

London Borough of Enfield Air Quality Annual Status Report for 2022

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This report provides a detailed overview of air quality in the London Borough of Enfield during 2022. It has been produced to meet the requirements of the London Local Air Quality Management (LLAQM) statutory process¹.

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

Contents

Abbreviations	4
1. Air Quality Monitoring.....	6
1.1 Locations.....	6
1.2 Comparison of Monitoring Results with AQOs	9
2. Action to Improve Air Quality.....	17
2.1 Air Quality Action Plan Progress	17
3. Planning Update and Other New Sources of Emissions	22
3.1 New or significantly changed industrial or other sources	22
4. Additional Activities to Improve Air Quality	24
4.1 London Borough of [Borough Name] Fleet.....	24
4.2 NRMM Enforcement Project.....	24
4.2 Air Quality Alerts	24
Appendix A Details of Monitoring Site Quality QA/QC	24
A.1 Automatic Monitoring Sites.....	25
A.2 Diffusion Tubes	25
A.3 Adjustments to the Ratified Monitoring Data	26
Appendix B Full Monthly Diffusion Tube Results for 2022	27

Tables

Table A.	Summary of National Air Quality Standards and Objectives.....	5
Table B.	Details of Automatic Monitoring Sites for 2022	6
Table C.	Details of Non-Automatic Monitoring Sites for 2022	7
Table D.	Annual Mean NO ₂ Ratified and Bias-adjusted Monitoring Results	9
Table E.	NO ₂ Automatic Monitoring Results: Comparison with 1-hour Mean Objective, Number of 1-Hour Means > 200 µg m ⁻³ (If available. If not, this section can be deleted) 12	
Table F.	Annual Mean PM ₁₀ Automatic Monitoring Results (µg m ⁻³) (If available. If not, this section can be deleted).....	13
Table G.	PM ₁₀ Automatic Monitoring Results: Comparison with 24-Hour Mean Objective, Number of PM ₁₀ 24-Hour Means > 50 µg m ⁻³ (If available. If not, this section can be deleted)	14
Table H.	Annual Mean PM _{2.5} Automatic Monitoring Results (µg m ⁻³) (If available. If not, this section can be deleted).....	Error! Bookmark not defined.
Table I.	2022 SO ₂ Automatic Monitoring Results: Comparison with Objectives (If available. If not, this section can be deleted).....	Error! Bookmark not defined.
Table J.	Delivery of Air Quality Action Plan Measures	17
Table K.	Planning requirements met by planning applications in [Borough Name] in 2022 22	
Table L.	Bias Adjustment Factor	25
Table M.	NO ₂ Fall off With Distance Calculations.....	27
Table N.	NO ₂ Diffusion Tube Results.....	27

Abbreviations

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

Table A. Summary of National Air Quality Standards and Objectives

Pollutant	Standard / Objective (UK)	Averaging Period	Date ⁽¹⁾
Nitrogen dioxide (NO ₂)	200 µg m ⁻³ not to be exceeded more than 18 times a year	1-hour mean	31 Dec 2005
Nitrogen dioxide (NO ₂)	40 µg m ⁻³	Annual mean	31 Dec 2005
Particles (PM ₁₀)	50 µg m ⁻³ not to be exceeded more than 35 times a year	24-hour mean	31 Dec 2004
Particles (PM ₁₀)	40 µg m ⁻³	Annual mean	31 Dec 2004
Particles (PM _{2.5})	20 µg m ⁻³	Annual mean	2020
Particles (PM _{2.5})	Target of 15% reduction in concentration at urban background locations	3-year mean	Between 2010 and 2021
Sulphur dioxide (SO ₂)	266 µg m ⁻³ not to be exceeded more than 35 times a year	15-minute mean	31 Dec 2005
Sulphur dioxide (SO ₂)	350 µg m ⁻³ not to be exceeded more than 24 times a year	1-hour mean	31 Dec 2004
Sulphur dioxide (SO ₂)	125 µg m ⁻³ not to be exceeded more than 3 times a year	24-hour mean	31 Dec 2004

Notes:

