non-combustion renewable technologies to make carbon savings unless its use will not have a detrimental impact on air quality. Policy CE1 refers to the London Plan which requires 'zero carbon' homes for major residential development. In relation to this the Planning Department together with the Climate Change team has set up a carbon offset fund. Developments that cannot meet zero carbon on-site are expected to make a financial contribution to offset the remaining carbon. The Climate Change team has identified projects where this money could be spent such as energy efficiency improvements in public and community buildings (community centres, schools, libraries); community owned solar energy projects, developing fuel poverty programmes and energy retrofitting to support vulnerable residents; energy efficiency programmes in

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
		schools etc. Policy CE1 also requires BREEAM very good to be achieved for non-residential development of 1,000sq m or more. In 2019, planning applications were reviewed for air quality impacts and this included developments with energy strategies.
19 Use the planning system to ensure that emissions from energy and heat sources in new developments are minimised	Make informed decisions on planning applications about 'Decentralised Energy' (DE) networks, 'Combined Heating Power (CHP)', biomass and biofuel, by considering the balance between air quality and carbon reduction benefits. Assess and make recommendations.	The Local Plan Partial Review (LPPR) was adopted in September 2019: https://www.rbkc.gov.uk/planning-and-building-control/planning-policy/local-plan/local-plan-2019 Policies CE1 and CE5 refer to DE, CHP, and biomass. Both policies combined would help make a more balanced decision of the site's suitability for the use of CHP due to air quality impacts and if carbon saving targets can be met using different methods with a lesser impact to local air quality.
20 Ensure any new homes forming part of major developments to be zero carbon	Apply the London Plan Policy 5.2 and utilise the Local Plan to request residential elements of all major schemes to achieve 100% reduction on site; if not possible, a minimum 35% reduction of regulated carbon emissions on-sit, and offset all remaining carbon emissions up to 100%.	To accord with the requirements of the London Plan, from the 1 April 2017, the Council fully implemented the zero carbon standard through the creation of a Carbon Offset Fund. This fund will be used for carbon reduction initiatives which will benefit residents and the community. The Local Plan https://www.rbkc.gov.uk/planning-and-building-control/planning-policy/local-plan/local-plan-2019 contains policy CE1 which requires non-residential development of 1,000 sq m or more to meet BREEAM very good with 60 per cent of the unweighted credits available in the energy, water and materials sections and conversions and refurbishments of 1,000sq.m or more non-residential development achieve BREEAM very good rating. For residential development we follow the London Plan policy.
21 Improve walking and cycling access to White City	Provide new direct pedestrian and cycle routes by means of a bridge and a subway between the White City Opportunity Area and Norland and Notting Barns wards.	The bridge project has stalled as the Council is yet to secure the requisite eastern landing site. We expected the eastern landing site to be transferred to the Council under a planning obligation. Unexpectedly the development proposal that we had hoped would yield the landing site has been refused planning permission twice. Imperial and its contractor have been working with Network Rail to progress the design of the Underpass to achieve a robust cost estimate for its build. Based on this information the board of Imperial will decide on whether or not to fund the Underpass in the autumn with a view to delivery during 2021.

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
22 Continue to reduce the Council's vehicle emissions	Deliver the Council's Green Fleet Strategy and Action Plan and implement the green procurement process to lease ultra-low emission vehicles and introduce a travel hierarchy with active travel at the core of it	In 2019, the Council continued to implement the Green Fleet Strategy and Action Plan and encourage all staff and contractors (through tender clauses) to green their fleet with ultra-low emissions vehicles and/or encourage active travel. To allow the transition to electric vehicles for the Council fleet, four Council offices have been surveyed and electrical upgrades have been carried out in 2019 to install workplace charging points: Kensington Town Hall, Pembroke Road, Holland Park and Tavistock Depot. The procurement process to commission a supplier to install the workplace charging points started in January 2019 and the supplier was appointed in February 2020 for works to be completed in April 2020. The RBKC mayor's old Bentley has been replaced with an electric black cab and a charging point was installed in June 2019 for this purpose. The main actions delivered in 2019 as part of the Green Fleet Strategy and Action Plan were: • Developed an internal guide on green procurement and travel hierarchy which was shared with all Council fleet managers; • Discussions held between the Council's Procurement Team and Lex Autolease (leasing company) to discuss about to encourage the leasing of ultra-low emission vehicles as part of the contract; • 19 Council fleet drivers and contractors undertook eco-driving training to learn how to use electric / hybrid vehicles in a more efficient way. This is estimated to reduce the energy consumption required to charge the vehicles by 16% and to increase electric vehicles battery range by 20%; • In December 2019, the Council's Street Lighting Team replaced two of their existing diesel vans with fully electric vans. The Housing Team procured an electric van for the use of Lancaster West Housing Team; • Atlas FM (the Council's Soft FM Contractor) included three full electric vans as part of their fleet in March 2019; and • In 2019, the Council had 86 vehicles in its fleet and nine vehicles were electric / hybrid. This represents 10% of the whole fleet.
23 Continue to reduce emissions from our contractor's waste collection and street cleaning vehicles	Work with our contractor SITA to reduce emissions from its fleet.	In 2019/20, carbon emissions of from the Council' waste contractor fleet operations (Suez) decreased by 7 tonnes compared to 2018/19 and by 242 tonnes of CO_2 when compared to 2007/08. The entire SUEZ fleet will become ULEZ compliant in the latter part of 2020, subject to vehicle production not being adversely affected by Covid-19.

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		The Council has now trialled an electric RCV in the borough. The results were extremely positive and encouraging for the future of the fleet. The Waste Management Team is in discussions with Property colleagues regarding the charging infrastructure and having this installed over the next couple of years. The current re-procurement of the waste collection and street cleansing contract puts a heavy emphasis on the transition to an electric fleet ASAP within the new contract. We anticipate the first electric vehicles to start service in 2022/23. The new contract will also potentially see a re-routing of collections, that would result in fewer vehicle movements.
24 Work with contractors to green their fleet and comply with ULEZ	Include requirements for contractors to use low and ultra-low emission vehicles as part of their operations and ensure their fleet is ULEZ compliant.	In 2019 the Council advised the following contractors about the ULEZ requirements: HCT (Transport Contractor), NSL (Parking Enforcement Contractor), Atlas FM (Soft FM Contractor), Idverde (Parks Maintenance Contractor). All four contractors confirmed that their fleet vehicles are ULEZ compliant. Atlas FM has three electric vehicles in their fleet (out of five).
X34 Maintain an up-to-date Council Travel Plan	Undertake staff survey and site audits and revise the travel plan.	Survey delayed until Spring 2020
25 Increase public awareness to reduce engine idling	Reduce idling of engines by raising awareness of public health and environmental benefits in addition to using enforcement powers to issue fines to those who persist. Carry out campaigns targeted at the public, fleet managers and council drivers, e.g. including a pamphlet in permit renewal paperwork. Erect temporary signage in target areas.	As part of the Pan London Anti Idling project a School Air Quality Workshop was given involving a total of 60 KS2 children at Our Lady of Victories Primary School. At this event: • 100% of drivers switched their engines off when asked; • 67% of vehicles approached were idling; 33% of drivers spoken to already had their engines switched off; and • 67% pledged to switch off their engine in the future. Further sessions are planned at other schools in 2020. As part of the documentation provided with Residents' Parking Permits the guide contains the 'no idling engines' signage and the request to help the Council improve air quality. RBKC celebrated World Car Free Day on 22/09/2019 by working in collaboration with local organisations and communities to host a series of temporary road closures filled with exciting activities. • Golborne Road hosted a number of activities including a solar powered silent movies, space hopper race, smoothie bike, arts, crafts and gardening activities;

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
		• Exhibition Road was closed to host the finale of the London Design Festival. The V&A, Design Museum, Natural History Museum, Science Museum, Imperial College London and Brompton Design District hosted special events on designing solutions to the climate emergency; and • The southern end of Pavilion Road was closed to allow pedestrians to enjoy the selection of businesses without vehicles to create a true village feel. The Council has produced an Air Quality Toolkit (which is an adaption of the TfL Cleaner Air for Schools Toolkit), which aims to provide information, tools and resources to enable teachers to promote and educate students about air quality around schools and how active and sustainable travel can help improve it. The Councils aim is to work with schools across the borough to improve air quality, especially immediately outside the school gates through a range of activities that can be developed alongside the School Travel Plan. This toolkit was designed for teachers to use with their students, as part of the wider curriculum and school travel plan activities. It is most suited to Key Stage 2; but can be used as a guideline to plan and adapt activities for Key Stage 1 and SEN students. RBKC is looking to install a number of Healthy School Streets, which turns a road (or section) outside a school into a pedestrian and cycling zone during the schools opening and closing times. These timed road closures aim to reduce congestion and poor air quality directly outside the school gates by preventing parents' vehicles from access the road to drop off or collect children. Enforcement Team updates: • No new FPNs have been issued from the previous year. Number of signs installed (and recorded) on SR system across the Borough is 88 between May 2019 and 12 May 2020. • Seniors carry out or organise once a month patrol around hot spot schools, identified through SR complaints. We hand out leaflets and many schools have introduced banners to encourage a 'no idling zone'. • Enforcement teams have also carried out joint patrols with parking wardens and TfL around Harrods and Tube Stations.

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
X38 Review of effectiveness of parking permit fee structure in encouraging the uptake of cleaner vehicles	Review Parking Policy banding to encourage choice of lower-emission vehicles.	This work has been delayed due to technical difficulties – we are now aiming for an April 2021 start date for the changes (subject to consultation).
X39 Increase number of on-street charging points for electric vehicles	Expand the availability of on-street charging points for electric vehicles.	We have installed and commissioned 175 new lamp column chargers and upgraded 58 existing chargers for use without Smart Cables and consulted on three 50kW rapid charging points which will be installed in 2020.
X40 Encourage car clubs to go electric	Explore with car club operators the potential for introducing or increasing the number of electric cars or hybrid electric vehicles in their fleets.	Floating Car Club services have now been introduced into the Borough and are provided by two-operators, Zipcar Flex and Ubeeqo. The agreed contracts allow for a 50% permit reduction for all fully-electric vehicles. Currently around 30% of the Zipcar Flex fleet is fully electric and this has translated into an average of 10 Electric Vehicles in operation within the borough on a daily basis. This number is expected to grow further in 2020. Ubeeqo have introduced a number of hybrid vehicles into their fleets and it is hoped this number will increase. They also are continuing to explore the possibility of providing a small number of lamp column EV charging points for their fixed bay fleet.
X41 Encourage children to walk or cycle to school	Double the number of schools with Silver or Gold accredited School Travel Plans and promote walking and cycling to school as part of a combined effort to tackle childhood obesity. Introduce advice on engine idling in promoting and creating travel plans.	In 2018-19, 38 schools had accredited travel plans, 25 at gold level, 6 at silver and 7 at bronze level. Five new schools have been engaged (but not yet accredited). We again saw existing schools increase on the quality and delivery of initiatives of their travel plans, with many taking the next step to silver or gold accreditation. In May 2019 we held our fourth Dinosaur Discovery Walking Trail. 22 schools took part.
X42 Use cycle training to promote more cycling	Encourage greater use of cycling, by increasing the number of free cycle training sessions for residents, visitors and workers in the borough.	1,693 sessions of cycle training took place with adults and 1,453 sessions took place with children in 2019-20.

