Westminster City Council Air Quality Annual Status Report for 2018
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This report provides a detailed overview of air quality in Westminster City Council during 2018. It has been produced to meet the requirements of the London Local Air Quality Management statutory process[1].

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

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Abbreviations

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

Table A. Summary of National Air Quality Standards and Objectives

Pollutant	Objective (UK)	Averaging Period	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} mot to be exceeded more than 3 times a year	24 hour mean	31 Dec 2004

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

1. Air Quality Monitoring

1.1 Locations - Table B. Details of Automatic Monitoring Sites for 2018

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
Marylebone Road	528125	182016	Kerbside	Y	44m	1.5m	2.5m	NOx; PM_{10}; $PM_{2.5}$; SO_2	Chemiluminescent, TEOM, FDMS
Horseferry Road	529802	178962	Urban Background	Y	21m	n/a	3m	NOx; $PM_{10;}$ $PM_{2.5;}$ Heavy Metals[1]	Chemiluminescent, FDMS, BAM, Partisol
Oxford Street (Selfridges)	528276	181065	Kerbside	Y	0m	1m	1.5m	NOx, PM_{10}	Chemiluminescent, BAM
Strand	530785	180911	Roadside	Y	0m	2.5m	1.8m	NOx	Chemiluminescent
Covent Garden	530444	180903	Urban Background	Y	0m	n/a	2m	NOx	Chemiluminescent
Cavendish Square	528763	181397	Roadside	Y	15m	5 m	1.7 m	NOx, PM_{10}	Chemiluminescent, BAM
Oxford Street East (94 Oxford Street)	529493	181331	Roadside	Y	0m	1.2 m	1.7 m	NOx, PM_{10}	Chemiluminescent, BAM
Buckingham Palace Road	528709	178773	Roadside	Y	50m	6m	1.5m	NOx	Chemiluminescent

[1] Heavy Metals include: As, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, V, Zn in PM_{10}.

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

The City Council do not currently have any non-automatic monitoring sites. However, following advice from the GLA, we have commissioned a report to recommend locations for the installation of diffusion tubes as part of a new borough wide diffusion tube monitoring programme. This report is due to be completed in July 2019.

1.2 Comparison of Monitoring Results with AQOs

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

Table D. 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 2018 % [b]	Annual Mean Concentration (μg m^{-3})							
				2011 [c]	2012 [c]	2013 [c]	2014 [c]	2015 [c]	2016 [c]	2017 [c]	2018 [c]
Marylebone Road	Automatic	98	98	**97**	**94**	**85**	**94**	**88**	**87**	**84**	**85**
Horseferry Road	Automatic	97	97	**41**	39	**45**	**46**	39	37	36	31
Oxford Street	Automatic	86	86	n/a	n/a	**135**	**143**	**135**	**87**	**72**	**63**
Strand	Automatic	94	94	n/a	n/a	n/a	n/a	**122**	**101**	**92**	**88**
Covent Garden	Automatic	98	98	n/a	n/a	n/a	n/a	n/a	n/a	37	39
Cavendish Square	Automatic	98	57	n/a	n/a	n/a	n/a	n/a	n/a	n/a	**64[1]**
Oxford Street East	Automatic	94	54	n/a	n/a	n/a	n/a	n/a	n/a	n/a	**76[1]**
Buckingham Palace Road	Automatic	98	84	n/a	n/a	n/a	n/a	n/a	n/a	n/a	**52**

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%

[1] This data has been annualised and the calculations can be found in appendix A.

Table E. NO_2 Automatic Monitor Results: Comparison with 1-hour Mean Objective

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2018 % [b]	Number of Hourly Means > 200 µg m^{-3}							
			2011 [c]	2012 [c]	2013 [c]	2014 [c]	2015 [c]	2016 [c]	2017 [c]	2018 [c]
Marylebone Road	98	98	**217**	**122**	**59**	**60**	**56**	**49**	**38**	**29**
Horseferry Road	97	97	0	0	0	0	0	0	0	0
Oxford Street	86	86	n/a	n/a	**1502**	**1532**	**1391**	**168**	1	3
Strand	94	94	n/a	n/a	n/a	n/a	**284**	**235**	**26**	**34**
Covent Garden	98	98	n/a	n/a	n/a	n/a	n/a	n/a	0	0
Cavendish Square	98	57	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0
Oxford Street East	94	54	n/a	n/a	n/a	n/a	n/a	n/a	n/a	11
Buckingham Palace Road	98	84	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1

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%

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

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2018 % [b]	Annual Mean Concentration (µg m^{-3})							
			2011 [c]	2012 [c]	2013 [c]	2014 [c]	2015 [c]	2016 [c]	2017 [c]	2018 [c]
Marylebone Road	98	98	**41**	38	33	31	30	29	27	26
Marylebone Road FDMS	96	96	38	31	29	26	24	26	24	24

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2018 % [b]	Annual Mean Concentration (µg m^{-3})							
			2011 [c]	2012 [c]	2013 [c]	2014 [c]	2015 [c]	2016 [c]	2017 [c]	2018 [c]
Horseferry Road	96	96	19	18	n/a	19	17	17	17	17
Oxford Street	75	42	n/a	n/a	n/a	n/a	n/a	n/a	n/a	28[1]
Cavendish Square	99	58	n/a	n/a	n/a	n/a	n/a	n/a	n/a	28[1]
Oxford Street East	89	50	n/a	n/a	n/a	n/a	n/a	n/a	n/a	28[1]

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%

[1] This data has been annualised and the calculations can be found in appendix A.

