

London Borough of Barnet Air Quality Annual Status Report **Report for 2019**

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(La Deliverance- Finchley)

This report provides a detailed overview of air quality in the London Borough of Barnet during 2019. It has been produced to meet the requirements of the London Local Air Quality Management statutory process¹.

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¹ LLAQM Policy and Technical Guidance 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	Date¹
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

1. Air Quality Monitoring

1.1 Locations

Table B. Details of Automatic Monitoring Sites for 2019

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
ABN1	Tally Ho	526344	192219	Kerbside	Y	5	0.5	3	NO ₂ , PM10	Chemiluminescent; TEOM
ABN2	Chalgrove School	524374	189642	Urban Background	Y	0	N/A	2.5	NO ₂ , PM10	Chemiluminescent; TEOM

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

Site ID:	Site Name	Site Type	OS Grid Ref	Pollutants Monitored	In AQMA?	Distance from monitoring site to relevant Exposure (m)	Distance to kerb of nearest road (N/A if not applicable) (m)	Inlet Height	Tube co-located with an automatic monitor (Y/N)
PBN1	1 Pointalls Close	Roadside	X526278 Y190444	NO ₂	Y	6	13	2.5	N
PBN2	71 Ballards Lane	Urban Centre	X525410	NO ₂	Y	0	4	2.5	N

			Y190980						
PBN3	Sanders Lane Allotments	Urban background	X523754 Y191588	NO ₂	Y	N/A	N/A	2.0	N
PBN5	St James Catholic High School	Urban background	X521885 Y190489	NO ₂	Y	5	2	2.5	N
PBN6	347 Hendon Way	Roadside	X523127 Y188183	NO ₂	Y	10	1.0	2.5	N
PBN8	Tally Ho monitoring station	Urban Centre	X526346 Y192224	NO ₂	Y	5	0.5	2.5	Y
PBN9	52 Golders Green Road	Urban Centre	X524965 Y187505	NO ₂	Y	0	5	2.5	N
PBN10	High Street, Barnet	Urban Centre	X524496 Y196615	NO ₂	Y	0	3	2.5	N
PBN12	1295 High Road Whetstone	Urban Centre	X526381 Y194059	NO ₂	Y	0	10	2.5	N
PBN13	Courtland Avenue, A1	Roadside	X520968 Y193457	NO ₂	Y	6	22	2.5	N
PBN14	William Hill, Station Road Edgware	Urban Centre	X519497 Y192075	NO ₂	Y	0	5	2.5	N
PBN17	National Express Bus Stop, Golders Green Bus Station	Bus station	X525207 Y187425	NO ₂	Y	0	N/A	2.5	N
PBN18	Rear of Golders Green Bus Station	Bus station	X525278 Y187444	NO ₂	Y	0 ¹	N/A	2.0	N
PBN19	Rear of 7-12 Dyson Court, Tilling Road	Roadside	X523348 Y187589	NO ₂	Y	0 (façade of residential building)	10	2.5	N
PBN20	Flats above 16 Cricklewood Lane	Urban Centre	X523885 Y185764	NO ₂	Y	0 (façade of residential building)	6	6	N

1.2 Comparison of Monitoring Results with Air Quality Objectives

The following table shows the monitoring results in 2019 and compares them with the Air Quality Objectives. Exceedances of the nitrogen dioxide (NO₂) annual mean Air Quality Objective of 40µgm⁻³ are shown in bold. NO₂ annual means in excess of 60µgm⁻³, indicating a potential exceedance of the NO₂ hourly mean objective are shown in bold and underlined. 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 NO₂ 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 ^{cde}
ABN1	Automatic	96.85	96.85	49.3	57	46.2	38.8	50	35.9	38
ABN2	Automatic	93.37	93.37	32	27	23	28	29	27	25
PBN1	Diffusion tube	100	100	42.2	52.5	37.1	38.9	34.9	36.8	31.4
PBN2	Diffusion tube	92	92	52.5	50.0	43.7	46.7	40.5	39.8	35
PBN3	Diffusion tube	75	75	24.1	27.3	21.5	22.3	21.0	20.0	15.5
PBN5	Diffusion tube	58	58	31.6	33.2	27.9	30.5	27.7	28.8	25.1
PBN6	Diffusion tube	100	100	50.5	50.7	41.7	50.6	49.5	41.4	37.5
PBN8	Diffusion tube	67	67	46.7	49.6	41.7	45.1	41.25	37.7	37.1
PBN9	Diffusion tube	100	100	56	51.9	48.4	53.5	43.8	43.5	39.9
PBN10	Diffusion tube	100	100	51	53.8	51.0	55.7	51.1	44.0	38.6
PBN12	Diffusion tube	67	67	53	52.4	47.0	50.8	46.3	39.0	39.1
PBN13	Diffusion tube	75	75	37.3	37.6	36.7	34.2	30.1	29.3	27.4
PBN14	Diffusion tube	83	83	58.9	56.5	55.7	54.7	50.9	50.4	41.6
PBN17	Diffusion tube	100	100	<u>80.9</u>	<u>78.4</u>	<u>64.5</u>	58.4	50.8	46.8	38.9

Site ID	Site type	Valid data capture for monitoring period % ^a	Valid data capture 2019 % ^b	Annual Mean Concentration ($\mu\text{g m}^{-3}$)						
				2013 ^c	2014 ^c	2015 ^c	2016 ^c	2017 ^c	2018 ^c	2019 ^{cde}
PBN18	Diffusion tube	100	100	55.6	54.5	51.8	50.3	50.4	40.3	37.5
PBN19	Diffusion tube	100	100	55.5	54.8	52.3	52.2	49.1	47.2	41.6
PBN20	Diffusion tube	100	100	57.1	<u>62.3</u>	54.6	55.3		43.1	38.7

Notes: Exceedance of the NO₂ annual mean AQO of 40 $\mu\text{g m}^{-3}$ are shown in **bold**.

NO₂ annual means in excess of 60 $\mu\text{g m}^{-3}$, indicating a potential exceedance of the NO₂ 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 were "annualised" in accordance with LLAQM Technical Guidance, where valid data capture was less than 75%. Process is described in Appendix A.3.

d Means were distance corrected to a location of relevant public exposure; details are in Appendix A.3.

e Results prior to annualization and distance correction are in Appendix B.

The 7-year trend for Nitrogen Dioxide concentrations is presented below and shows a gradual yearly reduction which is significant over time.