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

1. Air Quality Monitoring

1.1 Locations

Table B. Details of Automatic Monitoring Sites for 2022

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA? If so, which AQMA?	Distance to Relevant Exposure (m)	Distance to Kerb of Nearest Road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Monitoring technique
ENF1	Bush Hill Park	533881	195831	Urban Background	Y	8	N/A	2.5	NO ₂	Chemiluminescent
ENF4	Derby Road	535056	192470	Roadside	Y	32	3	2.5	NO ₂	Chemiluminescent
ENF5	Bowes Road	529893	192224	Roadside	Y	1	3	2.5	NO ₂ , PM ₁₀	Chemiluminescent, FDMS
ENF7	Prince of Wales School	536886	198497	Urban Background	Y	4	N/A	1.5	NO ₂	Chemiluminescent

Table C. Details of Non-Automatic Monitoring Sites for 2022

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA? If so, which AQMA?	Distance to Relevant Exposure (m)	Distance to Kerb of Nearest Road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor. (Y/N)
Enfield 1	Enfield 1	533659	192376	<i>Urban background</i>	Y	5	7	2	NO ₂	N
Enfield 1A	Enfield 1A	532668	196555	<i>Kerbside</i>	Y	4	1	2.5	NO ₂	N
Enfield 2	Enfield 2	536634	196356	<i>Industrial</i>	Y	410	97	1.5	NO ₂	N
Enfield 2A	Enfield 2A	529753	194332	<i>Kerbside</i>	Y	5	1	2.5	NO ₂	N
Enfield 3	Enfield 3	533881	195832	<i>Urban background</i>	Y	4	8	1.5	NO ₂	N
Enfield 3A	Enfield 3A	531981	195305	<i>Roadside</i>	Y	10	1	2.5	NO ₂	N
Enfield 4	Enfield 4	530349	193283	<i>Urban background</i>	Y	6	6	2	NO ₂	N
Enfield 4A	Enfield 4A	530966	192714	<i>Roadside</i>	Y	5	1	2	NO ₂	N
Enfield 5	Enfield 5	535126	196295	<i>Urban background</i>	Y	5	1	2	NO ₂	N
Enfield 5A	Enfield 5A	534238	196314	<i>Roadside</i>	Y	15	1	2	NO ₂	N
Enfield 6	Enfield 6	526449	198404	<i>Urban background</i>	Y	1	8	2	NO ₂	N
Enfield 7	Enfield 7	535460	199849	<i>Roadside</i>	Y	10	20	1.5	NO ₂	N
Enfield 8	Enfield 8	535056	192470	<i>Roadside</i>	Y	6	2	1.5	NO ₂	Y
Enfield 8A	Enfield 8A	534195	192806	<i>Kerbside</i>	Y	7	1	2.5	NO ₂	N
Enfield 9	Enfield 9	529893	192224	<i>Roadside</i>	Y	1	3	2.5	NO ₂	Y
Enfield 9A	Enfield 9A	529945	192118	<i>Urban Background</i>	Y	1	5	1.5	NO ₂	N

Enfield 10	Enfield 10	530161	192032	Urban Background	Y	1	8	1.8	NO ₂	N
Enfield 11	Enfield 11	530448	193845	Roadside	Y	9	1	1.8	NO ₂	N
Enfield 12	Enfield 12	530374	193289	Roadside	Y	17	1	1.8	NO ₂	N
Enfield 13	Enfield 13	533201	192083	Roadside	Y	16	1	2	NO ₂	N
Enfield 14	Enfield 14	533304	192130	Roadside	Y	12	1	2	NO ₂	N
Enfield 15	Enfield 15	533322	192044	Roadside	Y	14	1	2	NO ₂	N
Enfield 16	Enfield 16	533684	191771	Roadside	Y	50	1	2	NO ₂	N
Enfield 17	Enfield 17	533766	192178	Roadside	Y	4	1	2	NO ₂	N
Enfield 18	Enfield 18	532165	192954	Roadside	Y	8	1	2	NO ₂	N
Enfield 19	Enfield 19	531878	192668	Roadside	Y	10	1	1.8	NO ₂	N
Enfield 20	Enfield 20	531173	192390	Roadside	Y	16	1	2	NO ₂	N
Enfield 21	Enfield 21	530968	192259	Roadside	Y	15	1	2.5	NO ₂	N

