Air Quality Annual Status Report

May 2025

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London Borough of Hillingdon
Air Quality Annual Status Report for 2024

Date of publication: May 2025

This report provides a detailed overview of air quality in the London Borough of Hillingdon during 2024. It has been produced to meet the requirements of the London Local Air Quality Management statutory (LLAQM) process[1]. It also updates on the progress of the Council's Air Quality Action Plan since its adoption in May 2019 to the end of March 2025.

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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

$\mu g\ m^{-3}$	Micro-grammes per cubic metre of air (standard unit for air pollutants)
AQ	Air quality
AQAP	Air Quality Action Plan
AQFA	Air Quality Focus Area
AQG	Air Quality Guidelines (from WHO)
AQMA	Air Quality Management Area
AQN	Air Quality Neutral
AQO	Air Quality Objective
AQSPG	Air Quality Supplementary Planning Guidance
ASR	Annual Status Report
AURN	Automatic Urban and Rural Network
BAM	Beta attenuation monitoring
CAB	Cleaner Air Borough
CHP	Combined Heat and Power
CIL	Community Infrastructure Levy
CO	Carbon monoxide
CO$_2$	Carbon dioxide
DEFRA	Department for Environment, Food and Rural Affairs
EV	Electric Vehicle
EVCP	Electric Vehicle Charging Point
FDMS	Filter Dynamics Measurement System
FIDAS	Fine Dust Analysis System
FORS	Fleet Operator Recognition System
FPN	Fixed Penalty Notice
GLA	Greater London Authority
HAL	Heathrow Airport Limited
HE	Highways England
HS2	High Speed 2 (rail line from London to Birmingham)
HVO	Hydrogenated Vegetable OIl
LAEI	London Atmospheric Emissions Inventory
LBH	London Borough of Hillingdon
LIP	Local Implementation Plan (for Borough transport)
LLAQM	London Local Air Quality Management
MAQF	Mayor's Air Quality Fund
N/A	Not applicable
NOx	Oxides of nitrogen (NO$_2$ + NO)
NO$_2$	Nitrogen dioxide
NRMM	Non-Road Mobile Machinery
O$_3$	Ozone
ONS	Office of National Statistics
PH	Public Health
PM$_1$	Particulate matter less than 1 micron in diameter
PM$_{10}$	Particulate matter less than 10 microns in diameter
PM$_{2.5}$	Particulate matter less than 2.5 microns in diameter
PSDS	Public Sector Decarbonisation Scheme
QA/QC	Quality Assurance / Quality Control
RE:FIT, RE:NEW	GLA programmes for energy efficiency and local generation projects in homes and public bodies
SCR	Selective Catalytic Reduction
SO$_2$	Sulphur dioxide
SPG	Sustainable Planning Guidance
STARS	TfL Community Project to reduce car usage
t	Tonnes (=1,000 kg)
TEOM	Tapered Element Oscillating Microbalance (for PM measurement)
TfL	Transport for London
TOR	Terms of Reference
TSP	Total Suspended Particulate Matter
VCM	Volatile Correction Model
WHO	World Health Organization

Summary

This report provides information on:

- Air quality levels and trends in the London Borough of Hillingdon in 2024 using monitoring data;
- Progress with the Borough's Air Quality Action Plan (AQAP) from March 2024 to March 2025;
- The role of the Planning System on Local Air Quality Management March 2024 to March 2025;
- Temporary emission sources (North Hyde Gardens fire)
- Lessons learnt and opportunities and challenges.

The management of local air quality in the UK is driven by a series of limit values applied to various pollutants. Whereas the Borough's Air Quality Management Area (AQMA) was declared because of non-compliance with the annual limit value for nitrogen dioxide (NO_2), in parts of the Borough, fine particulate matter (reflecting different size fractions, including PM_1, $PM_{2.5}$ or PM_{10}) is also a focus for pollutant emission reductions in Hillingdon given that this pollutant is associated with high health impacts and for which there is no evidence of a threshold concentration for damage.