Figure A: Seven-year trend for Nitrogen Dioxide concentrations

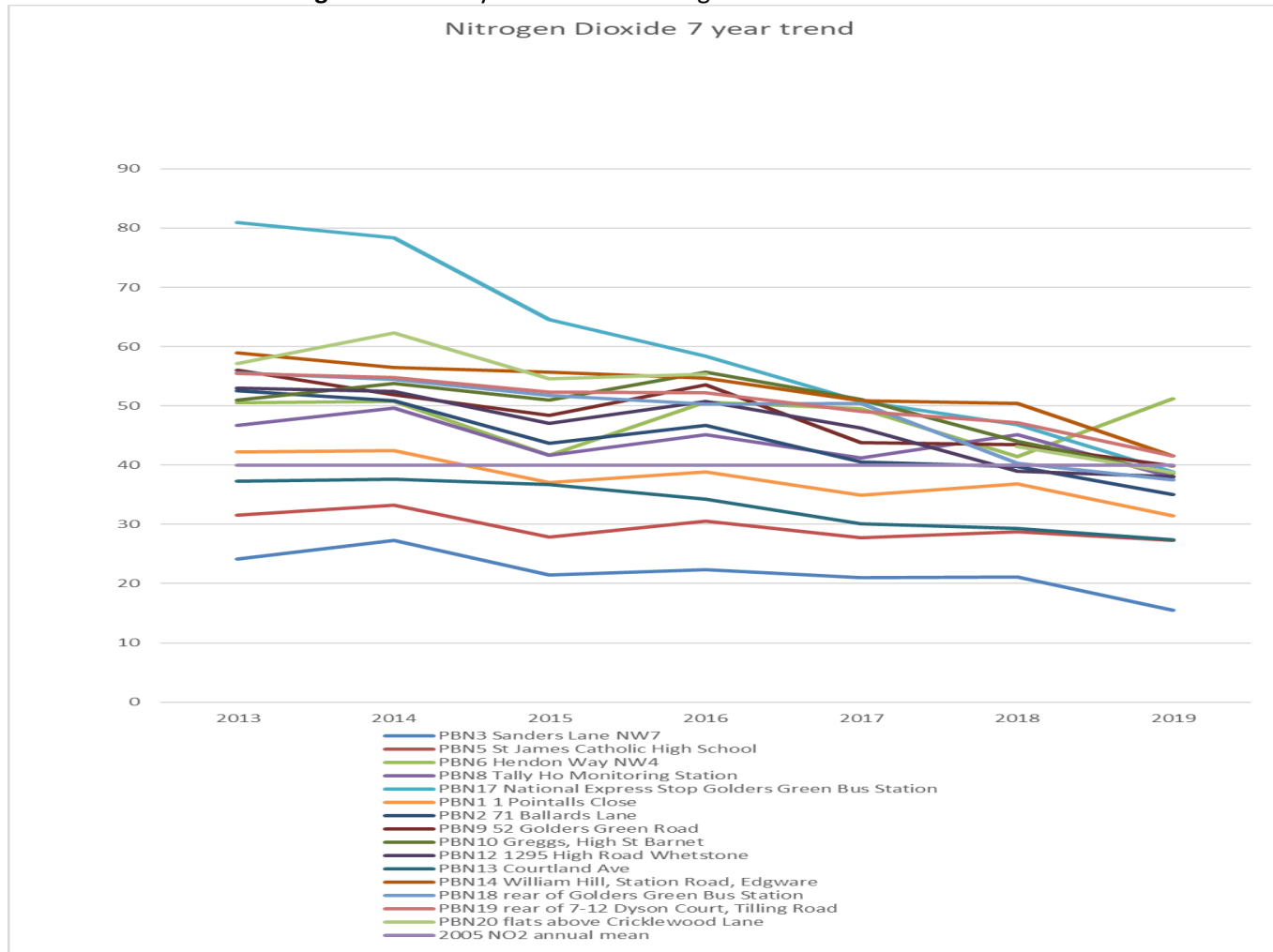


Table E. NO₂ Automatic Monitor Results: Comparison with 1-hour Mean Objective

Site ID	Valid data capture for monitoring period % ^a	Valid data capture 2019 % ^b	Number of Hourly Means > 200 µg m ⁻³						
			2013	2014	2015	2016	2017	2018	2019
ABN1	96.85	96.85	5	9 (182)	9 (136)	0	1	0	0
ABN2	93.37	93.37	0	0 (115)	0 (92)	0	1	0	0

Notes: Exceedance of the NO₂ 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%)

Table E illustrates that there were no exceedances of the 200µg/m³ hourly mean National Air Quality Objective for NO₂ recorded at either automatic monitoring site in 2019.

Table F. Annual Mean PM₁₀ 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	2014	2015	2016	2017	2018	2019
ABN1	92.44	92.44	27	26	22	23	21.29	21	20
ABN2	92.32	92.32	19	20	18	18	18	17	17

Notes: Exceedance of the PM₁₀ 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%)

Table F illustrates that the annual mean concentration of PM₁₀ at both monitoring sites remains below the objective. There is a gradual yearly decrease in PM₁₀ for the sites over the last 7 years well below the annual mean. The roadside Tally Ho site did regularly exceed the annual mean over 10-15 years ago. We are considering whether due to these results and new objectives for PM_{2.5} whether further monitoring is necessary.

Table G. 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	2014	2015	2016	2017	2018	2019
ABN1	92.44	92.44	5	6	6	4 (35)	6 (32)	1	4
ABN2	92.32	92.32	0	0	3	3	4 (29)	1	3

Notes: Exceedance of the PM₁₀ 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.

^adata capture for the monitoring period, in cases where monitoring was only carried out for part of the year

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

Table G illustrates that the levels of PM₁₀ at both monitoring sites continue to comply with the daily mean objective.

This trend seems to gradually decrease but fluctuate depending on air pollution episodes which are usually due to weather especially prolonged periods of low wind foggy/conditions.

Discussion of data trends

Last year's report stated that most sites were showing a large reduction in NO₂ levels. In 2019, the general trend to decreasing NO₂ levels has continued. There were significant decreases in NO₂ levels at Hendon Way (A41), Pointalls Close (on the A406), 71 Ballards Lane, Sanders Lane Allotments, St. James School, 52 Golders Green Road, High Street Barnet, Station Road Edgware, Golders Green Bus Station, Tilling Road (A406 near Brent Cross) and Cricklewood Lane. Other sites have shown a levelling off in the reduction of NO₂ –1295 High Street Whetstone, Tally Ho and Courtland Avenue (A1). Two sites continue to exceed the annual mean objective. These include the Station Road Edgware(41.6µg/m³) and Tilling Road (41.6µg/m³).

Discussion of data trends – detail

Golders Green Bus Station

Levels of nitrogen dioxide have reduced considerably at the bus station. The tube to the rear of the station showed a 3µg/m³ decrease. The tube is close to standard buses and the result is probably a reflection of the newer, cleaner buses in the fleet. The tube close to the National Express bus stop has shown an 8µg/m³ decrease to 38.9 µg/m³. Coaches using this station are likely to continue into London Victoria and will be required to have the cleanest engines. The hourly mean is being comfortably met and the Air Quality Management Area for nitrogen dioxide measured as an hourly mean could be revoked.