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
X43 Help the Mayor of London to create cycling grid of specially designed routes	Work with the Mayor of London to improve cycle routes in London by introducing the Cycling Grid	The Kensington High Street to Shepherd's Bush Cycleway was completed in early 2019. Consultation on the Pembridge Square to Meanwhile Gardens and Kensington High Street to Notting Hill Cycleways took place in March and June 2019 respectively. Both of these routes are scheduled to be built in 2020.
26 Open up more one-way streets to cyclists using both directions.	Continue to convert one-way streets to two-way operation for cycling.	The Council completed the traffic order process to enable two-way cycling in the five streets following our 2018 consultation. These will be delivered in 2020-21. A new feasibility study has been commissioned for a further four one-way streets.
27 Create safe areas for cyclists at traffic lights	Consider opportunities for introducing Advanced Stop Lines for cyclists when reviewing traffic signals.	We implemented nine advance stop line locations in 2019-20 at busier roads such as Old Brompton Road, Westbourne Grove and Kensington Park Road.
28 Support residents to take action in their local areas and implement community energy projects	Encourage and empower residents to help tackle climate change and reduce energy consumption in their local areas and homes. Stimulate attitude and behaviour change through community energy projects and energy workshops/training.	A community event 'Community Energy in a Climate Emergency: West London takes action' took place on 4 July 2019 at Kensington Town Hall. The event was organised in partnership with Community Energy London, Repowering London and Ealing Council and offered information on how local community groups from West London developed community energy projects (e.g. North Kensington Community Energy Project and Ealing Transition). Around 45 residents from RBKC and Ealing attended. In September 2019 the Council organised a Car Free Day and worked in collaboration with local organisations and communities to host a series of temporary road closures, events and activities aimed to promote behaviour change. In October 2019 the Council organised a Residents Summit event in the Great Hall at Kensington Town Hall and promoted the North Kensington Community Energy Project and the Homes4Health fuel poverty programme for residents. Several solar panel making workshops, community events and youth trainings took place as part of NKCE project.
29 Support and encourage the development of community energy enterprises/co-ops	Support community groups to come together and generate clean local electricity and put profits back to the community through solar installation and ethical investment	In March 2019, via the North Kensington Community Energy Phase I project, 289 solar panels were installed on two primary schools (Avondale Park Primary School and Thomas Jones Primary School) and at a local community centre (Dalgarno Trust Community Centre) to generate renewable energy, reduce carbon emissions and to generate a local community fund.

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
		The 86.27 kWp solar panels provide each building with clean electricity saving approximately 32 tonnes of carbon emissions every year (equivalent with powering around 23 homes). The Council has carried out feasibility studies to assess the solar potential for various public and Council owned buildings. Repowering London has received funding from the GLA/Mayor's London Community Energy Fund to extend the community owned energy schemes – NKCE Phase 2 and 3. The applications have been successful. In 2019, North Kensington Community Phase II was launched and 138-150 kWp of solar panels (485 solar panels) were scheduled to be installed on the Westway Sports Centre in spring 2020. A planning application has been submitted and approved for this project in 2019. A pre-registration scheme was submitted to Ofgem and 50kWp of the solar system will be eligible for the Feed-in-Tariff subsidy. This installation is estimated to bring 27 tonnes of carbon savings per year which will allow NKCE to create a 10% unit price discount for electricity purchase for the Sports Centre. The project will be also generating a further £45,000 for the North Kensington Community Energy Community Fund. For NKCE Phase 3 the buildings identified are: St Quintins Children's Centre, The Tabernacle and Ark Brunel School. In October 2019, North Kensington Community Energy (NKCE) received the Community Renewable Energy Project Award.
30 Encourage and increase the renewable uptake and green energy in the borough	Deliver and facilitate pan-London solar schemes which support residents to install solar panels	In August 2019 the Council signed up to take part in the GLA'S Solar Together Phase III scheme to support residents to install solar panels at highly competitive prices and to reduce energy bills and supply their homes with clean, local energy. 241 residents expressed an interest, 55 residents have accepted their offers and six installations were completed so far by March 2020. The Council was also part of the Solar Together Phase II scheme which took place between August 2018 and April 2019. 19 solar installations took place in RBKC by the end of March 2019 which are estimated to save over 300 tonnes of carbon over the lifetime of the installations.
31 Identify and train green champions in the community	Identify and sign up green champions/leaders and residents' groups within the borough to initiate and support the delivery of energy	Through the Homes4Health fuel poverty scheme, more than 25 events have been attended by the Green Doctors to promote the free home energy service and support for vulnerable residents and to identify champions to refer residents into the schemes. 344 people were engaged and 118 referrals for the home energy visits have been made.

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
	reduction and energy generation projects or provide energy advice to their local community.	Groundwork London and the Green Doctors provided frontline training on energy switching advice for Council's staff working with vulnerable residents and Grenfell survivors. Through the North Kensington Community Energy scheme, Environment Roundtable and Extinction Rebellion Kensington and Chelsea group more than 50 volunteers and members have been identified as green champions.
32 Understand better the sources and quantities of greenhouse gas emissions across the borough	Analyse the sources and quantities of greenhouse gas emissions across the borough.	In October 2019 the Council declared a climate emergency and adopted two new carbon reduction targets: • The Council to become net zero carbon by 2030 from all its buildings and operations. • The borough to become carbon neutral by 2040. The Council has started to work on developing the evidence base through internal carbon management analysis and using the net zero tools available such as the GLA Carbon Neutral Pathways, FOE and Ashden, BEIS, Scatter etc. The Council will be commissioning a consultant to develop the carbon modelling and the roadmap / pathway to carbon neutrality for both the Council as an organisation and for the borough. This will support the development of a Carbon Neutral Action plan and it will assess the emissions impact and the changes required for the Council to become net zero carbon by 2030 and for the borough to become carbon neutral by 2040. In 2019 the Council used the following tools and data sets to gain a better understanding of sources and quantities of greenhouse gas emissions across the borough: • The national data sets released by the Department for Business, Energy and Industrial Strategy (BEIS) which offer a breakdown of carbon emissions by local authorities and by sectors responsible for emissions. The latest set of data released by BEIS was in June 2019 and it covers the period of 2005-2017; • The Scatter Tool for greenhouse gas emissions developed by Nottingham City Council and Anthesis. Scatter is a local authority focused emissions tool which was designed to help local authorities to generate their own greenhouse gas emissions inventory and it offers more comprehensive information about the sectors and sub-sectors responsible for greenhouse gas emissions borough-wide. The tool also allowed a breakdown of greenhouse gas emissions by scope (1,2 &3); and • The Scatter Pathways Tool developed by Nottingham City Council and Anthesis which allows local authorities to project their own decarbonisation pathways based on the findings identified from the greenhouse gas emissions inventory.

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
33 Support local businesses and large organisations to reduce emissions from their operations	Offer environmental advice and sources of technical information to local businesses and large organisations on how to improve energy efficiency of their building operations	The Council declared a climate emergency in October 2019 and committed to the following through this: • To inform residents and businesses about how they are affected by climate change and to support and promote the transition of all residents and business activities located in RBKC to become carbon neutral by 2040, identifying all the financial, legal and other changes necessary to do this. • The Council to become net zero carbon from all its operations and buildings by 2030 and the borough to become carbon neutral by 2040. The Council has also met with local organisations such as the Royal Court Theatre, community centres – Dalgarno Community Centre; Housing providers and landowners - Cadogan Estates, SKE, Octavia Housing; Westway Trust; schools and faith groups to provide advice and support with aligning their policies to net zero carbon and developing action plans to reduce their emissions at pace. Funding opportunities for energy efficiency projects were promoted and funding applications have been submitted for Dalgarno Community Centre during 2019.
34 Encourage visitors to major venues to walk or cycle.	Work with major destination venues in line with the Healthy Workplace Charter to reduce trips using private and public transport by promoting active travel (walking and cycling), using customised maps and adapting existing publicity materials.	Officers developed a walking times map which can be centred on any location for the user to see how long it takes to walk to any destination in RBKC. This will be printed and distributed in 2020-21.
35 Support businesses to reduce their emissions from deliveries	Support businesses to combine and rationalise deliveries (of 100 – 400 Kg loads) using low/zero emissions vehicles and local distribution hubs for final stage deliveries.	Through the Defra Air Quality Grant – Clean Air Villages (CAV2) project, Cross River Partnership (CRP) continued to work with the Council on three project areas in the borough – Earls Court, Ladbroke Grove and Cadogan Estates to reduce emissions from deliveries. As there are no BIDs or business forums in the borough, projects like these prove very useful to get businesses working together to make a difference locally. As part of this, CRP in partnership with Councils, launched an Ultra-Low Emission Supplier Directory. This listed business in and around London that deliver using ultra-low emission vehicles, to promote these businesses and encourage local people and businesses to switch suppliers which will improve air quality.

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
		There were different pages dedicated to each CAV. From its launch in March 2019 to the end of the year the Earl's Court page had 60 page views and 57 sessions, and the Ladbroke Grove page had 26 views and 22 sessions. A session was defined as staying on the page for an extended period of time. In addition; • In Earls Court CRP was able to promote the Peddle my Wheels initiative, which saw four 1-2-1 meetings with café's and pharmacy's and a workshop was held attended by the business forum led by the Means & RBKC Economy team; • In Ladbroke Grove solution, the Council decided to introduce and test a shared cargo bike with rider for local businesses. The cargo bike supplier was identified at the end of 2019 and the trial will commence early 2020; and • With Cadogan Estates, CRP also introduced a Pavilion Road Cargo Bike scheme. E-cargo bikes was the chosen provider and arranged regular deliveries by the Cheesemonger & Fishmonger totalling around 40 deliveries in 4 weeks. The cheesemonger is now going to pay for further delivery slots. Cross River Partnership also secured funding from Defra's Air Quality Grant to deliver the CAV 3 project which RBKC has match funded and work on this will commence in 2020.
36 Continue to work with our main contractors to reduce their energy consumption	Work in detail with the Council's main contractors (SITA, Quadron, Amey) to reduce their overall energy consumption related to the Council's operations (building use and vehicle fleets).	In 2019 the Council continued to work with its main contractors (Suez, Idverde, GLL, NSL, Atlas FM and Bellrock Group to support them with reducing their carbon emissions. The following initiatives were delivered by contractors in 2019 as part of their efforts to reduce their energy consumption and their fleet impact: Suez (Council's Waste Contractor) trialled an electric pedestrian mechanical sweeper and an EV waste collection vehicle to see if these types of vehicles could be included in their fleet. The trial for the EV waste collection truck was successful and Suez are planning to introduce electric waste vehicles as part of their new contract with the Council. The carbon emissions from Suez dropped by 19% in 2019/20 compared to 2007/08. Suez are offering their own eco-driving training for all their fleet drivers on a yearly basis and they are regularly monitoring driving behaviour to ensure that emissions are minimised. As part of the new contract for waste collection and street cleansing, a big emphasis is placed on ensuring that energy consumption is manged effectively.