Table G. PM_{10} Automatic Monitor Results: Comparison with 24-Hour Mean Objective

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2018 % [b]	Number of Daily Means > 50 µg m^{-3}							
			2011 [c]	2012 [c]	2013 [c]	2014 [c]	2015 [c]	2016 [c]	2017 [c]	2018 [c]
Marylebone Road	98	98	**73**	**48**	29	22	13	15	12	5
Marylebone Road FDMS	96	96	**57**	23	21	14	10	14	8	7
Horseferry Road	96	96	8	10	n/a	8	3	6	6	1
Oxford Street	75	42	n/a	n/a	n/a	n/a	n/a	n/a	n/a	3
Cavendish Square	99	58	n/a	n/a	n/a	n/a	n/a	n/a	n/a	3
Oxford Street East	89	50	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1

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%

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

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2018 % [b]	Annual Mean Concentration (µg m^{-3})							
			2011 [c]	2012 [c]	2013 [c]	2014 [c]	2015 [c]	2016 [c]	2017 [c]	2018 [c]
Marylebone Road FDMS	89	89	25	22	20	18	16	16	15	16
Horseferry Road	88	88	13	12	12	12	10	10	9	11[1]

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%

[1] Data was collected via a Partisol until 28 February 2018. This was removed and a BAM installed and started collecting and reporting data from 1 April 2018. The Partisol data downloads as daily mean data and the BAM as hourly mean data therefore Bureau Veritas have calculated daily means for the BAM data and then calculated an annual mean and % data capture based upon the daily values. The spreadsheet with workings is available upon request.

Table I. SO_2 Automatic Monitor Results: Comparison with Objectives

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2018 % [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}
Marylebone Road	91	91	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%

2. Action to Improve Air Quality

2.1 Air Quality Action Plan Progress

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

Table J. Delivery of Air Quality Action Plan Measures

Measure	Action	Progress
TRAN 1	Work with TfL to investigate options for reducing through-traffic in specific parts of Westminster, such as Oxford Street and Marylebone Road, and to	Westminster's Major Schemes Programme has been developed in consultation with a wide range of stakeholders that include TfL, land owners, Business Improvement Districts (BIDs) and developers. In October 2018 the council published and consulted on its vision for the Oxford Street District,

	examine the options for reducing air pollution at hotspots.	with over 2,100 responses received. 75% of residents responding supporting our Place Shaping principles. Improving air quality across the OSD area is a key priority for the council and air quality will be considered across all areas of the council's work in the District. The council remains committed to working with TfL and the Mayor of London where appropriate to improve the Oxford Street area. Other major schemes that it is expected will have air quality improvements include the Baker Street two-way which has been completed in liaison with TfL.
TRAN 2	Examine potential options and implement actions to minimise pedestrian exposure to high levels of pollution.	As per TRAN1. In addition, public realm projects such as that for Aldywch and the Strand are progressing, which include planned pedestrianisation to reduce pedestrian exposure to pollution. Smaller scale projects which involve road closures to recue pedestrian exposure to pollution such as 'school streets' have been implemented, such as at St Mary's Bryanston Square Primary School.
TRAN 3	Support car clubs with particular emphasis on the inclusion of low emission vehicles in the fleet.	New contracts for car clubs are approaching the end of their first year and there have been no adverse clustering events from the flexible service to date. Zipcar membership volumes in the City are at 15,000 with significant increases seen since contract start. Approx 30% of the fleet is also EV.
TRAN 4	Continue to promote and provide infrastructure for electric and low emission vehicles.	Westminster's EV charging network is one of the largest in the country, and in 2018 the council produced a new EV Charging Infrastructure Strategy. Increasing our charging infrastructure is a priority set out in the council's overarching City for All strategy. Introducing up to 200 additional lamp column charge points through the City alongside resident parking bays. This will add to the approx. 100 already on street, all provided through contract with Siemens and providing PAYG charging (complete by end August). Additional 35 charge points, made up of 15 delivering a 7kW output and 20 delivering a 22kW