High Street Locations

Nitrogen dioxide concentrations have continued to decrease in Ballards Lane, Finchley, and are now meeting the UK Air Quality objective. In North Finchley, there has been a large reduction in nitrogen dioxide. In Golders Green the downward trend in NO₂ levels continues and is now 39.9µg/m³. In High St Barnet (PBN10), there has been a large reduction in NO₂ to 38.6µg/m³. The most polluted High St measured in 2019 was Edgware with a concentration of 41.6 µg/m³, but better than last year. Edgware has a taxi rank in the middle of the road and a high proportion of buses.

The annual mean continues to be exceeded in one out of five of the High Street locations monitored.

The improvements in air quality can probably be explained by cleaner engines. Also due to the fact that the Council uses the planning system where it can to ensure that new residential developments in High Streets employ mitigation for instance in the form of mechanical ventilation with air drawn in at height or to the rear of the building.

The hourly mean is being comfortably achieved at all High Street locations and the Air Quality Management Area for the hourly mean could be revoked.

Residential properties on major roads

Barnet has several major roads with residential properties along it. Tube 6 Hendon Way (A41) has shown a large reduction in nitrogen dioxide levels, coming down from 41.4µg/m³ in 2018 to 37.5µg/m³ in 2019. Tube 1 Pointalls Close and Tube 19 Dyson Court are both on the A406. Pointalls Close has shown a reduction in NO₂ levels, and Dyson Court is the worst location for residential exposure in Barnet, at 41.6 µg/m³ as opposed to 47.2µg/m³ back in 2018; Courtland Avenue (A1) has shown a further decrease in NO₂ levels, to 27.4µg/m³. This is probably not the worst affected residential property on the A1 in Barnet. There are limited options for improvements on these major routes. The traffic is of very high volumes, is often congested, and has a high proportion of HGVs. They are also roads administered by TfL.

2. Action to Improve Air Quality

2.1 Air Quality Action Plan Progress

Table J provides a brief summary of the London Borough of Barnet'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 and the new transport strategy in measure 19.1.

Table J. Delivery of Air Quality Action Plan Measures

Ref	Action	Lead	Performance measure / target and completion date	Link to other strategies / plans	Final year end comments
1	Minimise dust emissions from construction sites	Environmental Health and Planning	Number of complaints received. This is an ongoing statutory requirement – will continue for 2020-2021	LB Barnet SPD for Sustainable Design and Construction	Officers continue to respond to complaints of dust from construction sites and investigate and take appropriate action using the Environmental Protection Act 1990. In 2019 there were complaints about 21 sites. This figure includes dust from demolition and construction, as well as dust from industrial and commercial activities.
2	Enforce Non Road Mobile Machinery (NRMM) air quality policies	Environmental Health and Planning Enforcement	Number of enforcement inspections and enforcement actions Mayor's Air Quality Fund	SPD for Sustainable Design and Construction	North London NRMM Project finished on 31.03.2019. End of project report submitted to GLA. Project successfully raised awareness of construction machinery exhaust emissions; and reduced air pollution impact on residents. No enforcement action was taken – it was decided to take

			<p>project funded until March 2019.</p> <p>20 = Number of planning applications where NRMM condition is applied in 2019.</p>		<p>an educational approach. There was a significant increase in compliance with NRMM requirements over the course of the project.</p> <p>The project has continued in Barnet 2019-22 in the future led by the London Borough of Merton.</p> <p>Significant increase in mention of NRMM in Construction management plans in 2019.</p>
3	Enforce CHP (Combined Heat and Power) and biomass air quality policies	Environmental Health and Planning Council's Re:Fit Programme –	<p>Number of planning applications for CHP and biomass boilers; number of applications approved and refused</p> <p>Will continue in 2020/21</p> <p>13 Council Buildings:- depot, libraries town hall- reduce energy bills</p>	SPD for Sustainable Design and Construction	<p>Scientific Services dealt with 1044 planning applications in 2019. No applications were made for biomass boilers – the trend for these has vanished.</p> <p>3 applications were assessed for submission of details for CHP. This is reducing with air source heat pumps and PV solar power more popular.</p> <p>Approximately 3 applications had a planning condition applied to require dispersion modelling of a new CHP plant.</p> <p>All new CHP plant must comply with the Mayor's emissions requirement and the team ensure this through the planning process.</p> <p>2019 saw progress in Corporate scheme to improve energy efficiency in largest 13 council buildings.</p> <p>26% annual savings -5 year payback by promoting</p>

			save CO2 227 kg		renewable energy, fridge energy reduction etc and reduce NO2.
4	Enforce Air Quality Neutral policies and Monitor sustainable Travel Plans for developments	Environmental Health and Planning and Highways	Number of planning applications requiring an air quality assessment; number of applications refused on grounds of poor air quality Will continue in 2020/21	2016-2021 Performance indicator PITD03 Monitoring Travel Plans for Developments	Of the 1044 planning applications assessed by Scientific Services in 2019, approximately 175 will have required either an air quality report to be done, or air quality mitigation measures to be put in place. Approximately 7 applications were recommended for refusal by Scientific Services on grounds of insufficient evidence of how poor air quality would be mitigated.
5	Increase the planting of green barriers and vegetation	Highways and Green Spaces Andy Tipping	Will continue in 2020/21	L.B. Barnet Tree strategy Local plan	Barnet's Tree Policy is ground-breaking in England. Over 5 years, 900 trees are being planted each year. Continue to share information and data with Andy on where air quality hotspots and worst effected schools are. Using this data, 217 trees in 2019-20 were prioritised in areas that are urban heat islands / poor air quality and near schools. Including Friern Barnet Road, Colney Hatch Lane, Finchley Lane, Holders Hill Road, Station Road: West Hendon and Edgware, Brent Park Road, Brent Cross, Netherlands Road, Cat Hill Woodhouse Road.
6	Enforce Smoke Control Areas	Environmental Health	Number of complaints of smoke from	DRS Enforcement Policy	No notices have been served on smoky chimneys.

			chimneys; number of enforcement actions Will continue in 2020/21		The team received approximately 8 complaints about smoke from chimneys in 2019/20. This includes restaurants – charcoal grills and woodfired pizzas; but mainly allegations of the wrong fuels being burnt on home stoves.
7	Regularly brief Director of Public Health (DPH) on air quality issues in Barnet; what is being done, and what is needed.	Environmental Health and Public Health	Will continue in 2020/21	2015-2020 Joint Strategic Needs Assessment (JSNA). Health and Wellbeing Strategy 2016-2020	Work is underway to better link public health and air quality with the following initial ideas.: Investigate if PH data can be mapped to the air quality hot spots in Barnet, with an initial focus on Paediatric Asthma Mapping the GP practices with high levels of childhood asthma is currently underway. Potential to map Hospital admissions for asthma and COPD against air quality. Promotion of active travel (eg new staff health and wellbeing survey for travel to new offices)
8	Director of Public Health to sign off statutory Annual Status Reports	Environmental Health and Public Health	Will continue in 2020/21	2015-2020 Joint Strategic Needs Assessment (JSNA). Health and Wellbeing	Director of Public Health signed off the environment committee report in January 2019 and will approve and