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
		• GLL (Council's Leisure Centres Contractor) have carried out a series of LED lighting upgrades at Kensington Leisure Centre and at Chelsea Sports Centre during December 2019 and January 2020. These projects are estimated to reduce carbon emissions by 47.84 tonnes of CO2 per year. GLL have also reduced their carbon emissions in 2019/20 by 31.37% compared to the baseline year of 2007/08. • NSL (Council's Parking Enforcement Contractor) reduced their carbon emissions by 61.31% compared to 2007/08. In 2019, NSL reduced their fleet of petrol vehicles by two vehicles and introduced more bikes (20) to be used instead of vehicles. All their fleet of vehicles is ULEZ compliant. • Atlas FM and Bellrock Group (the Council's new Soft FM and Hard FM Contractor) started working in RBKC in 2019. The following measures were introduced as part of their new contract: three out of their five fleet vehicles used by Atlas FM are fully electric and three of their drivers undertook eco-driving training sessions offered by the Council in May 2019. All the cleaning chemicals used by Atlas FM are using non-hazardous chemicals with low environmental impact. Additionally, the cleaning equipment used by Atlas FM across Council buildings has a low energy consumption. The Council's Workplace Facilities Management Team have required that Bellrock Group should always specify and use energy efficient equipment for any installations taking place across the Council's buildings (e.g. motors & pumps).
37 Continue to develop the Community Kitchen Garden scheme	Continue to develop the Community Kitchen Garden scheme which encourages residents and community groups to grow seasonal fresh fruit and vegetables. Local production eliminates deliveries (zero food miles) and helps tackle childhood obesity.	Ongoing maintenance, extensions and repairs continue in community kitchen gardens throughout the borough particularly those first installed at the start of the project ten years ago. A redesign has been drawn up for the expansion of growing space at Wiltshire Close Estate and works to the entrance of Oxford Gardens now completed. The target for ten new kitchen gardens to be installed annually has be moderated to a more realistic five due to fewer suitable locations being available to develop. As approximately 65 gardens are now in place throughout the borough it is likely that the rate of new kitchen gardens installed will tend to be reduced. Expansion of existing kitchen gardens will be explored with the council's estate management team to optimise use of sites already established. Where possible new sites will be sought and developed in response to a renewed interest in food growing.

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
		A license has been granted for connecting a water supply at Norland Road kitchen garden – works to resume after lockdown restrictions ease. New groups have been established at St Charles Centre for Health and Wellbeing and Chelsea and Westminster Hospital in their kitchen gardens supporting mental health through food growing and gardening initiatives.
38 Commercial production of fresh fruit, vegetables and flower seedlings through the charitable Cultivating Kensington and Chelsea gardens in the borough	Overseeing the operations of the Cultivating K&C and support volunteers in establishing policies and systems. All profits from sales to the community kitchen garden clubs	Council community gardeners continue to support operational activities at CKC assisting with sowing regimes, cultivation and guidance for volunteer gardeners. Inductions for new volunteers at CKC delivered by the community gardeners on a quarterly basis. Income from plant sales increased over the last year with improved marketing and social media playing a role. CKC greenhouses included in a group of Olympia community gardens open to visitors for Open Garden Squares Weekend June 2019. Plans to take part again in 2020 postponed due to COVID-19. Donations of herbs, fruit and vegetables raised from surplus stock grown on site by volunteers are being donated to St Cuthbert's Centre, a local charity providing lunches to the homeless, to be used in their kitchen.
39 Increase recycling by Council staff members	Refresh the promotion of recycling to members of Council staff.	In 2019/20 four waste audits were carried out by Suez to monitor the recycling rate in the Council's offices. Additionally, contamination audits were undertaken by the Council's Green Champions and Kensington Town Hall and Pembroke Road. The average recycling rate for 2019/20 was calculated at 60.28% for Kensington Town Hall and Pembroke Road Offices. In 2019 four Recycling and Energy saving workshops were delivered to Council employees to remind them of the correct recycling practices at work and to how to reduce their energy consumption in the offices. Around 35 members of staff attended these workshops. Communications were sent out regularly via the Council's Green Champions network and information about recycling was published via yammer internally. In 2019, the Council started working on developing an environmental induction package for staff which covers the following topics: recycling and single-use plastics, climate change, air quality and sustainable transport.

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
		The aim of this package is to offer practical tips and information for staff on how to reduce their environmental footprint at work and how to recycle correctly.
40 Increase the municipal recycling rate by 2%	Deliver communication campaigns for residents, improve recycling infrastructure on estates, waste crew training and work with Commercial Waste Team to increase business recycling capture	Delivered reusable bags, leaflets and/or new and bespoke bins to over 50 estates. Updated leaflet that's inserted in packs of clear recycling bags - delivered quarterly for all properties receiving a kerbside collection. Communications sent to all residents via a Council tax. Introduced a new food waste round to the North of the borough. Carried out training sessions for container and kerbside collection crews, on 'how to spot contamination'. Ran waste reduction and recycling events such as the 'Plastic Pledge sea' and Reusable Nappy demos. Figures not finalised yet, as WRWA provide some data 1- 2 months after the final quarter. Estimate recycling rate, 22.55% (+0.82%). Next year this target will be switched to a 1% increase in the domestic recycling rate. A 2% increase in the municipal recycling rate, every year, is not currently realistic or appropriate.
41 Review and model different waste collection systems	Assess whether introducing a borough-wide food waste collection will be environmentally beneficial to identify solutions to improve waste collection rounds	This cannot be done in the last year of the current contract. However, once the new contract commences in April 2021, this will be one area that will be explored.
42 Deliver carbon reduction initiatives/campaign within the Council's offices to emissions and change	Implement and deliver the Greening the Office initiative and the Green Champions Scheme in Pembroke Road and at the Kensington Town Hall	As part of the Greening the Office project the following initiatives have been delivered internally to change behaviour and to reduce emissions in 2019: • A '10 actions to reduce your carbon footprint' guidance document was produced and shared internally in 2019 for staff to promote the actions that can be adopted at work to reduce carbon emissions and change behaviour. • Three meetings with the Council's Green Champions Network were organised in 2019 to encourage them to take actions within their own teams / department for carbon reduction. • The Council started to develop an Environmental Induction package in 2019 for staff. The aim of this initiative is to raise awareness internally about all the relevant environmental policies (carbon reduction targets, Air Quality & Climate Change Action Plan, Single-use Plastic Policy, Green Fleet

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
		Strategy & Action Plan) and to encourage staff members to take actions to reduce their carbon footprint at work. • Sustainability & climate change related information was promoted at two Council Induction Events which were organised for new employees. These took place between September 2019 and December 2019 and they were attended by around 150 new Council employees. • A cycling to work campaign was organised at the beginning of March 2020 for staff members to promote the Council's travel hierarchy and to encourage colleagues to cycle more as part of their work.
43 Develop a Single Use Plastic policy and action plan	Develop and deliver an action plan to minimise and phase out where feasible, the use of non-essential single-use plastics across the Council's operations and buildings, its contractors/suppliers, in schools and across the borough	A single-use Plastic Policy Statement was adopted by the Council in May 2019. The policy's aim is to ensure that Council operations are free on non-essential single-use plastics by the end of 2020 and sets out a commitment to work accords the council internally, with the council's contractors and partners, and with local schools, businesses, and residents. Since then the following initiatives and actions have been delivered internally across the Council buildings to support with becoming single-use plastic free by the end of 2020: • The cafeteria from the Council's main office at Kensington Town Hall replaced all their single-use plastic cutlery and containers with plastic free alternatives in 2019. Staff members were allowed to start using their own keep cups and lunch boxes when purchasing food from the cafeteria. • In 2019 the Council's Events Team replaced their single-use plastic cups with plastic free alternatives (paper cups or plant-based alternatives) for all the events organised in the Council's buildings. • The Council's Facilities Management Team arranged for all the plastic water cups which were available in the staff kitchens to be removed in 2019. • In July 2019 a single-use plastic campaign was organised internally by the Council's Legal Department to encourage colleagues to reduce their consumption of single-use plastics. • Kensington Leisure Centre and Dalgarno Community Centre have signed up to become part of the national Refill Scheme. • In June 2019 a single-use plastics workshop was developed and delivered by the Council at St Joseph's Primary School. The aim of this workshop was to teach pupils about the impacts of single-use plastics and what they can do to reduce their plastic consumption.

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
		• In 2019, the Western Riverside Waste Authority delivered 14 Plastic Planet assemblies for free to schools in RBKC. The Western Riverside Waste Authority are funded by the Council to offer free assemblies and workshops to schools on recycling, waste and single-use plastics. In terms of borough-wide initiatives, the following have been carried out: • In 2019 the Council successfully applied for free drinking water fountains through the GLA / Thames water scheme. Ultimately the fountains were not installed due to planning issues with the scheme's agreed fountain model. Conversations are ongoing for suitable models / locations for the second phase of this scheme. • Separately we have agreed on a suitable model for the Council's own fountain installation initiative and have a shortlist of approximately 25 suitable sites identified. Various funding options are being investigated. • There were held several 'Plastic Pledge sea' events across the borough in 2019 aimed at promoting and encouraging people to reduce their use of single-use plastic. How to recycle plastics is a core feature of our communication materials.
44 Increase the size of the existing Counters Creek Victorian sewer system	In partnership with Thames Water, facilitate work to increase the size of the existing Counters Creek Victorian sewer system to cope with flash flooding from intense rainstorms.	Thames Water confirmed that a strategic sewer was no longer needed and agreed to the following: • Sustainable drainage systems to reduce surface water run-off entering the sewers (most of the schemes are in the London Borough of Hammersmith and Fulham except for Arundel Gardens); • anti-flooding (FLIP) devices to stop the sewers surcharging into lower properties; and, • a local sewer improvement (pumping station in Queensdale Road to reduce local flood risk). The Council publicly scrutinised Thames Water's decision regarding the strategic sewer. It successfully lobbied Ofwat to ensure further monitoring and research of the Counters Creek continues for the next Business Plan. Ofwat added two new performance commitments regarding the Counters Creek: • to produce a report about the risk of the catchment by the end of July 2023. The report should outline a long-term strategy for alleviating flooding in the area; • to report annually on how they are managing the network to ensure long-term resilience and reduce flood risk for customers, and how they are progressively developing their understanding of flood risk in the catchment.