		output, alongside dedicated EV only bays. The points are provided by Bluepoint London and will add to their existing stock of 39 7kW points, with go live likely in September. Proposed sites have been submitted to TfL for up to 20 rapid charge points, with plans to utilise their framework and funding stream to introduce them by the end of the year. Their priority is to support taxi transition and the majority of the proposed sites are for public availability. So there is a dependency of them accepting locations that aren't exclusive to taxis. This will add to the 12 rapids for taxis already in Westminster (6 are pending connection through UKPN).
TRAN 5	Continue to investigate ways in which freight consolidation can be developed and investigate and develop ways to reduce congestion from delivery vehicles.	Westminster manages freight consolidation in a number of ways, including through Delivery Service Plans as part of the Clean Air Better Business project (see COMM7); low emission fleet policies (see TRAN9 and TRAN10), through our planning policies, and through innovative projects and research including autonomous delivery vehicles. Westminster is a partner on the Defra funded Clean Air Villages 2 project, which will seek to investigate and pilot freight retiming and consolidation opportunities in the West End and Covent Garden areas related to the food and beverage industry.
TRAN 6	Support and undertake local communication campaigns to raise awareness of the benefits of fuel efficient and smoother driving and evaluate the possibility of supporting providers of fuel efficient driver training through communication to Westminster residents.	Fuel Efficient driver training was provided in 2018 via the Cross River Partnership run project 'Cleaner Air Better Business'. Westminster's DontBeIdle campaign phase 2 has targeted businesses with large fleets in order to encourage them to implement driver efficiency training. National Express and Deliveroo are two major fleet operators who have signed up to work with the council on this project.
TRAN 7	Support schemes to encourage people to use other forms of sustainable travel such as walking and cycling.	In 2017 we introduced a diesel surcharge in F Zone (Marylebone, Fitzrovia & Hyde Park) as part of a package of measures to try and address the issue of poor air quality within the Low Emission Neighbourhood. The trial set a 50% surcharge on all diesel vehicles manufactured before 2015 using Pay to Park bays. The results of the trial has been the percentage of pre-2015 diesels paying to park has reduced by more than 16%.

		The diesel surcharge will be rolled out across the city from September 2019 following a public consultation in late 2018 which saw strong support for the policy to be adopted across all parking zones in Westminster. In 2017/18 undertook the groundwork for new Walking Strategy and a new Active Westminster Strategy, both of which will shape our work in this area over the next 5 years. Full details of these Strategies will be include in next year's ASR. A number of other council policies encourage the uptake of walking and cycling: this includes our Code of Construction Practice and planning polices; Dr Bike and cycle to work hire schemes; and the council provides free cycle training for all abilities.
TRAN 8	Support and promote the implementation of travel plans for schools and businesses.	As per last year's ASR, within the school travel plan and STARS framework Westminster schools have undertaken a wide variety of activities, including: Cycle training, Walking trips, child pedestrian training, Curriculum lessons, Travel training, Participating in TfL's Travel Party Scheme, Sponsored walks/runs, Promotion of school travel plans via school websites, parent evenings, reception desks and more, Car free days, Cleaner Air 4 Schools Project in 2012, The Big Pedal – Cycling competition held in March 2015 by Sustrans, Bike It Plus, Walk to School Week, SEN Travel training, theatre education programmes and local/national competitions. 20mph zones have been introduced at just under 40 WCC schools to improve road safety and reduce pollution, with this expected to be rolled out across the city pending a public consultation later this year. School play streets have also been introduced as well as School Streets as part of our Active Westminster strategy. Increasing the take up of cycling to and from school is a key objective of the Council's Cycling and Walking Strategy.
TRAN 9	Ensure the use of low emission vehicles within the Westminster City Council fleet and those of its contractors and regularly review Fleet Policy and fuel hierarchy to	Westminster's 'Green Fleet' policy, most recently updated in 2008, sets a procurement fuel hierarchy prioritising zero emission vehicles and vehicle emissions standards requirement the latest euro standard vehicles be used. Green fleet policy was integrated into the Council Procurement code in 2016. A new green fleet policy is being drawn up

	ensure best possible effects for air quality.	and will be adopted and reported in next year's ASR.
TRAN 10	Compel contractors and associates to reduce air pollution and carbon emissions through tender and contract specification.	The Fleet Policy has been incorporated into the Procurement Policy. External Contractors provide, where relevant environmental data on vehicle used on contract and report on fuel use emissions. The lower emissions will score higher during tender evaluations. Examples of this include responsible procurement inclusions in the Everyone Active contract (resulting in carbon and pollution savings at WCC run leisure centres) and WCC's parking debt management contract, which includes green fleet commitments and air quality related volunteering commitments.
TRAN 11	Continue to commit to the provision of Safe and Fuel Efficient Driving (SAFED) training for fleet drivers and evaluate the possibility of: extending Safe and Fuel Efficient Driving (SAFED) training to the City Council's contractors' fleet drivers.	This action is complete: Safe and Fuel Efficient Driving Training (SAFED) has been rolled out for Council drivers.
TRAN 12	Undertake a review of the options and resource and emissions implications of utilising 'no idling' legislation to help improve local air quality.	In 2017, Westminster commenced trialling PCN enforcement for unnecessary idling to hopefully provide a more efficient and effective process to the enforcement of vehicle idling. In all instances where the vehicle is attended, drivers of idling vehicles are asked to switch off their engines or move on, and only where they refuse, and then only after the Marshal has given the idling vehicle a full one minute's constant observation, is issuing a PCN considered. This change has now been made permanent across the city. Westminster has created and implemented a dedicated communications campaign to engaged the local community and embed no-idling behaviour change: #dontbeidle. This has been conducted using traditional media, social media and Air Marshall events; MPs and celebrity endorsement; and a dedicated #DontBeIdle website. The overall aim is to change behaviour by encouraging written commitment to the pledge from residents and core driver audiences. As of the end of January 2019 over 14000 sign ups had been achieved, exceeding the original target of 10000. #DontBeIdle has won national awards as a communications and behaviour change campaign.