	and all new Air Quality Action Plans			Strategy 2016-2020	sign off this Annual Status Report.
9	Encourage schools to join the TfL STARS accredited travel planning programme by providing information on the benefits to schools and supporting the implementation of such a programme	Highways (Safe and Sustainable Travel Team)	Will continue in 2020/21		<p>106 schools currently have an accredited travel plan. There are <u>approx. 176</u> schools in total in Barnet.</p> <p>In 2019, Barnet was the London Borough with the highest number of schools awarded STARS, with the number of Barnet Gold STARS exceeding the total number of Bronze, Silver and Gold STARS in all but 1 other borough.</p> <p>By participating in the School Travel Plan programme, the average percentage of pupils travelling to school by car in Barnet has significantly reduced the average percentage of pupils travelling to school by car in Barnet has significantly reduced.</p>
10	Air Quality Projects with Schools	Environmental Health and Highways (School Travel team)	Will continue in 2019/20		In 2019 two weeks of anti-idling events covering 12 schools were held in May/June to mark Walk to School Week and Clean Air Day. This was coupled with a poster competition in Barnet First A bespoke air-quality lesson was delivered to a group of science students at Christchurch College.
10.1	Air Quality Audits at Wessex Gardens and Tudor Primary School	Environmental Health, Highways, Heads at Schools			<p>Tudor School is putting the grant towards;</p> <p>-replacing gas valve and water heating boiler</p>

				<p>-replacing windows/window covering e.g. blinds</p> <p>- sheltered area</p> <p>-planting trees donated by Woodland Trust and other planting</p> <p>Wessex Gardens Primary is putting the grant towards greening the school playground; providing a shelter for parents to use instead of waiting in idling cars; and plants for classroom to improve indoor air quality.</p> <p>The school successfully applied for a Greener Cities grant to install a living green ivy screen on the boundary between the A41 and their playground.</p> <p>As part of the collaborative work, Barnet Highways carried out Speed and Volume counts on Wessex Gardens, pedestrian movement counts monitoring the pedestrian flows from both the Subways and the bus stop and consulted accident statistics for the last 5 years (of which there are none on Wessex Gardens).</p> <p>The next step is to contact TfL and ascertain the criteria for reducing/ amending the bus stop/cage and get their approval, as Hendon Way is a TfL road.</p> <p>Council gave £10,000 contribution to each school.</p>
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10.2	Schools Audits at other schools in poor air quality areas		Work will continue after Covid19 outbreak		<p>To start in 2019/2020. LIP allocation is for £5000 in 2019/20 for audits and £4000 in the following two years. LBB is committed to providing an extra £10,000 funding at one school to implement measures in 2019/20</p> <p>Contacted all top 10 NO2 exceeding schools not audited. Most were faith schools which were not interested in an air quality audit- PH team were contacting schools to do the audit work until COVID19 outbreak.</p>
10.3	Idling Projects	Environmental Health and Highways	No performance target but aiming for at least two weeks a year for anti-idling campaigns		<p>In 2019 two weeks of anti-idling events covering 12 schools were held in May/June to mark Walk to School Week and Clean Air Day. School Streets update: 5 schools close street at schools' access hours to reduce idling. To engage in Stars scheme schools used prioritised criteria for obesity, free school meals, AQ, safety and STARS engagement-</p>
11	Investigate joining North London Freight Consolidation Scheme	Environmental Health and Procurement	This was funded through the Mayor's Air Quality Fund Round Two (2016-2019)		<p>This action was completed in March 2018. Not feasible to join scheme.</p>

			Not continuing in 2018/19; however new procurement action to be developed		
11.1	Green procurement policies	Environmental Health and Procurement			<p>Barnet have regard to air quality / green procurement when preparing procurement requirements (as appropriate) with services, this is good practice procurement, we work with the procurement initiation document to support development of requirement with service.</p> <p>There is a review of social value delivery with the intention for LBB to have a policy developed - this will be a main driver for air quality aspects.</p> <p>A difficulty is the number of contracted out services. Services contracted out some years ago will not have had environmental considerations built in, and there is less scope to add them or influence them half way through.</p> <p>On the positive side, a requirement for contractors with fleet to be members of FORS is already considered and factored in as appropriate to contract requirement. HBPLaw have</p>

					<p>review contracts for construction requirements to include FORS and CLOC.</p> <p>The Transport Service team are aware of the requirement to operate the most efficient vehicles the budget permits and to maintain these appropriately.</p> <p>Procurement of new contracts to be delivered passed October 2021 will include Ultra Low Emission Zone (ULEZ) requirements. To be developed for 2020/21</p>
12	Maintain Bronze accreditation of the Fleet Operator Recognition Scheme (FORS) for the borough's own fleet	Street Based Services	Maintain Bronze accreditation	Travel Plan for Depot	Transport Services completed FORS audit in Oct'19 renewing the Bronze accreditation with next FORS audit is due by October 2020.
13	Investigate the possibility of increasing the number of hydrogen, electric, hybrid, bio-methane and other cleaner vehicles in the borough's fleet	Street Based Services and Procurement	Assess suitability of vehicle with alternative fuel in Council fleet.		<p>Electric van has been introduced to Grounds Maintenance fleet for a period of 6 months to assess suitability. Decision to replace current vehicles with EV will be subject to operational suitability and available funding.</p> <p>Funding to replace current life expired (Euro 5) with new cleaner (Euro 6) vehicles has been approved in Jan'20, with Council placing order for 30</p>

					refuse collection vehicles with electric bin lifts in 19/20. Number of other vehicles with Euro 6 emission standard as minimum are scheduled to be replaced in 2020/21.
14	Accelerate uptake of new Euro VI vehicles in borough fleet	Street Based Services and Procurement	All new vehicles purchased by L.B. Barnet will be Euro VI, going forward.		Council completed procurement of 42 Refuse collection vehicles in 2019/20 with 12 vehicles are expected to be delivered in Q1 and remaining 30 in Q3 of 2020/21. Procurement of further vehicles with Euro6 emission standard will commence in Q2 of 2020/21.
15	Safer Urban Driver Training for drivers of vehicles in Borough's fleet i.e. through training of fuel efficient driving and providing regular re-training of staff. This was introduced in 2012 with training from the Energy Savings Trust.	Street Based Services	Aim to arrange Smarter Driver training for 50 drivers by end of December 2016 and on-going 100% of drivers to receive training		Funding for Safer Urban Driving training was secured and two courses offered to the drivers of Council Vehicles. We have funded 4 Safer Urban Driving courses to non-Barnet Council fleets (Donoghue and Sheas) in the borough. Each course can take 24 drivers, however all of the non-Barnet fleet courses have been postponed due to Covid-19. They were due to take place towards the end of March.