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
		Further updates are provided on our webpage: https://www.rbkc.gov.uk/planning-and-building-control/planning-policy/flooding/counters-creek-project.
45 Support the delivery of Sustainable Drainage Systems (SuDs) both in new developments and through retrofitting	Support the delivery of Sustainable Drainage Systems (SuDs) both in new developments and through retrofitting, to absorb and divert as much rainwater as possible away from the sewers during periods of heavy rainfall.	The Local Plan Partial Review (LPPR) was adopted in September 2019. It is now called the Local Plan 2019 and can be found here: https://www.rbkc.gov.uk/planning-and-building-control/planning-policy/local-plan/local-plan-2019. Policy CE2(g) refers to the provision of SuDS and has strengthened the requirement for SuDS. Planning and Place successfully bid the Thames Regional Flood and Coastal Committee for £500k of levy funds to implement SuDS in the Council's social housing. Work has been undertaken to identify suitable sites in North Kensington and this will be pursued in 2020. The adventure playground at Holland Park was extensively redesigned and the project finished in 2019. An important aspect was to address the historic drainage issues which had blighted the site previously. The existing topography of the site splits the playground into two sub-catchments, referred to as the eastern and western sub-catchment. The majority of play top surfaces are permeable and store runoff within their own sub-base. Any remaining flows are directed into a series of shallow swales and storage basins. Within the eastern sub-catchment, surface runoff is collected from impermeable footpaths via granite sett channels and soft channels (swales) and directed into two shallow storage basins. Permeable playtop surfaces store runoff within their sub-bases, which overflow into the swales and storage basins. The majority of flows will be lost through infiltration into the ground. Within the western part of the site, roof water from the ecology centre as well as runoff from impermeable footpaths is collected via granite sett channels and directed into the sub-base underneath the sculpted concrete play surface to promote infiltration into the ground. Any remaining flows will be stored within a planted sub-surface flow gravel wetland (maximum water level to be below the gravel surface) and will be slowly released into the existing ditch. Benefits include: ✓ Encourages children to interact with natural environment and inspires curiosity in the water cycle and 'rainplay'. ✓ Provision of new wetland habitat. ✓ Inclusion of attractive planting and biodiversity beneficial to insects and birds ✓ Reducing the flows and amount of surface water runoff running into drainage system.

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
		Complaints/Negatives: ✓ Infiltration of water was slow in areas and we received a complaint regarding stagnant water. Following this, elements of the design were modified to prevent prolonged storage of water in certain areas of the playground and infiltration was increased by decompacting top layer of soil.
X61 Retrofit SuDs in existing properties	Install SuDs such as rainwater retention features in existing properties.	The monitoring of Arundel Gardens was finalised in 2019. Thames Water and Imperial College London are producing a study on the findings to influence future schemes. Policy CE2(j) of the Council's Local Plan, which was adopted in September 2019 encourages the retrofitting of SuDS. https://www.rbkc.gov.uk/planning-and-building-control/planning-policy/local-plan/local-plan-2019.
46 Mitigate against increases in area of impermeable land by stopping the paving of front gardens	Use the planning control process to reduce the loss of front gardens by resisting paving	Policy CE2i of the Council's Local Plan resists the increase in impermeable areas not just in front gardens but all landscaped areas. Policy CE2g(i) also encourages the increase of permeable areas when providing SuDS. https://www.rbkc.gov.uk/planning-and-building-control/planning-policy/local-plan/local-plan-2019.
47 Promote the use of the Council's SuDs tool for small developments	Continue to promote the use of the Council's SuDs tool for small developments.	The SuDS tool was decommissioned in March 2019. Very detailed information on how to meet our policy on SuDS for minor and major applications was uploaded on our SuDS webpage: https://www.rbkc.gov.uk/planning-and-building-control/planning-policy/flooding/sustainable-drainage-systems The SuDS uptake has continued as SuDS are required by policy CE2g and CL7i of the Local Plan.
48 Promote green infrastructure (walls, roofs) and other eco-initiatives in schools	Further develop school participation in green infrastructure and eco-initiatives that enhance the curriculum, involve parents and lead to reduction of car use in collaboration with the Healthy School Partnership.	The service delivered 139 Environmental Education sessions and 317 Forest School sessions in 2019, engaging 7,678 pupils in outdoor education. The Ecology Team also delivered a number environmental education training for trainee teachers, to encourage them to be more confident and proactive with engaging children in environmental education. We also held a wildlife photography competition this year which included a nest box and wildlife webcam for a school, which demonstrates improved green infrastructure in a school grounds. The Deputy Mayor is championing the creation of a pollinator network across the Borough as part of a Bee superhighway. The project aims to improve the Built environment through greening and creating areas favourable to pollinators from balconies to rooftops and within gardens and school grounds. The project

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
		was launched with a lunchtime seminar with presentations to senior council officers from experts from the Green Roof consultancy, Buglife, London Beekeepers Association and RBKCs inhouse ecologist.
49 Support the development of food growing gardens in schools	Work with schools to encourage and support them in the delivery of food growing gardens.	There is ongoing support for six school food growing schemes delivered in association with staff from Hammersmith Community Gardens Association. Additional workshops were delivered at Cottingham Family Centre – supporting vulnerable children unable to attend school. St Cuthbert with St Matthias Primary school have continued to attend sessions in the neighbouring Warwick Triangle community garden offered by council community gardeners.
50 Support the development of community food waste composting initiatives	Encourage and support the development of small scale community food waste composting initiatives	Food waste composting schemes at community kitchen gardens are ongoing and managed by residents with advice and support available from council staff. Most sites in use are within social housing schemes.
51 Review planning applications to ensure that biodiversity is improved, not damaged by new build and refurbishment	Check/review planning applications to ensure that development impacts on the borough's ecology are minimised and to maximise biodiversity gains from development by creating new habitat through green roofs.	It is estimated that around 35% of applications had ecological input in the last year, major apps were focussed on. The borough's new biodiversity Action plan was delayed and is now due to be released in 2020 this will promote and support a new greening SPD being developed as well as provide guidance for the review of the Local Plan policies around Biodiversity net gain and greening the built environment.
52 Require developers to contribute to local air quality improvements	Increase air quality action fund contributions to directly provide a resource for air quality specialists and to achieve actual air quality improvements.	Amount agreed between April and March 19/20 through S106 funding is £1750. There was also £52,200 agreed for Carbon Offsetting.
X74 Push for the borough to be included in the Ultra-Low Emission Zone (ULEZ)	As part of the TfL/GLA Engagement Group, enter discussions with the new Mayor of London on the potential to increase the air quality benefits in the borough of the ULEZ proposal, and/or tightening the LEZ.	ULEZ expansion on track to begin in October 2020 for HGVs and October 2021 for light vehicles.

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
X75 Support TfL in ensuring the entire borough is part of the 'Cycle Hire' scheme	Support the expansion of the Cycle Hire scheme north of the Westway.	No expansion took place in 2019, however TfL submitted a planning application to expand and relocate the docking station on Exhibition Road. This work will take place alongside other proposed changes in the road in 2020-21.
X76 Work with TfL to reduce emissions from buses in the borough	Lobby and work with TfL to ensure that all bus routes through the borough are ULEZ-compliant and explore options for hybrid buses to run in pure electric mode through the most polluted areas.	We now have three routes in the borough which operate with fully electric vehicles (routes C1, 94 and 70). The Earl's Court Road/Kensington High Street signal staging changes have been held up by the redevelopment of the site on the corner – we are unable to access the lighting columns to relocate signal heads because of the proximity of the temp hoardings and scaffolding.
X77 Work with TfL to deliver Crossrail stations in the borough	Work with TfL on delivery of Crossrail 2 station in the King's Road area.	There has been no further progress. TfL's consultation on Crossrail 2 is on hold pending outcome of the Independent Affordability Review.
X78 Lobby TfL for increased public transport links in the borough	Continue to work with Crossrail sponsors on feasibility of a Kensal Portobello Crossrail station at Canal Way.	TfL, as operator of the Elizabeth Line, has asked RBKC and Network Rail (NR) to carry out a second round of railway modelling with some additional operational requirement. The initial round of modelling by NR was positive.
X79 Lobby TfL and the Mayor of London to reduce emissions from taxis	Lobby TfL/Mayor of London to make the decommissioning scheme for 10 year old taxis mandatory.	We continue to work with TfL and the Taxi trade to reduce the Taxi congestion problems around Harrods. We have banned the right turn from Hans Rd into Basil Street which has reduced the queuing of taxis in Hans Rd. Taxis are starting to queue on Walton Place so we have introduced a residents' bays in the area where they had formed an informal taxi rank and may introduce a straight ahead ban from Walton Place into Basil St if this does not resolve the problem.
53 Lobby the Government to continue providing incentives for solar installations	Feed in Tariff replacement to encourage solar uptake and to support community owned energy projects	The Climate Change Team has been working with Repowering London to develop community owned energy projects and lobby government on providing solar incentives and replacements for the Feed in Tarif. The Council was supportive of encouraging and lobbying the Government for solar incentives through different forums such as the LECF, Community Energy England etc.
54 Lobby TfL and the Mayor of London to raise taxi drivers'	Lobby TfL/Mayor of London to establish eco-driving training as a	We continue to engage regularly with the Taxi Driver representative bodies as well as the Taxi team at TfL to raise issues over idling and illegal ranking in residential areas.

Measure	Action	2019 Progress • **Emissions/Concentration data** • **Benefits** • **Negative impacts / Complaints**
awareness of techniques to reduce emissions	requirement for all taxi and private cab drivers.	
55 Lobby the government for higher environmental building standards	Continue lobbying the Government so that Local Authorities are allowed to set higher environmental standards for new buildings and major refurbishments that are higher than the current building regulations (Housing Standard Review).	The Local Plan Partial Review (LPPR) was adopted in September 2019. It is now called the Local Plan 2019 and can be found here: https://www.rbkc.gov.uk/planning-and-building-control/planning-policy/local-plan/local-plan-2019 Policies within chapter 24 refer to environmental standards. The Council has responded to several GLA enquiries, surveys and consultations related to zero carbon homes and extending the standards to new commercial developments as part of the new London Plan. In February 2020, the Council responded to the Future Homes Standard consultation: changes to Part L and Part F of the Building Regulations for new dwellings. The Council recognised and supported the fact that the London Plan successfully required higher standards than those being consulted upon. We explained that lowering those standards would not help meeting the Government's 2050 net zero carbon targets nor would it help the Council's climate change emergency targets. We requested that local planning authorities were not restricted from setting higher energy efficiency standards for dwellings. We argue that the principal performance metric should be the actual energy used in the home (regulated and unregulated) rather than carbon emissions or primary energy and we lobbied for the Fabric Energy Efficiency Standard (FEES) not to be removed.