1.2 Comparison of Monitoring Results with AQOs

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

Table D. Annual Mean NO₂ Ratified and Bias-adjusted Monitoring Results

Site ID	Site type	Valid data capture for monitoring period % ^(a)	Valid data capture 2022 % ^(b)	2016	2017	2018	2019	2020	2021	2022
ENF1	Automatic	100	100	28	27	26	22	18	18	19
ENF4	Automatic	96	96	43	38	35	37	28	24	26
ENF5	Automatic	100	100	47	45	44	41	30	30	28
ENF7	Automatic	100	100	25	23	23	23	18	18	18
Enfield 1	Diffusion tube	N/A	N/A	32.3	32.4	N/A	N/A	N/A	N/A	N/A
Enfield 1A (Distance Corrected)	Diffusion tube	92	92	N/A	N/A	39.7	46.8	41	39	36.1
Enfield 2	Diffusion tube	N/A	N/A	27.5	30	N/A	N/A	N/A	N/A	N/A
Enfield 2A	Diffusion tube	100	100	N/A	N/A	37.5	37.1	30.8	32.2	28.8
Enfield 3	Diffusion tube	N/A	N/A	23.3	23.2	N/A	N/A	N/A	N/A	N/A
Enfield 3A	Diffusion tube	92	92	N/A	N/A	28.1	23.1	19.7	20.9	17.1
Enfield 4	Diffusion tube	N/A	N/A	19.2	20.8	N/A	N/A	N/A	N/A	N/A
Enfield 4A	Diffusion tube	100	100	N/A	N/A	30	30.1	27.6	26.3	22.2

Site ID	Site type	Valid data capture for monitoring period % ^(a)	Valid data capture 2022 % ^(b)	2016	2017	2018	2019	2020	2021	2022
Enfield 5	Diffusion tube	N/A	N/A	28	24.5	N/A	N/A	N/A	N/A	N/A
Enfield 5A	Diffusion tube	100	100	N/A	N/A	42.5	39.5	34	34.7	34.6
Enfield 6	Diffusion tube	92	92	17.6	19.1	19.7	14	13.2	12	11.9
Enfield 7	Diffusion tube	100	100	29	27.6	23.3	20.6	17.3	16	16.7
Enfield 8 (Distance Corrected)	Diffusion tube	N/A	N/A	N/A	35.6	N/A	N/A	N/A	N/A	N/A
Enfield 8A (Distance Corrected)	Diffusion tube	100	100	N/A	N/A	41.3	40.9	39.9	37.3	36.6
Enfield 9 (Distance Corrected)	Diffusion tube	N/A	N/A	40	N/A	N/A	N/A	N/A	N/A	N/A
Enfield 9A	Diffusion tube	100	100	N/A	N/A	26.6	24.3	18.6	19	17.3
Enfield 10	Diffusion tube	100	100	N/A	N/A	37.5	36.6	29.4	28.1	24.1
Enfield 11	Diffusion tube	92	92	N/A	N/A	N/A	N/A	N/A	17.7	17.6
Enfield 12	Diffusion tube	83	92	N/A	N/A	N/A	N/A	N/A	15.6	16.9
Enfield 13	Diffusion tube	100	100	N/A	N/A	N/A	N/A	N/A	28.1	22.5
Enfield 14	Diffusion tube	83	83	N/A	N/A	N/A	N/A	N/A	26.9	23.9
Enfield 15	Diffusion tube	100	100	N/A	N/A	N/A	N/A	N/A	33.2	26.3

Site ID	Site type	Valid data capture for monitoring period % ^(a)	Valid data capture 2022 % ^(b)	2016	2017	2018	2019	2020	2021	2022
Enfield 16	Diffusion tube	92	92	N/A	N/A	N/A	N/A	N/A	23.7	22
Enfield 17	Diffusion tube	100	100	N/A	N/A	N/A	N/A	N/A	33.9	28.8
Enfield 18	Diffusion tube	92	92	N/A	N/A	N/A	N/A	N/A	30.8	23.3
Enfield 19	Diffusion tube	100	100	N/A	N/A	N/A	N/A	N/A	27.5	21.1
Enfield 20	Diffusion tube	100	100	N/A	N/A	N/A	N/A	N/A	25.7	20.8
Enfield 21	Diffusion tube	100	100	N/A	N/A	N/A	N/A	N/A	28.8	27.3

Notes:

The annual mean concentrations are presented as $\mu\text{g m}^{-3}$.

Exceedances 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**.

Means for diffusion tubes have been corrected for bias.