16	Control air pollution from industrial / commercial and residential sources	Environmental Health	Regional Enterprise Regulatory Services KPI EH02(LAPPC) for annual 100% inspection of medium and high risk rated premises. Will continue for 2020/21	Statutory Requirement – Environmental Permitting Regulations	All inspections were completed for KPI - which met target 2019-20.
17	Monitor air quality	Environmental Health	Air Quality Monitoring data Will continue in 2020-21		Continue to monitor air quality at two monitoring stations. Tally Ho requires fortnightly calibrations by Environmental Health and Chalgrove monthly. In addition, 15 diffusion tubes are exchanged and sent for analysis each month.
18	Explore the option of extending the Ultra Low Emission Zone (currently proposed to stop at the A406) to cover whole of London Borough of Barnet	TfL, Highways and Environmental Health	ULEZ consultation has finished		Action now completed

18.1	Briefing members; Publicise ULEZ to residents; consider and plan for consequences of ULEZ		ULEZ extension to North Circular is planned for 25.10.2021		Members were briefed as part of the Environment Committee Report in January 2018 and September 2019. Further work will be needed to publicise the ULEZ to residents.
19	Lower the legal speed limit to 20mph in areas close to certain schools	Highways	Target is 2km per year Will continue in 2019/20	Local Implementation Plan; Transport Strategy	At end Dec 2019 there were approx. 43.7km of 20mph in Barnet in total. This is an increase of 10.1km on the end Sept 2018 figure included in the previous report and an increase of 4.4km in 12 months from end Dec 2018 (when the total was 39.3km).
19.1 New measure	Draft long-term Transport Strategy	Corporate Highways led	In consultation winter 2019 and 2020	Transport strategy for 2041	Proposed measures include: Public realm and placemaking improving Barnet's streets Achievement of the TFL 72% sustainable travel target Shared mobility:-Car clubs Public Transport -Park and ride facilities in North Barnet/Hertfordshire Future shape of the Barnet bus network Express bus services & BRT M25 M1 A1 A406 Reducing congestion Edgware town centre and buses

					<p>Missing links in the rail network to connect up east and west travel.</p> <p>Gaps in the existing rail catchments within Barnet</p> <p>Moorgate – Hertford line</p> <p>Low Traffic Neighbourhoods</p> <p>Decarbonising transport-parking and freight strategy</p> <p>Areas to concentrate on: Brent Cross, Brent cross West, A5, North Finchley and East of borough without Crossrail2</p>
20	Differential charges for residential parking permits based on pollutant emissions	Highways (Parking)	We have implemented emissions based parking permits in 2015-16 and will constantly review our pricing strategy to reflect national, regional and local policies.		Complete. No further change.
21	Improvement of electric vehicle charging point infrastructure	Highways, planning	<p>100 new points in next 3 years (2016-2019)</p> <p>£400K was awarded in 2017 to improve EV infrastructure</p>	Transport strategy	<p>In 2018:- 40 lamppost chargers were installed with a further 40 to be installed. Another £290K for 7.5V charging points has been allocated.</p> <p>2019 update: A total of 76 Lamp column mounted EV chargers have been installed and are operational. In addition to this a further 22</p>

					Free Standing Chargers are installed and operational in various car parks and at two leisure centres. There is further funding allocated to increasing this current infrastructure during this calendar year to include a Rapid Charger (50Kw) and two EV Hub Sites (multiple 7Kw chargers) and also further additional residential roadside chargers.
22	Increase provision of cycle parking	Highways	Number of cycle spaces installed. Target of between 50-100 extra cycle spaces per annum		<p>There was over 10 new developments with cycle rack installation proposed funded through S.106</p> <p>In the financial year 2019-20 we received £40,189 of TfL funding for school's cycle parking. This amount was distributed to 12 schools. These schools said they would install 279 cycle parking spaces between them by March 2020</p>
23	Encourage modal shift to bicycle through improved bicycle routes and encourage a shift to walking by providing safer, more accessible and attractive pedestrian routes.	Highways	Total length of cycle routes provided. Regional Enterprise Highways PI HSTD02 target of 3 % of journeys by cycle in 2024 and HSTD01 % increase trips by walking from 29-	Transport strategy	<p>New 880m cycle/walking route called Brookside Walk, parallel to the A406. Soon there will be routes through Montrose and Silk stream Park. The Quietway Route is being worked on.</p> <p>Target to provide 5000 individuals with cycle training in 2019/2020.</p> <p>The Hope of Childs Hill (a not for profit organisation) http://thoch.org.uk/</p> <p>Does weekly cycle training. Received grants included from</p>

			31% by 2024		TfL. Trained 679 people last year.
24	<p>Liaise with Transport for London to explore traffic control actions on TfL-controlled roads</p> <p>Liaised with TFL over Barnet new transport strategy 2041.</p>		Monitoring a reduction in congestion and pollution concentrations		<p>TfL were liaised with in relation to potential measures on the A41 following the Wessex Gardens school audit.</p> <p>Ongoing meetings are held with TfL about the A5 corridor.</p> <p>Cleaner buses have been introduced on some routes covering Barnet.</p>
25	Liaise with the Highways Agency to explore options for improving air quality on the M1		Reduction in pollution concentrations and Noise	Transport strategy	<p>Meeting held on 06.03.2019 with Highways England.</p> <p>Discussed various options to improve air quality (barriers, a park-and-ride); current air quality grant funding. Further meetings held summer and winter 2019 in line with new transport strategy with park and ride proposal at Scratchwood services encouraging rapid bus transit on M1& A1.</p>
Action 26	Use Barnet website, Barnet First magazine, and other media to better disseminate air quality information	Environmental Health, Public Health Comms	Keep website up to date At least 2 press releases / articles per year		<p>Article has gone out in Barnet First to mark 2019 Clean Air Day. It gives information on the work being done on sustainable travel to school, and electric vehicle charging points, as well as providing a link to the Council Website.</p> <p>This was coupled with a poster competition in Barnet First.</p>

					<p>Article May/June 2020 about air quality since COVID19 lockdown and encourage composting rather than bonfires.</p> <p>Real time air pollution monitoring for 2 monitoring stations at Tally Ho N12 and Chalgrove School NW4:</p> <p>With real time -Low – High health banding from Air quality England website and health alerts for vulnerable residents.</p> <p>https://www.airqualityengland.co.uk/local-authority/?la_id=185</p> <p>This is accessed through Barnet web site</p> <p>https://www.barnet.gov.uk/environmental-problems/air-quality/air-quality-monitoring</p>
<p>Action 27</p> <p>New measure</p> <p>Improvements in Air quality focus areas to Create Healthy Town Centres</p>	<p>Improve public realm to reduce congestion in Finchley Central and High Barnet</p>	<p>Town Centre management team and Corporate with Parking Highways EH</p>	<p>Reduction in parking, congestion and Local Delivery services to reduce pollution and exposure.</p>	<p>Transport Strategy, Draft Chipping Barnet community plan, Healthy Streets Corridor Growth Strategy</p> <p>Future pipeline Golders Green and Chipping Barnet</p>	<p>Public Realm improvements</p> <p>A consultant team has been appointed by the Council to progress a public realm project in Finchley Central which was identified within the Finchley Central Town Centre Strategy. The Finchley Square project will see the creation of a new heart for the town centre. The design will be based upon the Healthy Street Approach. The project includes targets to increase greening, to encourage active travel, to reduce congestion and to engage people around air quality issues. As part of</p>