3. Planning Update and Other New Sources of Emissions

Table N. Planning Requirements met by Planning Applications in RBKC in 2019

It was not possible to include data for the whole of 2019 as records are incomplete during prior to disaggregation which happened in July 2019.

Condition	Number
Number of planning applications where an air quality impact assessment was reviewed for air quality impacts	19
Number of planning applications required to monitor for construction dust	18
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	20
Number of developments required to install Ultra-Low NO_x boilers	16
Number of developments where an AQ Neutral building and/or transport assessments undertaken	15
Number of developments where the AQ Neutral building and/or transport assessments not meeting the benchmark and so required to include additional mitigation	1
Number of planning applications with S106 agreements including other requirements to improve air quality	
Number of planning applications with CIL payments that include a contribution to improve air quality	
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 at www.nrmm.london and that all NRMM used on-site is compliant with Stage IIIB of the Directive and/or exemptions to the policy.	1 NRMM Conditions
NRMM: Greater London (excluding Central Activity Zone and Canary Wharf) Number of conditions related to NRMM included. Number of developments registered and compliant. Please include confirmation that you have checked that the development has been registered at www.nrmm.london and that all NRMM used on-site is compliant with Stage IIIA of the Directive and/or exemptions to the policy.	26 NRMM Conditions

3.1 New or significantly changed industrial or other sources

No new sources identified.

Appendix A Details of Monitoring Site QA/QC

A.1 Automatic Monitoring Sites

Data Management and Local Site Operator (LSO) duties for RBKC's Automatic Monitoring Station Network for the period of 2019 was undertaken by Ricardo Energy and Environment, who have been in employment by RBKC since November 2017. All real-time data from the monitoring stations was independently collected and validated on a daily basis. A combination of automatic and manual checks was utilised to assess data, identify and diagnose potential equipment faults and adjust data to take account of calibration tests. Automatic overnight calibrations were supplemented with regular manual calibrations of analysers. The procedures used conform to EU standards that are a requirement of the AURN.

All data is also formally ratified and available online by accessing the Air Quality England Website and selecting Kensington & Chelsea within the menu bar. During this process the validation decisions can be ratified with the benefit of hindsight and using greater information, such as service records, calibration records and the results of station audits. Station audits are carried out by Ricardo Energy and Environment's in house audit team.

In addition, due to the PM_{10} / $PM_{2.5}$ monitoring undertaken at the North Kensington monitoring site being affiliated to the AURN/LAQN monitoring network, independent calibration and audits are completed for the FIDAS monitors by Defra appointed contractors.

PM_{10} Monitoring Adjustment

PM_{10} monitoring is completed within the borough at three monitoring sites; KC1 with a FIDAS, KC2 with an FDMS, and KC5 with a 1020 heated BAM (installed May 2019). As per LLAQM guidance[1], through independent data validation completed by Ricardo Energy and Environment, the BAM data is corrected by dividing the raw data by 1.035. Monitoring data from the FDMS and FIDAS monitors do not require correction during their data validation stage.

All fully validated monitoring PM10 data is available through the Air Quality England Website.

A.2 Diffusion Tube Quality Assurance / Quality Control

NO_2 Diffusion Tubes

The NO_2 Diffusion Tubes for the year 2019 were supplied and analysed by Gradko International, with the 50% Triethanolamine (TEA) in acetone preparation method utilised. Gradko is a UKAS accredited laboratory that follows the procedures set out by Defra within Diffusion Tubes for Ambient NO_2 Monitoring: Practical Guidance for Laboratories and Users, and strict internal QA/QC procedures to ensure that concentrations reported are as accurate as possible. In addition, Gradko participate in two independent QA/QC schemes to ensure their performance is constantly independently reviewed.

1) AIR-PT

AIR is an independent proficiency-testing (PT) scheme that is operated by LGC standards and supported by the Health and Safety Laboratory (HSL). AIR-PT began in April 2014 and combined two long running PT schemes: LGC Standards STACKS PT scheme, and the HSL WASP PT scheme. AIR is a recognised performance-testing programme for labs undertaking NO_2 diffusion tube analysis as part

of a wider UK NO_2 monitoring network. The AIR-PT results for Gradko during 2019 are presented in Table A.1 below, it can be seen that a 75% - 100% result was achieved for all monitoring samples provided.

Further information on proficiency testing can be found at Defra's Local Air Quality Management webpages under QA/QC framework for NO_2 diffusion tube monitoring.

Table A.1 Gradko Performance within AIR-PT for NO_2 Diffusion Tubes – 2019

AIR PT AR030	AIR PT AR031	AIR PT AR032	AIR PT AR033
January – February 2019	April – May 2019	July – August 2019	September – November 2019
75%	100%	100%	100%

2) Network Field Inter-Comparison Exercise

Gradko International also takes part in the NO_2 Network Field Inter-Comparison Exercise, operated by the National Physical Laboratory (NPL), which complements the AIR-PT scheme in assessing sampling and analytical performance of diffusion tubes under normal operating conditions. This involves the regular exposure of a triplicate set of tubes at an Automatic Urban Network site (AURN) site where continuous chemiluminescent analysers measure NO_2 concentrations.

The inter-comparison exercise is completed at the Marylebone AURN monitoring station. Of particular interest is the bias of the diffusion tube measurement relative to the automatic analyser that gives an indication of accuracy. Performance criterion have been established for participating laboratories in line with the Air Quality Directive 2008/50/EC requirement for indicative monitoring techniques, as the 95% confidence interval of the annual mean bias which should not exceed ±25%.

In conjunction with this, a measure of precision is determined by comparing the triplicate co-located tube measurements, commonly referred to as the coefficient of variation (CoV). This value is useful for assessing the uncertainty of results due to sampling and analytical techniques. The NPL performance criterion for precision is that the mean coefficient of variation for the full year should not exceed 10%, should this be achieved the precision is given a score of 'good'.

Gradko operates well within the required level of performance in terms of accuracy and precision, as shown by the results presented in Table A.2 below.

Table A.2 Gradko NO_2 Network Field Inter-Comparison Results for 2019

Annual Mean Bias		Precision	
Performance Target	Gradko Annual Mean Bias	Performance Target	Gradko Precision
±25%	+ 6.5%	10%	Good

<u>Benzene Diffusion Tubes</u>

All Benzene tubes were analysed by a Gradko International who are a UKAS accredited laboratory using desorption scanning gas chromatography/mass spectrometry (GC/MS). This method of analysis

gives unequivocal identification of BTEX peaks. The analysis is carried out in accordance with the Gradko International Laboratory Quality Procedure GLM 4.

The accuracy of the Laboratory measurements were monitored by participation in the Laboratory Measurement Proficiency Scheme.

The measurement method used in the Benzene survey were consistent with the sampling, analysis and QA/QC requirements of EN 14662-4: 2005 Ambient Air Quality – Standard Method for Measurement of Benzene Concentrations – Part 4: Diffusive Sampling followed by Thermal Desorption and Gas.

Factor from Local Co-location Studies

RBKC are part of the London Wide Environmental Programme (LWEP) for which a number of co-location studies are completed across seven London Boroughs. During 2019 triplicate diffusion tube monitoring was completed at one Automatic Monitoring sites within the borough; North Kensington – KC47. The bias adjustment factor calculated for the North Kensington Monitoring Station is presented in Figure A.1.

The co-location study result was included within the LWEP bias adjustment calculations as presented in Table A.3 due to passing both data capture and diffusion tube precision checks.

Figure A.1 North Kensington Bias Adjustment Factor Calculation

Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tubes Measurements										Automatic Method		Data Quality Check	
Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 µgm^{-3}	Tube 2 µgm^{-3}	Tube 3 µgm^{-3}	Triplicate Mean	Standard Deviation	Coefficient of Variation (CV)	95% CI of mean	Period Mean	Data Capture (% DC)	Tubes Precision Check	Automatic Monitor Data Capture
1	05/12/2018	09/01/2019	34.0	30.0	35.2	33	2.7	8	6.8	35.5	100	Good	Good
2	09/01/2019	06/02/2019	37.4	31.5	41.0	37	4.8	13	11.9	39.7	100	Good	Good
3	06/02/2019	06/03/2019	33.8	34.1	38.2	35	2.4	7	6.1	41.3	100	Good	Good
4	06/03/2019	03/04/2019	23.0	23.5	25.3	24	1.2	5	3.1	25.1	100	Good	Good
5	03/04/2019	01/05/2019	27.7	28.1	26.3	27	1.0	4	2.5	31	100	Good	Good
6	01/05/2019	05/06/2019	17.5	22.1	19.1	20	2.3	12	5.8	21	100	Good	Good
7	05/06/2019	03/07/2019	20.1	20.4	18.2	20	1.2	6	2.9	17	100	Good	Good
8	03/07/2019	07/08/2019	19.1	18.9	18.5	19	0.3	2	0.7	16	100	Good	Good
9	06/08/2019	04/09/2019	23.9	23.5	22.8	23	0.6	2	1.4	20	100	Good	Good
10	04/09/2019	02/10/2019	16.0	25.2	23.3	22	4.9	23	12.2	22	100	Poor Precision	Good
11	02/10/2019	06/11/2019	30.1	25.6	26.3	27	2.4	9	6.1	28.2	100	Good	Good
12	06/11/2019	04/12/2019	45.9	38.4	34.0	39	6.0	15	14.9	36.5	100	Good	Good
13	04/12/2019	08/01/2020	37.5	29.9	31.2	33	4.0	12	10.1	31.5	100	Good	Good
										Overall survey -->		Good precision	Good Overall DC

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

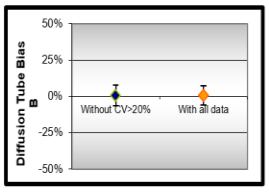
(Check average CV & DC from Accuracy calculations)