		Westminster's DontBeIdle campaign phase 2 has targeted businesses with large fleets in order to encourage them to implement driver efficiency training. National Express and Deliveroo are two major fleet operators who have signed up to work with the council on this project. Westminster has also met with the Department for Transport to discuss changes to national legislation to make it easier for local authorities to tackle unnecessary engine idling.
TRAN 13	Communicate the 'no idling' message to parked coach drivers on Westminster's streets by installing signs in coach parking bays on borough managed roads.	Majority of work in this area is outlined under TRAN12. The #dontbeidle campaign has moved towards targeting fleet and coach operators in the city.
TRAN 14	Work with the Mayor to develop procedures to press the operator companies of vehicles found with idling engines to take enforcement action on the drivers of those vehicles.	Majority of work in this area is outlined under TRAN12. The #dontbeidle campaign has moved towards targeting fleet and coach operators in the city.
TRAN 15	Improve public communications on air quality and no-idling messages by including information on the impacts of idling on the Council website and in Council publications.	Incorporated in the borough-wide idling enforcement detailed in TRAN12 and COMM 4
TRAN 16	Write to the Minister for Transport with responsibility for rail services and to local MP's setting out the air quality and other benefits that would be achieved by the earliest possible electrification of rail services from Marylebone seeking information on the likely timescales for this.	Action complete: no further action required.
TRAN 17	Maintain dialogue with TOC's to review opportunities for improvements in reducing emissions.	This is an ongoing process, including liaising with Business Improvement Districts who host train terminals.

TRAN 18	Communicate with government Ministers to make the case for stronger control of the environmental effects of rail services through existing mechanisms.	Action complete: no further action required.
TRAN 19	Raise with TfL and the GLA the importance of appropriate environmental impact assessments within consultation exercises when changes in rail services are proposed (e.g. High Speed Rail 2), and to consult the City Council respectively.	Action complete: no further action required.
DEV 1	Require developers to undertake an Air Quality Assessment (AQA) where a development may adversely affect local air quality and require developers to submit an air pollution abatement and mitigation plan where an air quality assessment shows that a new development is likely to have an adverse impact on air quality, or expose new air quality sensitive receptors to poor air quality.	Westminster planning policy is in accordance with the London Plan and states 'The council will require a reduction of air pollution, with the aim of meeting the objectives for pollutants set out in the national strategy. Developments will minimise emissions of air pollution from both static and traffic-generated sources.' As part of this, WCC requires developers to undertake an Air Quality Assessment (AQA) where a development may have negative air quality impacts, either on the local environs or by bringing new receptors into an area of poor air quality. Where the AQA shows that a new development is likely to have an adverse impact on air quality or sensitive receptors the developer will submit an air pollution abatement and mitigation plan. Planning permission will be refused unless adequate mitigation measures are adopted to reduce the air quality impact or exposure to acceptable levels. All comments in this section related to DEV actions should be viewed in light of the city's ongoing work in developing its new local plan. The City Plan 2019-40 will be adopted in 2019. Updates on Westminster's local plan, supplementary planning documents, and the first neighbourhood plans to be examined and adopted in the city (Knightsbridge) will be included in next year's ASR.
DEV 2	Strengthen and further develop air quality policy in the emerging local	WCC's draft local plan, which has been developed throughout this ASR year, includes new policies to manage and mitigate air, noise and light pollution,

	planning documents in order to develop transparent air quality assessment methodology for planning applications and support planning officers in the assessment of those applications.	as well as construction impacts, construction waste and contaminated land. The local plan will be adopted later this year and it is expected that full details on new policies will be included in next year's ASR. Westminster has also received Defra funding to undertake training for enforcement officers to support the council's work and statutory duties under the Clean Air Act.
DEV 3	Include air quality requirements in Sustainable Design SPD to help reduce unwanted emissions from boilers through improved building efficiency, boiler efficiency, using renewable energy and supplying energy efficiently.	The SPD is on hold in lieu of our ongoing local plan development. No further action required at this point. It is expected that the SPD will be complete and reported on in next year's ASR.
DEV 4	Protect decentralised energy networks in order to provide efficient energy production and to minimise emissions from combustion.	Westminster planning policy states 'Infrastructure that is or has previously been in use as part of a district heat network will be protected. Major developments should be designed to link to and extend existing heat and energy networks in the vicinity.' As part of our emerging local plan, which will cover the next 15-20 years, the Council is developing new policies on (decentralised) energy. In 2017, Church Street District Heating Scheme was awarded seed funding from Government's Heat Networks Investment Project for the development of its CHP networks throughout this major regeneration site.
DEV 5	Adopt policy which ensures biofuel combustion does not negatively impact on local air quality.	No known biomass development exists in Westminster.
DEV 6	Prioritise low polluting transport options in development.	Council planning policy exists for promoting the use of: car clubs, electric and alternative fuel vehicles, cycling, and cycling infrastructure.
DEV 7	Require major site developers to comply with the Westminster Code of Construction Practice and the GLA's 'The Control of Dust and Emissions from Construction and Demolition: Best Practice	Since an adoption in 2016, Westminster's Code of Construction Practice applies to all major developments as well as all basement excavations. This requires sites to engage with residents, submit information, and adhere to the best practice contained in the CoCP in order to minimise the environmental impacts of construction projects within Westminster. The new CoCP requires developments to comply with the GLA's 'The