				<p>Including what the town centre strategy and community plan calls for Golders Green: Town Centre Strategy was adopted in January 2020. Currently scoping a Business Case for an initial project to move the Strategy into a delivery phase.</p> <p>Chipping Barnet, currently developing a Town Centre Strategy for the Town Centre aiming to take the Strategy for adoption in November committee 2020</p>	<p>the development of the proposals, event days will be held to promote the project and prototype use ideas for the square, including a 'Walk to your town centre' day, to align with Clean Air Day 2020.</p> <p>Healthy Streets Corridor Growth Strategy</p> <p>Barnet's emerging Local Plan and 2020-2030 Growth Strategy we are committed to delivering change the A598 and A1000 into a Healthy Streets Corridor. The regeneration team expected to start a feasibility study this year to explore this.</p> <p>Considered projects:</p> <p>Hosted public realm fund. A fund enabling businesses to temporarily place street furniture in parking spaces. More specifically, offering businesses with reduced seating capacity due to COVID the opportunity to mitigate the decrease in capacity by providing funding for parklets.</p> <p>Encourage local purchasing Collaborating with a Barnet Town Team to trial a localised e-commerce platform combined with a low-emissions delivery service. Promoting residents to shop locally, reducing freight miles, ensuring deliveries are done in a low-emissions manner, and enabling the consolidation of</p>
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					<p>deliveries between high street shops.</p> <p>Waste consolidation Collaboration with the Streetscape team, consolidating waste contracts of businesses and groups in Town Centres. Reducing the number of waste collection vehicles in Barnet's streets.</p> <p>Reduce freight emissions & last mile deliveries Investigating a consolidated, low-emissions delivery service using for example e-cargo bikes. Building this out to urban micro-consolidation platforms.</p> <p>Public realm charters As a Team, we are looking to establish Town Centre Public Realm Charters. The Charter will ensure all public realm delivered within the town centre is high-quality, accessible, healthy streets compliant and enduring. The Charter will create a pallet of finishes and furniture pallet, standard highways/public realm details, green infrastructure, horticultural specifications, cycle infrastructure etc.</p>
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3. Planning Update and Other New Sources of Emissions

Table K. Planning requirements met by planning applications in the London Borough of Barnet in 2019

Condition	Number
Number of planning applications where an air quality impact assessment was reviewed for air quality impacts	25
Number of planning applications required to monitor for construction dust	<u>20</u>
Number of CHPs/Biomass boilers refused on air quality grounds	<u>0</u>
Number of CHPs/Biomass boilers subject to GLA emissions limits and/or other restrictions to reduce emissions	<u>4</u>
Number of developments required to install Ultra-Low NO _x boilers	<u>5</u>
Number of developments where an AQ Neutral building and/or transport assessments undertaken	<u>22</u>
Number of developments where the AQ Neutral building and/or transport assessments not meeting the benchmark and so required to include additional mitigation	<u>4</u>
Number of planning applications with S106 agreements including other requirements to improve air quality	<u>1</u>
Number of planning applications with CIL payments that include a contribution to improve air quality	<u>1</u>
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.	60 sites registered 15 confirmed compliant None confirmed non-compliant

Applications are reviewed and any air quality conditions, including NRMM conditions, are enforced.

3.1 New or significantly changed industrial or other sources

No significant new or changed industrial (or other) sources of pollution have been identified.

Appendix A Details of Monitoring Site QA/QC

A.1 Automatic Monitoring Sites

ABN1 (Tally Ho) and ABN2 (Chalgrove School) are routinely calibrated, serviced and audited to ensure data is as accurate as possible. In 2019, the site audits and data management were carried out by Ricardo Energy and Environment to national standards and operational procedures defined by AURN. Site audits were carried out every six months and post audit the site data was then ratified. Routine calibrations take place bi-monthly for ABN1 and monthly for ABN2 by Barnet Scientific Officers. Servicing and maintenance are carried out bi-annually by an external contractor. Throughout 2019 the contractor for both sites was Matts Monitors and bi-annual servicing followed the Ricardo Energy and Environment audits.

PM₁₀ Monitoring Adjustment

No adjustments made to Particulate Matter monitoring data which is done by the TEOM method. The Volatile Correction Model (VCM) is applied to the PM₁₀ data from TEOM analyser at Tally Ho Corner and Chalgrove School. VCM allows you to correct TEOM measurements for the loss of volatile components of particulate matter that occur due to the high sampling temperatures employed by this instrument. The resulting corrected measurements have been demonstrated as equivalent to the gravimetric reference equivalent. The VCM works by using the volatile particulate matter measurements provided by nearby FDMS instruments (within 130 km) to assess the loss of PM₁₀ from the TEOM; this value is then added back onto the TEOM measurements. This correction is currently automatically applied to our data by airqualityengland.co.uk.

A.2 Diffusion Tube Quality Assurance / Quality Control

The diffusion tubes for NO₂ used in all London Borough of Barnet sampling are supplied and analysed by Gradko International Ltd (UKAS 2187) and conform to BS EN 13528 Parts 1-3: 2002/3.

All the tubes used are prepared using 50% TEA/Acetone and analysed using the UKAS accredited in house method (GLM 9), by continuous flow colorimetric analyser. Gradko participates in the WASP scheme (Workplace Analysis Scheme for Proficiency).

Using the most recent national bias adjustment data (Version 03/19), a bias adjustment factor of 0.87 has been applied to all of the diffusion tubes in the 2019 calendar year. For comparison in 2018, a bias adjustment factor of 0.92 was used. The relevant examples were selected using the spreadsheet workflow by using the same manufacturer, preparation method and similar site location type. A local bias adjustment was not used as there is only one tube co-located and not triplicate.

A.3 Adjustments to the Ratified Monitoring Data

Short-term to Long-term Data Adjustment

Where data capture is less than 75% of a full calendar year, the mean should be “annualised” – i.e. adjusted using the methodology outlined in LLAQM.TG(16) before being compared to annual mean objectives. Data capture at three monitoring sites was less than 75%, thus annualisation was required.

Results for Tally Ho, 1295 High Street and St. James School needed to be annualised as indicated in Table L below.

Datasets used in the Table L were gathered from the following websites:

London Borough of Barnet Monitoring Data

https://www.airqualityengland.co.uk/site/exceedence?site_id=BN2

London Haringey Priory Park South (HG4, an AURN site) Monitoring Data

https://www.airqualityengland.co.uk/site/exceedence?site_id=HG4

Two long-term, continuous monitoring sites, forming part of the national network were used (BN2, HG4). The data capture for each of these sites was > 85%. These sites are background sites and lie within a radius of about 50 miles.