Site Name/ ID:	KC1 Sion Manning

Precision: 12 out of 13 periods have a CV smaller than 20%

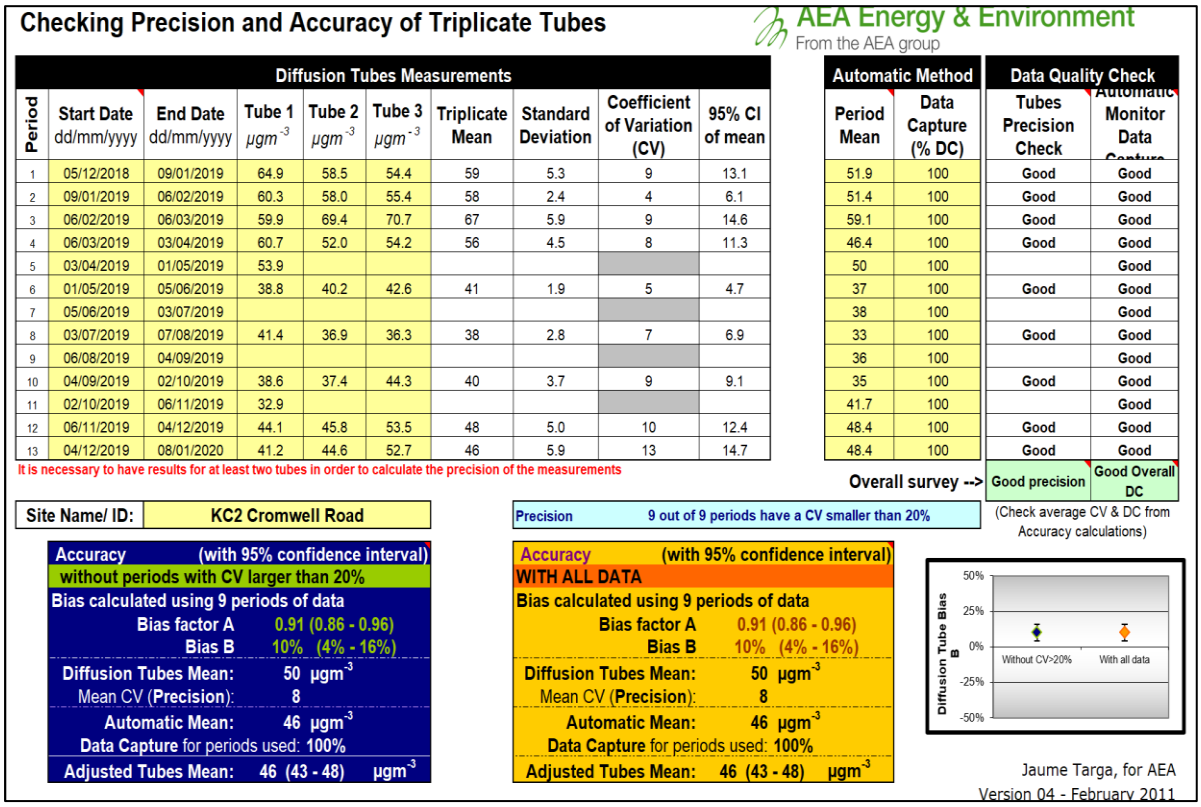
Accuracy (with 95% confidence interval) without periods with CV larger than 20%	
Bias calculated using 12 periods of data	
Bias factor A	1.01 (0.95 - 1.09)
Bias B	-1% (-9% - 6%)
Diffusion Tubes Mean:	28 µgm^{-3}
Mean CV (Precision):	8
Automatic Mean:	29 µgm^{-3}
Data Capture for periods used:	100%
Adjusted Tubes Mean:	28 (27 - 31) µgm^{-3}

Accuracy (with 95% confidence interval) WITH ALL DATA	
Bias calculated using 13 periods of data	
Bias factor A	1.01 (0.95 - 1.09)
Bias B	-1% (-8% - 5%)
Diffusion Tubes Mean:	28 µgm^{-3}
Mean CV (Precision):	9
Automatic Mean:	28 µgm^{-3}
Data Capture for periods used:	100%
Adjusted Tubes Mean:	28 (26 - 30) µgm^{-3}



Jaume Targa, for AEA
Version 04 - February 2011

Figure A.2 Cromwell Road Bias Adjustment Factor Calculation



Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tubes Measurements

Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 µgm^{-3}	Tube 2 µgm^{-3}	Tube 3 µgm^{-3}	Triplicate Mean	Standard Deviation	Coefficient of Variation (CV)	95% CI of mean
1	05/12/2018	09/01/2019	64.9	58.5	54.4	59	5.3	9	13.1
2	09/01/2019	06/02/2019	60.3	58.0	55.4	58	2.4	4	6.1
3	06/02/2019	06/03/2019	59.9	69.4	70.7	67	5.9	9	14.6
4	06/03/2019	03/04/2019	60.7	52.0	54.2	56	4.5	8	11.3
5	03/04/2019	01/05/2019	53.9						
6	01/05/2019	05/06/2019	38.8	40.2	42.6	41	1.9	5	4.7
7	05/06/2019	03/07/2019							
8	03/07/2019	07/08/2019	41.4	36.9	36.3	38	2.8	7	6.9
9	06/08/2019	04/09/2019							
10	04/09/2019	02/10/2019	38.6	37.4	44.3	40	3.7	9	9.1
11	02/10/2019	06/11/2019	32.9						
12	06/11/2019	04/12/2019	44.1	45.8	53.5	48	5.0	10	12.4
13	04/12/2019	08/01/2020	41.2	44.6	52.7	46	5.9	13	14.7

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

Automatic Method		Data Quality Check	
Period Mean	Data Capture (% DC)	Tubes Precision Check	Automatic Monitor Data Capture
51.9	100	Good	Good
51.4	100	Good	Good
59.1	100	Good	Good
46.4	100	Good	Good
50	100		Good
37	100	Good	Good
38	100		Good
33	100	Good	Good
36	100		Good
35	100	Good	Good
41.7	100		Good
48.4	100	Good	Good
48.4	100	Good	Good
Overall survey -->		Good precision	Good Overall DC

(Check average CV & DC from Accuracy calculations)

Site Name/ ID: KC2 Cromwell Road

Precision: 9 out of 9 periods have a CV smaller than 20%

Accuracy (with 95% confidence interval)
without periods with CV larger than 20%
Bias calculated using 9 periods of data
Bias factor A 0.91 (0.86 - 0.96)
Bias B 10% (4% - 16%)
Diffusion Tubes Mean: 50 µgm^{-3}
Mean CV (Precision): 8
Automatic Mean: 46 µgm^{-3}
Data Capture for periods used: 100%
Adjusted Tubes Mean: 46 (43 - 48) µgm^{-3}

Accuracy (with 95% confidence interval)
WITH ALL DATA
Bias calculated using 9 periods of data
Bias factor A 0.91 (0.86 - 0.96)
Bias B 10% (4% - 16%)
Diffusion Tubes Mean: 50 µgm^{-3}
Mean CV (Precision): 8
Automatic Mean: 46 µgm^{-3}
Data Capture for periods used: 100%
Adjusted Tubes Mean: 46 (43 - 48) µgm^{-3}

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Version 04 - February 2011

Table A.3 Bias Adjustment Factor and % Bias of all LWEP Monitored Co-Location Studies 2018

Local Authority	Length of Study (Months)	Diffusion Tube (µg/m^3)	Continuous Analyser (µg/m^3)	Bias (B)	% Bias based on continuous monitor (B)
City of London	12	74	71	4.1%	**0.96**
City of London	12	37	33	14.3%	**0.88**
Marylebone Road Intercomparison	12	83	65	26.3%	**0.79**
LB Richmond upon Thames	12	46	35	30.4%	**0.77**
LB Richmond upon Thames	12	29	27	7.1%	**0.93**
LB Richmond upon Thames	11	21	21	1.0%	**0.99**
Falkirk Council	9	18	15	18.1%	**0.85**

Local Authority	Length of Study (Months)	Diffusion Tube (µg/m³)	Continuous Analyser (µg/m³)	Bias (B)	% Bias based on continuous monitor (B)
LB Newham	12	35	30	16.2%	**0.86**
Overall Bias Adjustment Factor					**0.87**

Discussion of Choice of Factor to Use

In July 2019 a new Pollution Regulatory Team was formed within the Royal Borough of Kensington & Chelsea (RBKC). This year the approach previously taken to derive a Bias Adjustment Factor (BAF) has been reviewed to ensure it remains robust. In particular, there was concern that the use of a BAF from an Urban Background location in the borough may not be representative of locations closer to busy roads.

Historically a BAF derived from the North Kensington Monitoring Station (NKMS) co-location site has been used to correct diffusion tube data in the borough. Examples of the justifications given in previous ASRs include:

"For 2016 a Local Bias Adjustment Factor based on the North Kensington monitoring station was considered to be the most suitable as it is based on data from the borough's AURN affiliated site which has triplicate diffusion tubes co-located with it. Also, comparison of the local factor and the LWEP with other co-located sites within the borough showed it gave the best fit to the continuous monitoring data."

For 2018 data: *"In previous years the Bias Adjustment Factor used to adjust the NO_2 diffusion tube raw data has been taken from the co-location study completed at boroughs AURN/LAQN affiliated site, North Kensington. This has previously been chosen as a Local Factor, rather than using the LWEP or National Bias Adjustment Factor. When compared to the Bias Adjustment Factor calculated at the Cromwell Road monitoring site the diffusion tube monitoring at North Kensington showed a more accurate comparison to the automatic monitoring data. In addition, the factor at North Kensington was calculated to be higher than at Cromwell Road, therefore a more conservative Bias Adjustment Factor has been used to adjust the diffusion tube monitoring data."*

Within Box 4.10 of the LLAQM Technical Guidance (LLAQM TG016), which sets out guidelines on how to choose a NO_2 Bias Adjustment Factor, it clearly identifies that a combined Bias Adjustment Factors may be more representative *"Where the survey consists of tubes exposed over a range of settings, which differ from the co-location site".* Examples of what would comprise a different setting are identified as *"the co-location site is in a very exposed setting and the tubes being assessed are on a building façade in a canyon-like street".*

The NKMS is an Urban Background location in the North of the Borough, set within a school on a quiet residential street about 75 m from the busy Ladbroke Road. Historically, between 2013 and 2017, the NKMS has reported Annual Mean Nitrogen Dioxide concentrations of between 32 µg/m³ and 37µg/m³. During the last two years it has reported concentrations of below 30 µg/m³. The NKMS is therefore representative of monitoring locations that are situated away from busier roads in the Borough.

Tables A and B categorise 2016 and 2019 data by location and concentration. The concentration bands used split the results that are equal to or below and above a concentration of 45 µg/m³. Having considered several different thresholds, 45 µg/m³ was chosen as locations with an Annual Mean

concentration above 45 µg/m^3 tend to be on or close to busier roads. This threshold ensures that the correction of results around the NAQO is conservative. As shown in Tables A and B, monitoring locations with results:

- Equal to or below 45 µg/m^3, are likely to have similar conditions to the NKMS; and
- Above 45 45 µg/m^3, are typically roadside locations and so differ from the NKMS.

In both years a clear distinction between the results obtained for Urban Background locations and busier Roadside locations is evident. The key observations include:

- As expected in both years monitoring locations on and near to busier roads exceed the objective, while monitoring locations in residential areas tend to meet the objective;
- In 2016 the residential locations KC34, KC42, KC44 and KC55 are identified as residential locations that exceed the NAQO. This is expected due to the influence of local main roads in each case; and
- In 2019 there is a marked increase in the number of sites which now more comfortably meet and meet the NAQO.

Given the obvious differences in setting between residential and busy roadside locations in the borough, there is a good justification for either deriving an average BAF for the borough, which takes into consideration both urban background and roadside locations or applying two separate BAFs. Applying an average BAF across the borough is likely to result in an underestimation at locations away from busier roads and around the objective and so the use of and average BAF should be rejected.