	Guidance' to all development sites.	Control of Dust and Emissions from Construction and Demolition: Best Practice Guidance' and aims to provides important background information on managing construction, and sets out our requirements for: General site operations; Liaison with the public; Employment and skills; Traffic and transport (including cycle safety); Noise and vibration; Dust and air pollution; Waste management; Water pollution and flood risk; Urban ecology; Heritage assets; Protection of existing installations. The Code has been applied since the beginning of September 2016, with a dedicated team of CoCP staff having been recruited, funded by the new fees as part of the Code. It is expected that the council's CoCP will be updated this year with a full update to be made in next year's ASR.
COMM 1	Publish high quality air quality information via the Westminster City Council website, and investigate new methods of informing and communicating with the public, especially vulnerable groups.	Westminster continues to publish high quality air quality information via the Westminster City Council website. This includes specific information for schools (including teachers and parents) and for those more vulnerable to pollution. WCC continues to support and promote airTEXT to residents. Schools, care homes and GP surgeries in the city also receive pollution alerts from King's College London on behalf of the GLA.
COMM 2	Monitor air pollution across the City and periodically review the air quality monitoring network.	Air quality in 2018 was monitored at 8 sites across Westminster: full details of monitoring undertaken can be found earlier in this ASR.
COMM 3	Monitor $PM_{2.5}$ air pollution across the City and periodically review our air quality monitoring network.	Per COMM 2 above.
COMM 4	Undertake communication campaigns to raise awareness of air pollution health impacts and minimise exposure to pollution, where possible linking with other complementary initiatives.	As outlined in TRAN12, Westminster has created and implemented a dedicated communications campaign to engaged the local community and embed no-idling behaviour change. This has been conducted using traditional media, social media and Air Marshall events; MPs and celebrity endorsement; and a dedicated #DontBeIdle website. The overall aim is to change behaviour by encouraging written commitment to the pledge from residents and core driver audiences.
COMM 5	Foster links with Clinical Commissioning Groups (CCGs) and Health	Westminster has worked with the city's Public Health unit to help the creation of an Air Quality and Public Health factsheet, designed to aid council

	Department to aid public communication and understanding of how air pollution affects heath.	officers and Public Health officers in understanding the impacts and of air pollution on health and the links between policy and pollution levels.
COMM 6	Continue to support and raise awareness about the AirTEXT air quality information service.	Westminster continues to support airTEXT and promotes its service via our website and through other publications.
COMM 7	Undertake business engagement to raise awareness of air quality and encourage reduction in emissions associated to business transport and buildings.	Westminster is a partner in Cross River Partnership's Clean Air Better Business programme supports Business Improvement Districts (BIDs) to increase awareness of air quality issues amongst their member businesses and facilitate business-led action to improve air quality. The Clean Air Better Business programme is funded by business improvement districts, boroughs including Westminster City Council and the Mayor's Air Quality Fund. Westminster is also a partner on the Defra funded Clean Air Villages 2 project. Westminster (partnered with Camden) also received Defra grant funding in 2017 to conduct a complementary project to Clean Air Better Business focusing on SME businesses. This project is being delivered by Cross River Partnership.
COMM 8	Raise awareness of air quality within Westminster schools to increase understanding of issues, encourage more sustainable travel modes and minimise exposure.	We work closely with Westminster schools to encourage more sustainable travel modes and minimise exposure. As outlined in last year's ASR, some of the initiatives/actions that have been completed are as follows: Cycle training, Walking trips, Curriculum lessons, Travel training, Participating in TfL's Travel Party Scheme, Sponsored walks/runs, Promotion of school travel plans via school websites, parent evenings, reception desks and more, Car free days, Cleaner Air 4 Schools Project in 2012, anti-idling campaigns, parking engagement visits and presentations, school coach consultations, The Big Pedal – Cycling competition held in March by Sustrans, Bike It Plus, Walk to School Week, SEN Travel training, theatre education programmes and local/national competitions. Four Westminster schools have been provided with audits by the Mayor of London's Schools AQ audit programme, and the council is match funding all interventions made at these schools as a result of the project. The council has also funded interventions such as green screening at St Edwards primary school