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

-Tally Ho PBN8

Start Date	End Date	B1 (Chalgrove School)	B2 (Haringey Priory Park*)	D1/PBN8	B1 when D1/PBN8 is available	B2 when D1/PBN8 is available
27/12/2018	06/02/2019	45.07	30.50	53.08	45.07	30.50
06/02/2019	08/03/2019	42.50	34.80	60.38	42.50	34.80
08/03/2019	10/04/2019	23.60	20.30	46.88	23.60	20.30
10/04/2019	03/05/2019	23.00	23.50	41.35	23.00	23.50
03/05/2019	01/06/2019	18.04	15.70	38.22	18.04	15.70
01/06/2019	30/06/2019	17.10	13.70			
30/06/2019	16/07/2019	15.40	14.00			
16/07/2019	18/09/2019	17.90	14.20			
18/09/2019	07/10/2019	20.40	17.30	40.54	20.40	17.30
07/10/2019	12/11/2019	26.00	21.80	44.55	26.00	21.80
12/11/2019	02/12/2019	34.20	30.10			30.10
02/12/2019	10/01/2020	31.50	27.20	52.50	31.50	27.20
Average		26.23	22.00	47.19	28.76	24.58
Ratio R=Am/Pm		0.91	0.90			
Average of ratios Ra		0.90				
Ra is the annualisation factor						
Annualised data		42.63				
Bias adjusted annualised data		37.09				

-1295 High Street PBN12

Start Date	End Date	B1 (Chalgrove School)	B2 (Haringey Priory Park*)	D1/PBN12	B1 when D1/PBN12 is available	B2 when D1/PBN12 is available
27/12/2018	06/02/2019	45.07	30.5	46.85	45.07	30.5
06/02/2019	11/03/2019	42.5	34.8	54.07	42.5	34.8
11/03/2019	10/04/2019	23.6	20.3	44.13	23.6	20.3
10/04/2019	03/05/2019	23	23.5			
03/05/2019	01/06/2019	18.04	15.7	38.94	18.04	15.7
01/06/2019	30/06/2019	17.1	13.7	35.62	17.1	13.7
30/06/2019	16/07/2019	15.4	14	40.44	15.4	14
16/07/2019	18/09/2019	17.9	14.2			
18/09/2019	07/10/2019	20.4	17.3	44.02	20.4	17.3
07/10/2019	12/11/2019	26	21.8	45.89	26	21.8
12/11/2019	02/12/2019	34.2	30.1			
02/12/2019	10/01/2020	31.5	27.2			
Average		26.23	22	43.75	26.01	21.01
Ratio R=Am/Pm		1.008153	1.046996			
Average of ratios Ra		1.027574				
Ra is the annualisation factor						
Annualised data		44.95208				
Bias adjusted annualised data		39.10831				

-St. James School PBN5

Start Date	End Date	B1 (Chalgrove School)	B2 (Haringey Priory Park*)	D1/PBN5	B1 when D1/PBN5 is available	B2 when D1/PBN5 is available
27/12/2018	06/02/2019	45.07	30.5	38.36	45.07	30.5
06/02/2019	07/03/2019	42.5	34.8	41.04	42.5	34.8
07/03/2019	10/04/2019	23.6	20.3	27.98	23.6	20.3
10/04/2019	02/05/2019	23	23.5	30.77	23	23.5
02/05/2019	01/06/2019	18.04	15.7	23.12	18.04	15.7
01/06/2019	30/06/2019	17.1	13.7	25.51	17.1	13.7
30/06/2019	16/07/2019	15.4	14			
16/07/2019	18/09/2019	17.9	14.2			
18/09/2019	07/10/2019	20.4	17.3			
07/10/2019	12/11/2019	26	21.8			
12/11/2019	11/12/2019	34.2	30.1			
11/12/2019	10/01/2020	31.5	27.2	32.49	31.5	27.2
Average		26.23	22	31.33	28.69	23.67143
Ratio R=Am/Pm		0.914202	0.92939			
Average of ratios Ra		0.921796				
Ra is the annualisation factor						
Annualised data		28.87561				
Bias adjusted annualised data		25.12178				

National Bias Adjustment Factor

Using the most recent national bias adjustment data (Version 03/19), a bias adjustment factor of 0.87 has been applied to all of the diffusion tubes in the 2019 calendar year. Details are shown in Figure A below. The bias adjustment factor obtained from the LAQM Support Website at: https://laqm.defra.gov.uk/assets/Database_Diffusion_Tube_Bias_Factors_v03_20_FINAL.xlsx

Figure B. National bias adjustment factor

National Diffusion Tube Bias Adjustment Factor Spreadsheet							Spreadsheet Version Number: 03/20			
Follow the steps below in the correct order to show the results of relevant co-location studies							This spreadsheet will be updated at the end of June 2020			
Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods							Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet			
This spreadsheet will be updated every few months; the factors may therefore be subject to change. This should not discourage their immediate use.							LAQM Helpdesk Website			
The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECCOM and the National Physical Laboratory.					Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.					
Step 1:		Step 2:		Step 3:		Step 4:				
Select the Laboratory that Analyses Your Tubes from the Drop-Down List		Select a Preparation Method from the Drop-Down List		Select a Year from the Drop-Down List		Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor shown in blue at the foot of the final column.				
If a laboratory is not known, we have no data for this laboratory.		If a preparation method is not known, we have no data for this method at this laboratory.		If you do not know a year, we have no data.		If you have your own co-location study then see footnote 1. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@uk.bureauveritas.com or 0800 0327953				
Analysed By	Method	Year	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) ($\mu\text{g}/\text{m}^3$)	Automatic Monitor Mean Conc. (Cm) ($\mu\text{g}/\text{m}^3$)	Bias (B)	Tube Precision	Bias Adjustment Factor (A) ($\text{C}_{\text{m}}/\text{D}_{\text{m}}$)
Aberdeen Scientific Services	20% TEA in water	2019		Overall Factor* (6 studies)				Use	0.81	
Edinburgh Scientific Services	50% TEA in acetone	2019		Overall Factor* (1 study)				Use	0.87	
Glasgow Scientific Services	20% TEA in water	2019		Overall Factor* (4 studies)				Use	0.86	
Gradko	20% TEA in water	2019		Overall Factor* (27 studies)				Use	0.93	
Gradko	50% TEA in acetone	2019		Overall Factor* (8 studies)				Use	0.87	
Lambeth Scientific Services	50% TEA in acetone	2019		Overall Factor* (1 study)				Use	0.85	
Milton Keynes Council	20% TEA in water	2019		Overall Factor* (2 studies)				Use	0.84	
SOCOTEC Didcot	20% TEA in water	2019		Overall Factor* (6 studies)				Use	0.76	
SOCOTEC Didcot	50% TEA in acetone	2019		Overall Factor* (24 studies)				Use	0.75	
SOCOTEC Glasgow	20% TEA in water	2019		Overall Factor* (1 study)				Use	0.79	
SOCOTEC Glasgow	50% TEA in acetone	2019		Overall Factor* (1 study)				Use	0.75	
Somerset County Council	20% TEA in water	2019		Overall Factor* (2 studies)				Use	0.78	
South Yorkshire Air Quality Samplers	50% TEA in acetone	2019		Overall Factor* (1 studies)				Use	0.78	
Staffordshire Scientific Services	20% TEA in water	2019		Overall Factor* (17 studies)				Use	0.93	
Tagside Scientific Services	20% TEA in water	2019		Overall Factor* (1 study)				Use	0.80	
West Yorkshire Analytical Services	50% TEA in acetone	2019		Overall Factor* (3 studies)				Use	0.80	