With the scientifically proven evidence gathered by WHO on the health impacts of fine particulate matter, the Mayor of London, in the London Environment Strategy, adopted a figure of 10 $\mu g.m^{-3}$ $PM_{2.5}$ to be met by 2030. The Environment Act 2021 requires at least one long term target to be set for four key priority areas, one of these is air pollution. The Environmental Targets (Fine Particulate Matter) Regulations 2023 has also adopted the 10 $\mu g.m^{-3}$ target but with a less stretching compliance date of 2040, along with a population exposure reduction target designed to ensure that reductions in exposure are not limited to the sites of highest concentration but benefit the wider population. It is noted that the WHO guideline value to safeguard human health is 5 $\mu g\ m^{-3}$ which is half of the UK Regulations 2023. Given the overwhelming epidemiological evidence underpinning the WHO guidelines set to safeguard human health, the Borough has pledged to reach the WHO guidelines in the shortest period of time and will continue to be using the planning system to reduce pollutant emissions to the maximum possible extent, driving a zero emission benchmark approach for development particularly within (or affecting) Focus Areas and where the most vulnerable group of the population exist. The Environment Act also includes a requirement to reduce population exposure to $PM_{2.5}$ by 35% by 2040 compared to a 2018 baseline.

Data collected in the reporting year (2024) are compliant with the air quality objectives throughout the Borough. It is important to recognise that concentration data are dependent not only on emissions, but also on weather conditions, meaning that compliance for a single year (or a period of only a few years) is not a guarantee of compliance in future years. For individual monitoring stations, local factors, such as temporary road closures or building works can also influence results for specific years. Accepting these caveats, however, it is clear that local and national action on air quality has caused a significant reduction in pollutant concentrations.

Whilst compliance with national objectives was achieved, there was widespread exceedance of the WHO Air Quality Guidelines that were published in 2021 and defined considering available evidence on the existence of health impacts at much lower concentrations. Bearing in mind also that results for a single year (or a period of only a few years) can be influenced by meteorological conditions and other factors, and the population exposure reduction target from the Environment Act of 35% by 2040, continued monitoring and action on air quality in the Borough is necessary. The continuation of air quality monitoring across the Borough, and especially in areas of

accelerated development such as Hayes, and on congested routes as in Focus Areas, is essential to assess whether the air quality improves and London Borough of Hillingdon will continue striving to meet the regional, national and WHO limits and guidelines to safeguard public health.

The Borough has, in conjunction with GLA, defined Air Quality Focus Areas, which are densely populated zones with poor air quality. Whilst the Council seeks to improve air quality across the Borough, these areas continue to require stricter measures and actions to reduce emissions to zero and prevent potential hazardous effects on public health, remaining areas of concern to Hillingdon.

Hillingdon continues to take action under its AQAP to address problems across the Borough to:
- understand and tackle the pollution hot spots in the Borough;
- reduce emissions to the maximum possible extent where it has direct influence, for example on Council-controlled roads and from the Council fleet;
- work with other entities such as TfL, Highways England, HS2 and Heathrow to control emissions where Hillingdon does not have direct influence by requiring emission minimising and offsetting for their polluting activities; and
- make efficient use of the planning system to improve air quality and reduce citizens exposure to hazardous levels; this is achieved through:
    a) ensuring that new developments do not introduce unmitigated sources of emission to the Borough
    b) applying air quality neutral requirement to all development, with no exceptions, including all fleet vehicle types and activities, with benchmarks set to zero within Focus Areas (or to development that may not be geographically within but that will affect the Focus Areas), and
    c) making sure proposals in Focus Areas demonstrate an air quality positive approach achieving significant/substantial emission reductions, in alignment with the London Plan and LBH Local Action Plan 2019-2024, working towards achieving zero emissions through appropriate mitigation or offsetting.

Highlights of the Council's work on air quality in the reporting year include:

- Continued action on idling vehicles, with fines across the Borough given to 3579 vehicles in 2024
- Continued work to upgrade the Council's vehicle fleet to cleaner vehicles with plans to achieve the inclusion of 32 electric vehicles in a replacement plan of 96 vans.
- Completion of energy efficiency and renewable energy projects at the Civic Centre, Highgrove Pool, Hillingdon and Uxbridge Lido and Winston Churchill Hall. These 4 sites have the highest energy use across the LBH corporate estate.
- Continued work with schools:
    - Increased levels of STaRS accreditation.
    - Bikeability, pedestrian and scooter training sessions for over 16,000 pupils.
    - Use of proceeds from Dragon's Den events for road safety and sustainable travel projects.
- Launch of the Hillingdon Cycling Strategy.
- Provision and upgrading of infrastructure for cycling and walking on the Grand Union Canal towpath and North Hyde Road in Hayes. Further plans are in development to promote

cycling, notably through Brunel University and along the Celandine Route, whilst discussions with National Highways for improving active travel around High Street Harlington are underway.