		Marylebone and a school street at St Mary's Bryanston Square primary school. The council has also announced a £1m Schools' Clean Air Fund, which will be available to all primary schools in the city. To help them access the fund all schools in Westminster will receive air quality audits funded through s106 monies. Full details of this project, including take up and outcomes, will be reported on in Westminster's 2019 ASR.
NEW 1	Deliver successful Low Emission Neighbourhood projects	In 2018 Westminster completed its £1m match funded Marylebone Low Emission Neighbourhood. Council match funding exceeded the £1m grant funding provide from TfL in order to support some of the urban realm projects undertaken in the LEN. Projects utilised in the LEN are expounded on throughout this action plan update (e.g. TRAN7, TRAN12 and COMM8); additional measures include parklets, urban realm improvements, and air quality for business audits. The Marylebone LEN provided Westminster a testing ground for a variety of policies and projects which have or will be take up across the city. These include: the diesel parking surcharge, school streets, anti-idling signage, and SUDS planting incorporated into urban realm / streetscape improvement schemes. Westminster also supported the Northbank Business Improvement District in its Business LEN. Westminster is the only London borough to have received GLA funding for two LEN projects.
NEW 2	Discourage the use of polluting diesel vehicles throughout the city.	A standard Resident parking permit parking in Westminster currently costs £145 per annum. To encourage adoption of lower emission vehicles amongst Residents we offer a discount to vehicles under 1200cc where permits cost £103 per annum, and eco vehicles who receive free permits. We also have a car club giving options to residents wanting to give up car ownership who may still need the occasional use of a car. In 2017 we introduced a diesel surcharge in F Zone (Marylebone, Fitzrovia & Hyde Park) as part of a package of measures to try and address the issue of poor air quality within the Low Emission Neighbourhood. The trial set a 50% surcharge on all diesel vehicles manufactured before 2015 using Pay to Park bays. The results of the trial to date have

		seen a reduction of over 10% in the number of vehicles paying to park in F zone versus last year, and the percentage of pre-2015 diesels paying to park has reduced by more than 16%. The diesel surcharge will be rolled out across the city from September 2019 following a public consultation in late 2018 which saw strong support for the policy to be adopted across all parking zones in Westminster.
NEW 3	Implementation of City wide diffusion tube monitoring programme for Nitrogen Dioxide.	Following feedback from the GLA and Defra after 2018's ASR, funding has been secured for this programme. A contractor has been appointed to develop the first phase of the project and this has now commenced. Final recommendations are due in July 2019 and the first results will be included in next year's ASR.

3. Planning Update and Other New Sources of Emissions

Table K. Planning requirements met by planning applications in Westminster City Council in 2018

Action	Number	Notes
a) Number of planning applications where an air quality impact assessment was reviewed for air quality impacts	44	40 major applications and 4 non-major
b) Number of planning applications required to monitor for construction dust	113	
c) Number of CHPs/Biomass boilers refused on air quality grounds	0	
d) Number of CHPs/Biomass boilers subject to GLA emissions	1	A specific condition was noted on 1 application in response to a GLA request in their comments.

limits and/or other restrictions to reduce emissions		All other applications are checked for compliance and are covered under a general condition requiring the development to be installed in accordance with the approved plans.
e) Number of developments required to install Ultra-Low NO_x boilers	0	No conditions have been imposed relating to this requirement. All applications are covered under a general condition requiring the development to be installed in accordance with the approved plans and unfortunately I don't currently have a mechanism to separate those applications were ultra-low NOx boilers were specified within the submitted documents. I will consider how this can be done for reporting in future years.
f) Number of developments where an AQ Neutral building and/or transport assessments undertaken	43	40 major applications 2 CHP (non major) 1 transport assessment
g) Number of developments where the AQ Neutral building and/or transport assessments not meeting the benchmark and so required to include additional mitigation	0	We had 1 development, which whilst not classed as a "Major Development", the proposed use of the building as a school was a sensitive use and as such the applicant submitted an air quality assessment. This assessment demonstrated that it was not possible to achieve 'air quality neutral' on site however, as recommended by Policy SI1 of the Draft London Plan 2018 and the Mayors SPG on Sustainable Design and Construction (2014), the applicant agreed to make a financial contribution towards air quality off-setting as mitigation, which was secured by way of a planning condition. I note this question only asks about on site mitigation therefore I have not included this 1 application in the previous column.
h) Number of planning applications with S106 agreements including other requirements to improve air quality	0	During this time period, the City Council received financial contributions from a total of 27 planning applications in connection with air quality monitoring as part of contributions to fund the Environmental Inspectorate to monitor the impacts of construction. We don't