Distance Correction

The following monitoring site recorded an exceedance, but was not representative of public exposure and so a distance correction was made, using the NO₂ “Fall-Off-With-Distance-Calculator” available at <https://laqm.defra.gov.uk/tools-monitoring-data/no2-falloff.html>

PBN6/347 Hendon Way (10m from relevant exposure; measurement made 1m from kerb; 21.75 µg m⁻³ local background annual mean) was adjusted from 51.2 µg m⁻³ to 37.5 µg m⁻³. Refer to Figure B.

Figure C. Distance-Corrected NO₂ Concentrations

The screenshot shows the 'NO2-Fall-Off-With-Distance-from-Roads-Calculator-v4.1 (2) - Compatibility Mode - Excel' interface. The calculator is embedded in a spreadsheet cell (C17). The interface includes the Bureau Veritas logo and the Air Quality Consultants logo. A red box highlights the input and result fields. The text 'Enter data into the red cells' is displayed above the input fields.

Step	Question	Value	Unit
Step 1	How far from the KERB was your measurement made (in metres)?	1	metres
Step 2	How far from the KERB is your receptor (in metres)?	10	metres
Step 3	What is the local annual mean background NO ₂ concentration (in µg/m ³)?	21.75	µg/m ³
Step 4	What is your measured annual mean NO ₂ concentration (in µg/m ³)?	51.2	µg/m ³
Result	The predicted annual mean NO ₂ concentration (in µg/m ³) at your receptor	37.5	µg/m ³

The calculator interface also includes a navigation bar at the bottom with tabs for 'Introduction', 'Limitations', 'Calculator', and 'Graphical Representation'. The 'Calculator' tab is currently selected.

Appendix B Full Monthly Diffusion Tube Results for 2019

Table M. NO₂ Diffusion Tube Results

Table M shows the diffusion tube results prior to annualisation. It shows the annual mean before and after a bias adjustment factor of 0.87 has been applied to the results. The adjustment factor was chosen using the Defra Spreadsheet version03/19:

https://laqm.defra.gov.uk/assets/Database_Diffusion_Tube_Bias_Factors_v03_20_FINAL.xlsx

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

^a 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%)

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

Site ID	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual Mean-raw data ^c	Max	Min	Valid Data Capture 2019 %	Annual mean – bias adjusted ^b
PBN 10 Greggs High St. Barnet	53.6 0	58.74	46.8 8	41.0 7	43.1 4	46.1 2	41.1 8	29.8 6	38.3 2	33.3 6	52.0 7	47.6 6	44.33	58.7410 8	29.86	100	38.6
PBN 12 1295 High St Whetstone	46.8 5	54.07	44.1 3		38.9 4	35.6 2	40.4 4		44.0 2	45.8 9			43.75	54.0682 2	35.62	67	38.1
PBN 8 Tally Ho Monitoring Stn.	53.0 8	60.38	46.8 8	41.3 5	38.2 2				40.5 4	44.5 5		52.5 0	47.19	60.3811 5	38.2202 5	67	41.1
PBN 1 Pointails Close N	37.3 6	56.66	31.5 9	42.3 3	24.8 5	32.3 4	28.1 7	34.2 6	28.1 9	29.1 4	48.0 9	40.6 7	36.14	56.66	24.8533 9	100	31.4
PBN 2 Ladbroke 71 Ballards Lane	46.7 5	47.67	39.6 8	42.2 4	29.9 5	36.3 1	36.2 3	32.2 6		37.5 8	47.8 9	46.3 7	40.27	47.8934 9	29.9539 3	92	35.0
PBN 3 Sanders Lane Allotment	24.8 1	34.12	20.9 0	22.8 8	7.78	7.22	8.13	14.0 7		20.9 3			17.87	34.12	7.22	75	15.5
PBN 13 1 Courtland Avenue	39.4 9	44.44	29.5 3			25.0 7	24.9 4	27.7 0	26.4 9	32.0 4	39.1 8	38.9 4	31.49	39.4915 5	24.9421 4	75	27.4
PBN 14 William Hill, Station Rd, Edgware	48.7 5	57.84		53.6 7	41.3 1	50.5 5	55.1 4	30.5 4	48.2 5	43.1 6		48.6 0	47.78	57.84	30.54	83	41.6
PBN 5 St. James School	38.3 6	41.04	27.9 8	30.7 7	23.1 2	25.5 1						32.4 9	31.33	41.04	23.1208 7	58	27.3
PBN 9 52 Golders Green Road	49.3 3	54.45	42.4 2	58.5 3	39.1 7	42.4 1	41.5 3	38.2 9	42.3 0	35.5 9	58.1 4	47.9 0	45.84	58.53	35.5882 9	100	39.9
PBN 17 Coach Stop at Golders Green Station	41.5 8	58.35	40.9 3	42.7 5	35.6 2	40.3 2	40.1 1	43.3 4	42.7 3	46.4 1	49.4 0	55.4 8	44.75	58.35	35.6227 8	100	38.9

Site ID	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual Mean-raw data ^c	Max	Min	Data Capture	Annual mean – bias adjusted ^b
PBN 18 Back of Golders Green Bus Station	47.30	50.58	40.82	32.68	33.55	34.56	41.23	44.66	42.66	36.67	58.14	54.96	43.15	58.14498	32.68	100	37.5
PBN 20 16 Cricklewood Lane	45.35	58.73	39.67	43.30	39.41	43.37	43.33	50.49	38.26	33.08	47.87	50.63	44.46	58.73	33.07922	100	38.7
PBN 19 Tilling Road Rear Of Dyson Court	55.39	75.60	47.12	47.85	41.89	37.6	43.11	36.52	45.66	42.77	49.46	50.63	47.80	75.60245	36.52	100	41.6
PBN 6 349 Hendon Way	60.92	75.60	57.87	54.61	53.77	58.13	63.24	58.22	55.49	32.03	64.52	72.01	58.87	75.6	32.02526	100	51.2