The NKMS BAF represents a good local BAF for Urban Background locations and locations away from busier roads and so should be applied to sites set within residential locations and/or which are less impacted by road-based emissions i.e. sites in the shaded portion of Tables A and B. An alternative BAF should be considered for busier roadside locations and locations that are more impacted by road-based emissions.

Having considered data within the National BAF spreadsheet (See Table C):

- There is significantly more data for studies of monitoring stations with concentrations equal to or below 45 µg/m^3. As a result, the National BAF is most representative of the =/<45 µg/m^3 concentration band;
- For most years the BAF for monitoring stations which reported results =/<45 µg/m^3 is equal to or greater than the BAF for monitoring stations which reported results >45 µg/m^3;
- For every year the NKMS BAF is greater than the BAF derived from the National BAF spreadsheet for monitoring stations reporting concentrations =/<45 µg/m^3; and
- In 2018, where the >45ug/m3 BAF was greater than the =/<45 µg/m^3 BAF, the NKMS BAF was equal to the >45 µg/m^3.

This suggests that the National BAF should typically represent a conservative Bias Adjustment Factor for busier roadside locations. Box 4.11 of LLAQM TG016 states that as a result of pollutant chemistry *"Data suggests that tubes close to a road are more likely to underestimate concentrations, once they have been adjusted for laboratory bias, and conversely tubes further away from roads are more likely to overestimate concentrations."*

While, in our opinion, the use of the NKMS BAF is likely to result in an overestimation in corrected data, to maintain conservatism and ensure consistency with the approach taken in previous years, the NKMS BAF will continue to be applied to busier roadside locations with concentrations >45 µg/m^3 (i.e.

unshaded parts of Tables A and B) to provide an upper range. However, to provide a lower range result, for data corrected with the NKMS BAF which exceeds 45 µg/m^3, we will also report the result corrected using the National BAF. Apart from providing a more realistic result for roadside locations, the National BAF corrected result is likely to be more accurate for model verification.

The suitability of the BAF used should continue to be kept under review and updated as necessary. In summary the:

- NKMS BAF should be applied to diffusion tube data;
- National BAF should also be applied to NKMS corrected data which exceeds 45 µg/m^3; and
- Data corrected by the National BAF should be considered when reporting results and during model verification.

Table A: Categorisation of 2016 Monitoring Sites by Location and Monitoring Result

Bands (Ug/M3)		Development Type			
		Urban Background Remote	Residential Setting	Residential Setting near Busy Road or Rail	On or Very Close to Busy Road or Rail
=/<35		32	1, 47		
>35-45	>35-40		39, 41, 43, 51		
	>40-45		34	65	
>45			42, 44, 55	40, 68	2, 3, 4, 5, 31, 33, 35, 38, 48, 45, 48, 49, 50, 52, 53, 54, 56, 57, 58, 59, 60, 61, 64, 66, 67, 69

Table B: Categorisation of 2019 Monitoring Sites by Location and Monitoring Result

Bands (ug/m3)		Development type			
		Urban Background Remote	Residential Setting	Residential Setting near Busy Road or Rail	On or Very Close to Main or Busy Road
=/<35		32	1, 39, 40, 41, 42, 43, 44, 47, 51, 77, 78, 79	65, 66	
>35-45	>35-40		34, 55, 80	67, 68, 74	52, 53, 69
	>40-45			71, 73	31, 45, 57, 61, 64
>45				70, 72, 75, 76	2, 3, 4, 5, 33, 35, 38, 48, 49, 50, 54, 56, 58, 59, 60

Table C: Bias adjustment factors calculated for bands from the National BAF spreadsheet

Year	Band	Average (London)	No studies (London)	Average (National)	No Studies (National)	National BAF	NKMS
2015	=/<45	1.01	3	0.96	13	0.96	1.07
	>45	0.95	2	0.95	2		

Year	Band	Average (London)	No studies (London)	Average (National)	No Studies (National)	National BAF	NKMS
2016	=/<45	1.02	10	1.03	15	1.01	1.15
	>45	0.96	4	0.96	4		
2017	=/<45	0.97	11	0.98	22	0.96	1.15
	>45*	0.92	2	0.92	2		
2018	=/<45	0.79	2	0.89	15	0.89	0.98
	>45	0.98	2	0.98	2		
2019	=/<45	0.89	5	0.88	6	0.87	1.01
	>45	0.88	2	0.88	2		

*KC2 co-location study removed as it is not a robust co-location site. Including KC2 results in a BAF of 0.90.

Table A.4 Bias Adjustment Factors used by Kensington and Chelsea (2001-2019)

Year	Mean Bias Adjustment	Mean % Bias
2001	1.37	-26
2002	1.35	-26
2003	1.11	-10
2004	1.10	-9
2005	1.03	-3
2006	1.06	
2007	1.01	
2008	0.98	
2009	1.00	1.14
2010	1.06	-4.78
2011	1.02	-0.91
2012	1.04	-3
2013	1.14	-10
2014	1.03	-3
2015	1.07	-6
2016	1.15	-13
2017	1.15	-13
2018	0.98	2.0
2019	Non-Urban Background: 0.87 Urban Background: 1.01	

A.3 Adjustments to the Ratified Monitoring Data

Short-term to Long-term Data Adjustment

In regard to the 2019 diffusion tube data set, the data capture for 2019 was below 75% at one monitoring site; KC54, two of the triplicate diffusion tubes only achieved a monitoring percentage of 66.67%. Furthermore, data capture for two monitoring locations; KC35 and KC75 was 75% for the year.

Annualisation of the monitoring sites has been completed in line with Box 4.8 and 4.9 within LLAQM.TG(16)[1] and full working details are presented in Table A.6 and Table A.7. In completing the annualisation process, data has been taken from a number of automatic monitoring sites that are part of the LAQN/AURN. In line with LLAQM.TG(16)[1] the monitoring sites that have been used lie within a radius of approximately 50 miles of the sites to be annualised and have a data capture of 85% or above.

All monitoring stations that were used are background monitoring stations and as such are not influenced by local sources of air pollution such as road traffic emissions at roadside monitoring sites. The monitoring sites that were used are listed in Table A.5.

Table A.5 LAQN/AURN Monitoring Stations used for Annualisation

Pollutant	Background LAQN/AURN Sites used for Annualisation
NO_2	• North Kensington – Urban Background • Ealing Acton Vale – Urban Background • Wandsworth Putney – Urban Background
PM_{10}	• North Kensington – Urban Background • Ealing Acton Vale – Urban Background • Westminster Horseferry Road

Table A.6 Diffusion Tube Short Term to Long Term Monitoring Data Adjustment (2019)

Site ID	Unadjusted Diffusion Tube Mean (µg m^{-3})	Annualisation Factor North Kensington	Annualisation Factor Ealing Acton Vale	Annualisation Factor Wandsworth Putney	Average Annualisation Factor	Annualised Concentration (µg m^{-3})
KC54	48.04	1.03	1.03	0.98	1.013	48.66
KC54	51.21	1.03	1.03	0.98	1.013	51.88

Distance Adjustment

In line with LLAQM.TG(16)**Error! Bookmark not defined.** distance correction has been applied to NO_2 m onitoring sites that are not sited at locations of relevant exposure as detailed within **Error! Reference source not found.**. The NO_2 Fall-Off with Distance Calculator (v4.2) has been used to predict the NO_2 concentration at a location of relevant exposure; the calculations are presented in **Error! Reference source not found.** below, with the predicted concentrations also presented in **Error! Reference source not found.** and Table B.1.

To complete the NO_2 fall off with distance calculations a background value for each monitoring location is required. Background NO_2 concentrations for 2019 have been derived from the Defra Background Map database that has a current baseline of 2017.

Distance correction has been completed for all Roadside and Kerbside monitoring locations and not the Urban Background and Urban Centre locations. In addition, distance correction was unable to be completed at a number of Diffusion Tube monitoring sites due to the 2019 monitored NO_2 concentration being higher than the 2019 background concentration as derived from the Defra Background Maps.

Table A.7 NO_2 Fall-Off with Distance Calculations

Site ID	Distance		Annual Mean Concentration (µg/m^{-3})		
	Monitoring Site to Kerb	Receptor to Kerb	Background	Bias Adjusted Result	Predicted at Receptor
KC1	8	18	34.6	27.38	N/A
KC2	4	14	34.4	**43.73**	**42.6**
KC3	1.5	2.5	34.5	**54.41**	**53.5**
KC4	8	22	33.3	**54.98**	**52.6**
KC5	0.5	1.5	34.6	**55.94**	**54.0**
KC31	3.5	9.5	34.6	**43.1**	**42.2**
KC32	380	385	31.1	24.1	N/A
KC33	1.1	2.1	34.6	**72.3**	**70.1**
KC34	26	56	33.3	36.7	N/A
KC35	8	48	34.5	**56.5**	**52.3**
KC38	1.7	2.7	34.6	**71.0**	**69.4**
KC39	8.1	38.1	32.2	29.5	29.9
KC40	65	85	34.5	32.4	N/A
KC41	70	78	34.6	30.8	N/A
KC42	6	15	32.6	34.9	34.7
KC43	38	50	28.1	30.2	N/A
KC44	55	70	33.3	33.4	N/A
KC45	13	26	34.6	**42.4**	**41.8**
KC47	8.5	18.5	34.6	27.4	N/A
KC48	7	8	31.9	**50.4**	**50.2**
KC49	4	5	34.5	**60.5**	**59.9**
KC50	4	5	29.4	**46.4**	**46.0**
KC51	92	95	29.4	31.7	N/A
KC52	2.6	7.6	33.3	39.8	39.2
KC53	12.5	32.5	33.4	38.4	N/A
KC54	3.1	13.1	34.4	**46.2**	**44.6**
KC55	100	120	32.2	37.9	N/A
KC56	9	23	33.3	**51.7**	**49.8**
KC57	3	28	34.5	**43.2**	**41.3**
KC58	13	14	33.2	**46.4**	**46.3**
KC59	0.7	1.7	33.2	**59.8**	**57.8**
KC60	0.7	8.7	34.4	**51.4**	**47.7**
KC61	10	30	32.2	**44.0**	**42.6**
KC64	3.5	11.5	32.5	**42.0**	**40.9**
KC65	0.5	20.5	28.1	33.5	31.8
KC66	16	34	34.6	34.0	N/A
KC67	38	93	29.5	35.7	N/A
KC68	0.5	1	32.4	39.5	39.1
KC69	11.7	13.7	31.1	37.3	N/A
KC70	0.5	4.5	29.4	**50.6**	**46.8**
KC71	0.5	5.5	29.4	**42.0**	39.5
KC72	0.5	5	29.4	**52.0**	**47.7**
KC73	0.5	5	29.4	**41.7**	39.3