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

Results have been distance corrected where applicable.

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

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

Table E. NO₂ Automatic Monitoring Results: Comparison with 1-hour Mean Objective, Number of 1-Hour Means > 200 µg m⁻³

Site ID	Valid data capture for monitoring period % ^(a)	Valid data capture 2022 % ^(b)	2016	2017	2018	2019	2020	2021	2022
ENF1	100	100	0	0	0	0	0	0	0
ENF4	96	96	1	0	0	0	0	0	0
ENF5	100	100	6	3	0	0	0	0	0
ENF7	100	100	0	0	0	0	0	0	0

Notes

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

Exceedance of the NO₂ short term AQO of 200 µg m⁻³ over the permitted 18 hours per year are shown in **bold**.

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

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

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

Table F. Annual Mean PM₁₀ Automatic Monitoring Results (µg m⁻³)

Site ID	Valid data capture for monitoring period % ^(a)	Valid data capture 2022 % ^(b)	2016	2017	2018	2019	2020	2021	2022
ENF5	85	85	22	24	18	19	15	15	18

Notes

The annual mean concentrations are presented as µg m⁻³.

Exceedances of the PM₁₀ annual mean AQO of 40 µg m⁻³ are shown in **bold**.

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

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

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

Table G. PM₁₀ Automatic Monitoring Results: Comparison with 24-Hour Mean Objective, Number of PM₁₀ 24-Hour Means > 50 µg m⁻³

Site ID	Valid data capture for monitoring period % ^(a)	Valid data capture 2022 % ^(b)	2016	2017	2018	2019	2020	2021	2022
ENF5	85	85	10	9	2	9	2	0	5

Notes

Exceedances of the PM₁₀ 24-hour mean objective (50 µg m⁻³ over the permitted 35 days per year) are shown in **bold**.

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

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

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

2. Action to Improve Air Quality

2.1 Air Quality Action Plan Progress

Table J provides a brief summary of the London Borough of Enfield’s progress against the Air Quality Action Plan, showing progress made this year. New projects which commenced in 2022 are shown at the bottom of the table.

Table J. Delivery of Air Quality Action Plan Measures

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;">Progress</p> <ul style="list-style-type: none"> • Emissions/Concentration data <ul style="list-style-type: none"> • Benefits • Negative impacts / Complaints
1	Monitoring and other core statutory duties	Continue to monitor air quality and ensure the network of monitoring sites is appropriate	<p>The number of automatic monitoring sites has been maintained, as have the passive sites. All the automatic data is available on the London Air website.</p> <p>The automatic monitoring sites and passive sites provide data for both background and roadside locations in the borough.</p>
2	Emissions from developments and buildings	Ensuring emissions from construction are minimised.	<p>100% of major development applications have had a construction management condition attached to them for the control of dust emissions.</p> <p>Where dust complaints are received in regard to dust from building sites all complaints are investigated by the Commercial Nuisance Officer. In 2022, 1 complaint relating to a major development was received.</p>
3	Emissions from developments and buildings	Ensuring enforcement of Non Road Mobile Machinery (NRMM) air quality policies	NRMM website to be inspected through the London-wide NRMM project. In 2022/23 there were 17 audits in the London Borough of Enfield, where 2 sites were non-

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;">Progress</p> <ul style="list-style-type: none"> • Emissions/Concentration data <ul style="list-style-type: none"> • Benefits • Negative impacts / Complaints
			<p>compliant because 1 site refused an unannounced inspection and the other had registration issues.</p> <p>100% of relevant planning applications include an appropriate NRMM planning condition.</p>
4	Emissions from developments and buildings	Reducing emissions from CHP	Where CHPs and biomass are proposed, planning conditions are applied. There have been no biomass applications in 2022 and any CHP was for gas-fired plant.
5	Emissions from developments and buildings	Enforcing Air Quality Neutral policies.	Air Quality Neutral is reviewed through Air Quality Assessments for planning applications. There were 2 assessments last year that were not air quality neutral due to transport emissions. Both were required to put in measures to reduce impacts, such as more electric charging points.
6	Emissions from developments and buildings	Ensuring adequate, appropriate, and well located green space and infrastructure is included in new developments.	Enfield aims to be internationally recognised as the greenest borough in London at the cornerstone of London's national park. The Blue Green Strategy has 7 aims to improve blue and green spaces within the borough.
7	Emissions from developments and buildings	Ensuring that Smoke Control Zones are appropriately identified and fully promoted and enforced	The whole borough is covered by Smoke Control Area Orders. 100% of complaints relating to smoke from a chimney serving a building in a smoke control area were investigated in 2022.
8	Emissions from developments and buildings	Promoting and delivering retrofit projects.	There is an ongoing programme of upgrades to corporate buildings, the current round of which is delivering interventions including insulation, heat pumps and solar PV to a number of sites, including the Civic Centre.