		use this process following the adoption of the COCP however some previously approved applications are still being implemented.
Number of planning applications with CIL payments that include a contribution to improve air quality	0	
i) 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.	*e.g.* *12 conditions included* *6 registered and compliant* *2 unregistered/uncompliant and being chased.*	49 conditions included on planning permissions in this year There are 3 Crossrail sites and 1 Tideway site which are exempt from NRMM requirements. Audits – 29 registered and compliant. 1 registered and non compliant. Please note the audit figures do not include the total number of visits to sites which include those sites that did not have plant above the required threshold, had no plant on site, had not commenced works etc. The compliance figures are those sites that are currently compliant/non compliant following revisits etc. Projects evolve during the course of the year in terms of build status, whether or not there is plant on site, compliance etc and this figure is the current status. Audit figures are for the financial year April 2018 – March 2019. I will report figures from April 2019 – December 2019 next year to avoid double counting and then report by calendar year going forwards. Non compliant site is currently being asked to confirm removal of 1 non compliant item of plant.
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	*e.g.* *12 conditions included* *6 registered and compliant* *2 unregistered/uncompliant and being chased.*	62 conditions included on planning permissions in this year. Audits - 7 registered and compliant No sites non compliant. Please note the audit figures do not include the total number of visits to sites which

www.nrmm.london and that all NRMM used on-site is compliant with Stage IIIA of the Directive and/or exemptions to the policy.		include those sites that did not have plant above the required threshold, had no plant on site, had not commenced works etc. The compliance figures are those sites that are currently compliant/non compliant following revisits etc. Projects evolve during the course of the year in terms of build status, whether or not there is plant on site, compliance etc and this figure is the current status. Audit figures are for the financial year April 2018 – March 2019. I will report figures from April 2019 – December 2019 next year to avoid double counting and then report by calendar year going forwards.

We recognise that this table has been difficult for some boroughs to complete, either because planning data is not collected or not collected in a form that is easily translatable into the table. The purpose of each row in the table is to assess implementation of GLA planning or policies. An additional column has been added for notes where you can note any qualifications to the data or local policies that are relevant (e.g. use of standard conditions).

Notes on the table:

a. The purpose of this row is to identify whether all applications that are submitted with an air quality assessment or EIA are checked by the air quality officer/team. The requirement to submit an assessment is subject to local validation criteria, however the new London Plan specifies that all major developments should be accompanied by an assessment, so this should equal at least the number of major applications received once the new London Plan is finalised.

b. The purpose of this row is to understand how widely active dust monitoring is used on construction sites. Dust monitoring is recommended in the GLA Control of Dust and Emissions during Construction and Demolition SPG for some high-risk sites. This number should include all sites where monitoring is required by condition or secured as part of a construction management plan or similar.

c. This purpose of this row is to understand how far air quality policies are influencing the design or choice of communal heating systems. For the purposes of recording, “refused” should include applications where air quality impacts from the heating system are included in the reasons for formal refusal and applications where the energy strategy has been revised post-submission to remove CHP or biomass as a result of air quality concerns raised during the decision-making process.

d. The purpose of this row is to ensure that the emissions limits for CHP and Biomass set out in Appendix 7 of the GLA Sustainable Design and Construction SPG are implemented. You should only count instances where compliance with these limits (or tighter limits, if

required) have been secured by condition. You may want to note instances where conditions have not been imposed in the notes column.

e. This row should record the number of planning permissions where use of ultra-low NO_x boilers were required as a direct condition or as a condition securing conformity with submitted documents, not the total number of boilers. Where standard conditions are used it is sufficient to say all developments, or all developments that meet a particular threshold (or however the decision to use standard conditions is done.)

f. The purpose of this row is to identify how well applicants are implementing the requirement to undertake an air quality neutral assessment as part of the overall air quality assessment for developments.

g. This row is intended to identify how challenging it is for developers to meet air quality neutral and should count the number of applications where the initial air quality neutral calculation showed the benchmarks were not met and additional on-site mitigation measures were agreed with the developer prior to grant of consent.

h. These rows should be used to record the number of developments where payments of off-site measures were secured from the developments. This could be measures in lieu of meeting Air Quality Neutral on-site or other actions and payments relating to local policies or needs. It is not necessary to provide the amount of financial contributions.

i. These rows should record the number of planning permissions where compliance with the NRMM LEZ is required as a direct condition or as a condition securing conformity a code of practice or a CMS requiring compliance. Where standard conditions are used it is sufficient to say all developments, or all developments that meet a particular threshold (or however the decision to use standard conditions is done.)

If possible (this is not mandatory, but would be very much appreciated) please briefly describe the processes you have in place to ensure that all relevant planning applications are reviewed and any air quality conditions, including NRMM conditions, are enforced.

On receipt of a planning application, the case officer decides if input from environmental health is required, generally, environmental health are consulted on all major and mixed use developments and applications for CHP. The environmental health team use a standard checklist for major and mixed use developments which includes a prompt on air quality assessments and a link to the relevant guidance for consideration. Where an application is accompanied by an air quality assessment, this is assessed and appropriate comments and where necessary conditions are recommended. In cases where an air quality assessment is not provided and it is considered there should be, the applicant is requested to provide one. Any non-compliance with planning conditions is enforced by the planning enforcement

team through the usual process in line with the Council's enforcement policy. This would normally be in response to a complaint. The Council adopted a Code of Construction Practice on the 1st September 2016 which includes a requirement for all sites to which the Code applies to comply with NRMM requirements. This is assessed by environmental health officers as part of our NRMM audit programme.