Site ID	Distance		Annual Mean Concentration (µg/m^{-3})		
	Monitoring Site to Kerb	Receptor to Kerb	Background	Bias Adjusted Result	Predicted at Receptor
KC74	0.5	5	29.4	39.2	37.3
KC75	0.5	5	29.4	**49.4**	**45.6**
KC76	0.5	5	29.4	**46.6**	**43.4**
KC77	0.5	5	29.4	30.7	30.5
KC78	0.5	5	29.4	30.7	30.4
KC79	0.5	5	29.4	34.4	33.5
KC80	0.5	5	29.4	36.2	34.9

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**

Appendix B Full Monthly Diffusion Tube Results for 2019

Table O. NO_2 Diffusion Tube Results

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2019 % [b]	Annual Mean NO_2													
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean Raw Data [c]	Annual Mean NKMS BAF [c]	Annual Mean Nat. BAF
KC31	100.00	100.00	52.81	47.60	46.54	50.46	37.37	38.17	36.63	33.97	38.94	39.79	47.90	41.46	42.6	43.1	N/A
KC32	100.00	100.00	34.08	34.61	20.47	22.27	17.12	18.42	16.66	19.27	20.31	21.82	34.41	26.53	23.8	24.1	N/A
KC33	100.00	100.00	80.90	87.65	72.45	71.44	72.30	69.40	66.65	66.90	71.00	64.66	70.01	65.31	71.6	72.3	62.3
KC34	100.00	100.00	48.17	51.20	33.79	40.01	28.75	28.29	29.71	29.40	30.79	31.66	46.46	37.32	36.3	36.7	N/A
KC35	75.00	75.00	60.74	64.74	58.57	-	-	53.28	61.65	56.15	55.18	45.14	-	48.43	56.0	56.5	48.7
KC38	100.00	100.00	82.71	82.82	73.80	62.56	69.34	67.79	68.75	74.08	67.70	61.32	69.53	63.07	70.3	71.0	61.2
KC39	91.67	91.67	37.86	35.80	27.40	35.33	25.35	24.49	23.27	-	28.91	26.62	38.72	17.33	29.2	29.5	N/A
KC40	91.67	91.67	40.45	44.54	33.97	-	25.69	25.31	22.61	24.78	25.86	31.70	41.91	35.63	32.0	32.4	N/A
KC41	100.00	100.00	40.87	37.69	28.88	35.80	22.71	24.34	24.74	23.08	27.54	28.16	42.50	29.80	30.5	30.8	N/A
KC42	100.00	100.00	46.95	45.39	34.11	37.29	27.03	28.21	27.83	28.63	32.11	31.71	39.73	35.24	34.5	34.9	N/A
KC43	91.67	91.67	33.66	38.83	26.89	33.91	24.03	-	19.91	22.11	26.10	27.81	42.54	32.78	29.9	30.2	N/A
KC44	91.67	91.67	47.92	43.06	33.10	27.66	26.46	26.24	24.84	26.15	29.36	-	44.48	34.84	33.1	33.4	N/A
KC45	100.00	100.00	47.61	55.64	39.72	50.89	37.33	39.59	38.36	39.00	36.28	37.64	43.43	37.83	41.9	42.4	N/A
KC47	100.00	100.00	37.39	33.75	22.99	27.74	17.47	20.14	19.12	23.94	15.95	30.12	45.85	37.45	27.7	27.9	N/A
KC47	100.00	100.00	31.52	34.12	23.49	28.13	22.10	20.40	18.88	23.51	25.22	25.61	38.41	29.87	26.8	27.0	N/A

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2019 % [b]	Annual Mean NO_2														
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean Raw Data [c]	Annual Mean NKMS BAF [c]	Annual Mean Nat. BAF
KC47	100.00	100.00	41.00	38.16	25.33	26.26	19.12	18.23	18.53	22.82	23.33	26.25	34.02	31.19	27.0	27.3	N/A
KC48	100.00	100.00	60.68	70.34	56.08	54.07	55.52	53.63	50.62	54.29	51.82	26.28	40.68	25.32	49.9	50.4	N/A
KC49	100.00	100.00	63.15	54.40	59.83	73.51	51.12	65.33	59.46	-	63.37	53.64	58.89	56.09	59.9	60.5	N/A
KC50	100.00	100.00	50.05	51.47	45.26	38.34	34.40	35.88	33.15	34.39	38.62	56.66	69.54	63.40	45.9	46.4	43.5
KC51	100.00	100.00	32.08	33.49	26.23	45.42	22.95	22.33	20.46	19.89	21.79	40.29	47.69	44.23	31.4	31.7	52.1
KC52	100.00	100.00	56.57	45.67	44.70	50.05	42.73	31.25	39.60	35.95	35.63	26.45	36.84	27.73	39.4	39.8	40.0
KC53	100.00	100.00	43.68	46.78	37.92	38.18	33.99	29.31	31.30	35.67	35.03	38.42	57.05	29.04	38.0	38.4	N/A
KC54	83.33	83.33	60.29	59.92	60.71	53.92	38.84	-	41.40	-	38.59	32.86	44.12	41.21	47.2	47.7	41.1
KC54	66.67	66.67	58.00	69.38	52.00	-	40.24	-	36.92	-	37.41	-	45.76	44.59	48.0	41.9	36.1
KC54	66.67	66.67	55.42	70.67	54.20	-	42.56	-	36.29	-	44.29	-	53.50	52.71	51.2	49.1	42.3
KC55	91.67	91.67	48.00	48.03	35.63	42.64	29.80	31.28	23.71	25.66	29.85	-	45.92	52.22	37.5	37.9	N/A
KC56	100.00	100.00	52.98	59.67	50.71	59.75	54.68	53.80	54.76	56.11	51.17	37.44	47.01	36.22	51.2	51.7	44.5
KC57	100.00	100.00	49.91	46.40	36.29	40.42	35.18	38.45	29.78	32.32	42.43	55.81	56.23	50.24	42.8	43.2	N/A
KC58	91.67	91.67	58.08	51.80	45.06	44.03	-	51.73	45.20	40.50	48.53	39.12	46.68	34.84	46.0	46.4	40.0
KC59	100.00	100.00	70.94	71.39	65.27	61.94	56.88	53.06	55.58	55.07	61.94	46.78	61.32	50.83	59.2	59.8	51.5
KC60	100.00	100.00	60.85	60.00	55.29	42.93	43.98	48.89	43.73	53.25	46.70	44.98	63.79	46.01	50.9	51.4	44.3
KC61	100.00	100.00	52.17	49.56	44.16	44.44	37.63	38.66	34.97	33.78	40.41	46.53	53.22	47.08	43.6	44.0	N/A
KC64	91.67	91.67	44.51	48.91	37.06	50.75	38.23	36.38	38.15	31.90	-	39.09	50.09	42.22	41.6	42.0	N/A
KC65	100.00	100.00	34.90	41.61	31.84	35.04	25.61	25.79	23.41	25.18	32.64	39.13	48.19	34.61	33.2	33.5	N/A

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2019 % [b]	Annual Mean NO_2														
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean Raw Data [c]	Annual Mean NKMS BAF [c]	Annual Mean Nat. BAF
KC66	91.67	91.67	44.79	48.54	32.81	35.49	29.76	25.86	22.00	-	30.14	21.09	46.05	33.41	33.6	34.0	N/A
KC67	100.00	100.00	46.21	47.85	35.81	29.15	26.38	26.62	26.11	28.90	33.17	36.00	44.61	43.19	35.3	35.7	N/A
KC68	100.00	100.00	54.73	45.45	41.17	33.91	33.83	34.39	35.25	37.83	34.52	36.61	43.97	37.27	39.1	39.5	N/A
KC69	100.00	100.00	48.04	41.93	32.71	30.73	28.07	28.23	26.07	32.54	29.46	44.76	47.73	53.20	37.0	37.3	N/A
KC70	100.00	100.00	52.39	59.30	50.19	45.60	49.04	46.25	38.35	52.08	50.83	48.77	55.99	52.88	50.1	50.6	43.6
KC71	100.00	100.00	50.16	46.62	40.56	47.45	35.12	36.94	30.02	34.65	37.13	38.95	57.79	43.79	41.6	42.0	N/A
KC72	100.00	100.00	63.06	63.56	46.65	56.61	50.48	45.51	31.13	48.28	47.29	50.69	59.21	55.87	51.5	52.0	44.8
KC73	100.00	100.00	53.53	49.39	41.86	50.47	35.20	38.77	29.45	31.73	33.69	38.06	52.93	39.82	41.2	41.7	N/A
KC74	100.00	91.67	-	47.09	37.88	54.17	0.93	38.23	31.02	38.29	36.90	46.21	52.17	43.50	38.8	39.2	N/A
KC75	81.81	75.00	-	-	-	59.91	45.65	46.62	43.30	42.91	43.62	47.71	59.80	50.94	48.9	49.4	42.6
KC76	100.00	91.67	-	54.84	47.59	54.14	42.13	42.74	41.12	40.34	39.02	47.12	56.19	42.82	46.2	46.6	40.2
KC77	100.00	91.67	-	41.34	33.78	30.32	25.43	23.64	15.74	24.96	26.63	32.94	43.93	35.62	30.4	30.7	N/A
KC78	90.90	83.33	-	-	30.33	34.10	23.90	25.01	22.05	24.61	32.34	37.69	40.22	33.34	30.4	30.7	N/A
KC79	100.00	91.67	-	41.83	38.63	38.38	29.38	29.33	23.62	29.75	30.72	36.95	38.83	37.30	34.1	34.4	N/A
KC80	90.90	83.33	-	44.47	38.07	40.09	30.81	30.19	26.06	28.71	30.33	38.38	50.83	-	35.8	36.2	N/A

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

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

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

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

Appendix C Previously Reported Automatic Monitoring Station Details

Table P. 2019 ASR Automatic Monitoring Station Details

Site ID	Site Name	X (M)	Y (M)	Site Type	In AQMA?	Distance From Monitoring Site To Relevant Exposure (M)	Distance To Kerb Of Nearest Road (N/A If Not Applicable) (M)	Inlet Height (M)	Pollutants Monitored	Monitoring Technique
KC1	North Kensington	524045	181752	Urban Background, LAQN & AURN affiliate site	Y	10	8m to St Charles Square	3	NO_2, CO, PM_{10}, $PM_{2.5}$, SO_2, O_3	Chemiluminescent, FIDAS, GFC, Fluorescence UV, Photometric
KC2	Cromwell Road	526522	178965	Roadside	Y	10	4m to Cromwell Road and 5m to Queens Gate	2	NO_2, PM_{10}	Chemiluminescent, FDMS
KC3	Knightsbridge	527516	179395	Kerbside	Y	1	1.5m to Hans Road, 4m from Brompton Road	3	NO_2	Chemiluminescent
KC4	Chelsea	527267	178089	Roadside	Y	14	8m from Kings Road	3	NO_2	Chemiluminescent
KC5	Earls Court	525700	178357	Kerbside	Y	1	0.5m to Earls Court Road	2	NO_2, PM_{10}	Chemiluminescent BAM 1020 Heated