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;">Progress</p> <ul style="list-style-type: none"> • Emissions/Concentration data <ul style="list-style-type: none"> • Benefits • Negative impacts / Complaints
9	Emissions from developments and buildings	Master planning and redevelopment areas aligned with Air Quality Positive and Healthy Streets approaches.	The most recent adopted masterplans are for Enfield Town and Meridian Water. Both include elements of the Healthy Streets approach.
10	Emissions from developments and buildings	Carry out air quality assessments of the impact of the existing Low Emission Neighbourhoods and any future schemes.	There are currently 2 Low Emission Neighbourhoods and their impact is undergoing assessment.
11	Public health and awareness raising	Director of Public Health to sign off Statutory Annual Status Reports and all new Air Quality Action Plans.	This report will be sent to the Director of Public Health, as will future air quality reports.
12	Public health and awareness raising	Engagement with businesses	<p>The Climate Action Plan includes actions around engaging with businesses both as suppliers to the Council and as part of economic development work.</p> <p>A Sustainable and Ethical Procurement Policy is being developed which includes climate action requirements for suppliers.</p>
13	Public health and awareness raising	Promotion of availability of AirText	Enfield Council continues to be part of the AirText consortium.
14	Public health and awareness raising	Encourage schools to join the TfL STARS accredited travel planning programme	There are 47 schools engaged in STARS. 26 are gold, 5 are silver, 12 are bronze and 12 are working towards accreditation.
15	Public health and awareness raising	Implement School Streets in appropriate locations to improve air quality at schools	There are 14 Schools Streets with plans for a further 10 in 22/23.
16	Delivery servicing and freight	Reducing emissions by working with suppliers who are committed to switching to low or zero emission modes of transport	The draft Enfield Sustainable and Ethical procurement policy focusses on four main themes: social value, ethical procurement, supporting the local economy and climate action. Where relevant and proportionate, sustainable logistical measures may be required, dependant on the specific contracts being let.

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;">Progress</p> <ul style="list-style-type: none"> • Emissions/Concentration data <ul style="list-style-type: none"> • Benefits • Negative impacts / Complaints
17	Borough fleet actions	Reducing the emissions from the Council's fleet	60% fleet to be EV by 2025/26, 100% of vehicles to be EV by 2030 where appropriate models are available. Currently the fleet is 18% EVs.
18	Localised solutions	Green Infrastructure	
19	Localised solutions	Low Emission Neighbourhoods (LENs)	Currently there are two Quieter Neighbourhoods, the Fox Lane scheme and the Bowes scheme.
20	Cleaner transport	Discouraging unnecessary idling by taxis and other vehicles through anti-idling campaigns or enforcement activity	<p>The London-wide project came to an end in 2022, the Healthy Streets Team has good connections with schools and where schools are interested in running some form of anti-idling event we will provide assistance, where possible.</p> <p>No schools requested anti-idling events in 2022.</p>
21	Cleaner transport	Ensure that transport and air quality policies and projects are integrated	The link between air quality and transport policies has been established for many years in Enfield and this will continue to be the case going forward. This is achieved through regular meetings and joint working on projects such as school streets.
22	Cleaner transport	Regular Car Free Days	The Council support play streets which can be applied for usually on the basis of 1 day per month for a year, the council will cover the cost of 1 road closure per year linked to specific events (eg world car free day)
23	Cleaner transport	Installation of residential electric charge points	At the end of 2022 there were 106 electric charging devices with a total of 203 sockets.
24	Cleaner transport	Installation of rapid chargers to help enable the take up of electric taxis, cabs and commercial vehicles	At the end of 2022 there were 6 rapid chargers with 7 sockets.
25	Cleaner transport	Provision of infrastructure to support walking and cycling	The provision of cycling and walking infrastructure is ongoing. There are several large-scale plans which are dependent on funding being secured.
26	Localised solutions	Inspect authorised processes in line with the risk based approach	There were 62 inspections due in 2022 100% which were completed.