3.1 New or significantly changed industrial or other sources

The City Council have recently been consulted by the Environment Agency for a permit at Imperial College, Exhibition Road, SW7 2AZ. The application is for CHP, standby generators and boilers. Part of the site falls within the City of Westminster and part of the site falls within Kensington and Chelsea.

Appendix A Details of Monitoring Site QA/QC

A.1 Automatic Monitoring Sites

Horseferry Road and Marylebone Road monitoring sites are AURN sites and therefore have AURN QA/QC procedures. For all other sites monitoring data is collected, validated and ratified by ERG, King's College London. QA/QC procedures are similar to those of the AURN network. Calibrations are carried out by a City of Westminster Local Site Operator on a fortnightly/monthly schedule, depending on the site type.

PM_{10} Monitoring Adjustment

TEOM data has been adjusted using the volatile correction method (VCM).

BAM PM_{10} – adjusted with a reciprocal of slope of 1.2.

Smart Heated BAM PM_{10} – adjusted with a reciprocal of slope of 1.035.

Smart Heated BAM $PM_{2.5}$ – no adjustment required.

A.2 Diffusion Tube Quality Assurance / Quality Control

As we do not currently have a borough wide diffusion tube programme in place I have not provided information on this question.

A.3 Adjustments to the Ratified Monitoring Data

Short-term to Long-term Data Adjustment

Nitrogen Dioxide

The monitoring site at Oxford Street East began operation on 5 June 2018 on the and its annual data capture was 54%. Therefore the mean has been annualised using the methodology outlined in LLAQM.TG(16) before being compared to annual mean objectives.

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

Site	Site Type	Annual Mean (µg/m^3)	Period Mean (µg/m^3)	Ratio
Horseferry Road	Urban Background	36	29.6	1.22
Bloomsbury	Urban Background	36	32	1.13
Sir John Cass	Urban Background	32	31	1.03
Streatham Green	Urban Background	34	32	1.06
			Average	1.11

Calculation = Measured mean of 68 x 1.11 = 75.48

The monitoring site at Cavendish Square began operation on 31 May 2018 on the and its annual data capture was 57%. Therefore the mean has been annualised using the methodology outlined in LLAQM.TG(16) before being compared to annual mean objectives.

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

Site	Site Type	Annual Mean (µg/m^3)	Period Mean (µg/m^3)	Ratio
Horseferry Road	Urban Background	36	29.1	1.24

Site	Site Type	Annual Mean (µg/m³)	Period Mean (µg/m³)	Ratio
Bloomsbury	Urban Background	36	31.8	1.13
Sir John Cass	Urban Background	32	30.5	1.05
Streatham Green	Urban Background	34	31.3	1.09
			Average	1.13

Calculation = Measured mean of 57 x 1.13 = 64.41

Particulate Matter

The monitoring site at Oxford Street East began operation 5 June 2018 on the and its annual data capture was 50%. Therefore the mean has been annualised using the methodology outlined in LLAQM.TG(16) before being compared to annual mean objectives.

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

Site	Site Type	Annual Mean (µg/m³)	Period Mean (µg/m³)	Ratio
Horseferry Road	Urban Background	17	15.7	1.08
Bloomsbury	Urban Background	17	15.1	1.13
Sir John Cass	Urban Background	21	20.6	1.02
Streatham Green	Urban Background	20	17.8	1.12
			Average	1.09

Calculation = Measured mean of 26 x 1.09= 28.34

The monitoring site at Cavendish Square began operation on 31 May 2018 on the and its annual data capture was 58%. Therefore the mean has been annualised using the methodology outlined in LLAQM.TG(16) before being compared to annual mean objectives.

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

Site	Site Type	Annual Mean (µg/m³)	Period Mean (µg/m³)	Ratio
Horseferry Road	Urban Background	17	15.8	1.08
Bloomsbury	Urban Background	17	15.3	1.11
Sir John Cass	Urban Background	21	20.7	1.01
Streatham Green	Urban Background	20	18.0	1.11
			Average	1.08

Calculation = Measured mean of 26 x 1.08 = 28.08

The monitoring site at Oxford Street (Selfridges) began operation on 15 May 2018 on the and its annual data capture was 42%. Therefore the mean has been annualised using the methodology outlined in LLAQM.TG(16) before being compared to annual mean objectives.

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

Site	Site Type	Annual Mean (µg/m³)	Period Mean (µg/m³)	Ratio
Horseferry Road	Urban Background	17	16.6	1.02
Bloomsbury	Urban Background	17	16.1	1.06
Sir John Cass	Urban Background	21	21.4	0.98
Streatham Green	Urban Background	20	19	1.05

Site	Site Type	Annual Mean ($\mu g/m^3$)	Period Mean ($\mu g/m^3$)	Ratio
			Average	1.03

Calculation = Measured mean of 27 x 1.03 = 27.81