Measure	LLAQM Action Matrix Theme	Action	Progress <ul style="list-style-type: none"> • Emissions/Concentration data <ul style="list-style-type: none"> • Benefits • Negative impacts / Complaints
27	Localised solutions	Continued enforcement of the smoke nuisance provisions of the Environmental Protection Act 1990	There were 172 smoke complaints in 2022, 100% of which were investigated.

3. Planning Update and Other New Sources of Emissions

Table K. Planning requirements met by planning applications in the London Borough of Enfield in 2022

Condition	Number
Number of planning applications where an air quality impact assessment was reviewed for air quality impacts	26
Number of planning applications required to monitor for construction dust	<u>0</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>0</u>
Number of developments required to install Ultra-Low NO _x boilers	<u>0</u>
Number of developments where an AQ Neutral building and/or transport assessments undertaken	<u>26</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>2</u>
Number of planning applications with S106 agreements including other requirements to improve air quality	<u>0</u>
Number of planning applications with CIL payments that include a contribution to improve air quality	<u>0</u>
<p>NRMM: Greater London (excluding Central Activity Zone, Canary Wharf and Opportunity Areas)</p> <p>Number of conditions related to NRMM included.</p> <p>Number of developments registered and compliant.</p> <p>Number of audits</p> <p>% of sites unregistered prior to audit</p> <p>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.</p>	<p>67 conditions included</p> <p>17 sites registered</p> <p>12 compliant</p> <p>2 non-compliant</p> <p>1 no NRMM</p> <p>2 sites complete</p>

Development Management allocate all new relevant planning application consultations to Environment Health to comment on. Comments are made on all applications and where relevant, conditions for air quality (including NRMM) are requested to the Development Management Officer responsible for the application. Enforcement follows where air quality conditions are not discharged and development has begun or where the NRMM project Team (Enfield is part of the London-wide project) flag a non-compliance to us. All breaches of planning conditions are enforced through the Pollution Control & Planning Enforcement Team.

3.1 New or significantly changed industrial or other sources

No new sources identified.

4. Additional Activities to Improve Air Quality

4.1 London Borough of Enfield Fleet

The Council operates a fleet has 440 vehicles, 53 of which are electric. This equates to 12% of the overall fleet and 18% of Council-owned assets.

4.2 NRMM Enforcement Project

Enfield Council is continuing to support the NRMM Enforcement project in 2023-24.

4.2 Air Quality Alerts

Enfield Council is a member of the airTEXT consortium.

Appendix A Details of Monitoring Site Quality QA/QC

A.1 Automatic Monitoring Sites

All sites are calibrated every two weeks, LSO duties are performed in-house; audits take place every 6 months. The sites are audited by a contractor, NPL, who is engaged by the London Air Quality Network. Any issues raised at audit are fixed during the routine servicing that follows, which is also on a six-monthly basis.

PM₁₀ Monitoring Adjustment

The FDMS at ENF5 is equivalent to the reference method.

A.2 Diffusion Tubes

- The laboratory supplying the diffusion tubes is Socotec.
- The preparation is 50% TEA:50% acetone.
- Socotec follows the procedures set out in the Harmonisation Practical Guidance.
- Under the WASP scheme Environmental Scientifics Group was rated as a satisfactory lab. The correction factor applied for the tubes is 0.76 for 2022 (factor taken from the National Bias Adjustment spreadsheet, version 03/23).
- Enfield Council does not have a co-location study.

Discussion of Choice of Factor to Use

The national Bias Adjustment Factors only has been used to correct diffusion tube data. There are no local co-location studies.

Table L. Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2022	National	03/23	0.76
2021	National	06/22	0.78
2020	National	-	0.75
2019	National	-	0.75
2018	National	-	0.77
2017	National	-	0.77
2016	National	-	0.77
2015	National	-	0.81

A.3 Adjustments to the Ratified Monitoring Data

Short-term to Long-term Data Adjustment

No adjustment required.

Distance Adjustment

Distance adjustment was used at the diffusion tube sites Enfield 1A and Enfield 8A for 2021. The distance adjustment was made using 'Nitrogen Dioxide fall off with distance' calculator on the Defra LAQM website.

Table M. NO₂ Fall off With Distance Calculations

Site ID	Distance (m): Monitoring Site to Kerb	Distance (m): Receptor to Kerb	Monitored Concentration (Annualised and Bias Adjusted ($\mu\text{g m}^{-3}$))	Background Concentration ($\mu\text{g m}^{-3}$)	Concentration Predicted at Receptor ($\mu\text{g m}^{-3}$)	Comments
Enfield 1A	1	5	45.6	16.41213	36.1	
Enfield 8A	1	8	45.6	24.1394	36.6	

Appendix B Full Monthly Diffusion Tube Results for 2022

Table N. NO₂ Diffusion Tube Results

Site ID	Valid data capture for monitoring period % ^(a)	Valid data capture 2021 % ^(b)	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual mean – raw data	Annual mean – bias adjusted
Enfield 1A	92	92	70.3	70.4	87.5	59.7		59.8	67	72.6	68.3	28.3	11.7	64.7	60	45.6
Enfield 2A	100	100	53	46.4	51.8	27.5	35.3	28.6	30.2	28.8	31.5	45.4	33.9	41.9	37.9	28.8
Enfield 3A	92	92	36.2	27.6	28.7	17.3	21	16.7	18.5	17.7	18.9		9.6	34.9	22.5	17.1
Enfield 4A	100	100	39.9	31.3	36	28.8	26.5	25	25.2	25.5	29.8	33.3	6.3	43.1	29.2	22.2
Enfield 5A	100	100	64.6	44.9	49	42.8	41.7	35.1	39.6	44.6	41.1	46	51.7	45.5	45.6	34.6
Enfield 6	92	92	26.2	13.6	20.8	9.7	11.1	9		16.5	12.7	15.1	17.4	19.8	15.6	11.9
Enfield 7	100	100	36.9	7.4	27.5	18.5	16.4	15.3	19	22.8	25.8	24.9	21	28.7	22	16.7

Enfield 8A	100	100	73.7	57.8	57.1	45	51.9	54.6	47.9	58.5	59.8	73	70.9	69.5	60	45.6
Enfield 9A	100	100	27.9	18.9	28.2	24.5	18.7	14	16.1	17.6	20.1	0.8	1.8	83.9	22.7	17.3
Enfield 10	100	100	43.1	27.6	48.2	35.9	26.7	22.5	28.1	30.1	31.6	35.4	14.8	37.1	31.8	24.1
Enfield 11	92	92	37.6	26.4	26.5	18.7		13.1	16.4	15.8	19.3	24.1	19	38	23.2	17.6
Enfield 12	83	83	53.7		23	17.8		11.1	13.3	12.2	17.1	23.7	19.6	31.6	22.3	15.5
Enfield 13	100	100	44.6	32.3	36.3	25.3	28	21.6	20.8	25.7	28.4	36.8	24.4	31.1	29.6	22.5
Enfield 14	83	83	47.2	34.2	42.8	27.1	25.4	23.4			25.3	35.3	14	39.8	31.4	23.9
Enfield 15	100	100	46.1	38.3	47.7	37.6	29.7	25.9	24.4	32.8	35.9	43.4	10.6	43.7	34.7	26.3
Enfield 16	92	92	44.4	33.5	24.5	24.6	24.6	19.2	20.7	25.3	26.8	34.6		39.6	28.9	22
Enfield 17	100	100	55.9	35.2	40.8	33.3	31.8	29.8	30.6	38.2	39.6	38.7	34.2	47.2	37.9	28.8
Enfield 18	92	92	38.2	33.7	36.9	26.5		21.7	25.1	22.7	27.9	37.9	32.2	34.5	30.7	23.3
Enfield 19	100	100	44.7	30.7	34.4	24.4	21.5	19.8	20.4	20.4	25.5	34	29.6	28.3	27.8	21.1
Enfield 20	100	100	44.6	26.7	33	23.9	25.6	21.8	23.7	23.2	27	32	23.6	23.8	27.4	20.8
Enfield 21	100	100	35	34.8	44.2	31.9	32.5	32.8	33.3	33.2	35.6	43.1	37.8	36.7	35.9	27.3

Notes

Concentrations are presented as $\mu\text{g m}^{-3}$.

Exceedances 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**.

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

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

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