- Further local improvements including:
  - Use of green infrastructure.
  - Design work for North Hyde Road moving westward extension from Cranford Park Road.
  - Completion of upgrades to Mulberry Shopping Parade in West Drayton including measures to increase active travel and use of green infrastructure.
- Recruitment of an electric vehicle charging point project engineer and introduction of contact for advice on charging.

The council continues to face a number of other challenges with its air quality work, ranging from additional sources of pollution such as data centres and increased use of wood-burning for heating, to the need to adopt and implement the new action plan that addresses tightened air quality standards for the period 2025 to 2030. Ultrafine particulate matter is also being closely considered with plans to expand existing monitoring locations being designed by the Borough.

Some infrastructure issues have been identified as problematic, for example, the power supply to the Harlington Road depot requiring significant investment if further electric vehicles are to be purchased beyond current plans.

There are also opportunities. Since the first AQAP was developed for the Borough the planning system has played an increasingly important role in the Borough's local air quality management. The potential for improved efficiency in council actions has also been exploited through links between the Council's AQAP and other policy areas including Public Health and Climate Change. The new London Borough of Hillingdon AQAP is currently under consultation being expected to be published in the Summer of 2025. This will cover the period to 2030 and will allow the Council to help ensure actions are taken to provide evidence that the $PM_{2.5}$ target will be met by 2030.

1 Introduction

1.1 The purpose of this report

This report provides an overview of air quality in the London Borough of Hillingdon during 2024. It has been produced to meet the requirements of the London Local Air Quality Management (LAQM) statutory process[1].

National Air Quality and International Standards, Objectives and Guidelines for the pollutants of relevance to London Borough of Hillingdon are given in Table A. The World Health Organisation (WHO) 2021 air quality guidelines (AQGs) (also included in Table A) will continue to act as guiding targets to improve air quality within the Borough and safeguard human health. The Borough has pledged to achieve the WHO guidelines in the shortest possible time and will continue to use the planning regime to tighten pollutant emission levels into the atmosphere requiring full mitigation within sensitive areas.

Whereas there are no exceedances in the Borough either of the NO_2 limit values and national objectives or exceedances for other pollutants for which national standards exist, the WHO air quality guidelines are exceeded throughout the Borough's area of jurisdiction.

Table A. Summary of National Air Quality and International Standards, Objectives and Guidelines for the pollutants of relevance to London Borough of Hillingdon

Pollutant	Standard / Objective / Guideline	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
Nitrogen dioxide (NO_2)	WHO AQG[2]: 10 µg m^{-3}	Annual mean	
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})	WHO AQG[2]: 45 µg m^{-3} not to be exceeded more than 3-4 times a year	24-hour mean	
Particles (PM_{10})	40 µg m^{-3}	Annual mean	31 Dec 2004
Particles (PM_{10})	WHO AQG[2]: 15 µg m^{-3}	Annual mean	
Particles ($PM_{2.5}$)	10 µg m$^{-3(3)}$	Annual mean	2040
Particles ($PM_{2.5}$)	London Mayoral Objective[4]: 10 µg m^{-3}	Annual mean	2030
Particles ($PM_{2.5}$)	WHO AQG[2]: 5 µg m^{-3}	Annual mean	
Particles ($PM_{2.5}$)	Target of 15% reduction in concentration at urban background locations	3-year mean	Between 2010 and 2021
Particles ($PM_{2.5}$)	WHO AQG[2]: 15 µg m^{-3}	24-hour mean	
Sulphur dioxide (SO_2)	266 µg m^{-3} not to be exceeded more than 35 times a year	15-minute mean	31 Dec 2005
Sulphur dioxide (SO_2)	350 µg m^{-3} not to be exceeded more than 24 times a year	1-hour mean	31 Dec 2004
Sulphur dioxide (SO_2)	125 µg m^{-3} mot to be exceeded more than 3 times a year	24-hour mean	31 Dec 2004
Sulphur dioxide (SO_2)	WHO AQG[2]: 40 µg m^{-3} not to be exceeded more than 3-4 times a year	24-hour mean	

Notes:

(1) Date by which to be achieved by and maintained thereafter
(2) 2021 World Health Organisation Air Quality Guidelines
(3) Environmental Target Regulations under the Environment Act 2021
(4) London Mayoral Objective

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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

1.2 Description of the Local Authority Area

Hillingdon is, geographically, the second largest local authority in London and has approximately 304,800 residents according to January 2025[2] population figures published by the ONS. Hillingdon covers an area of 116 square kilometres (45 square miles) and has a population density of 10, 980.5 people per square kilometre (km^2), based on the latest population estimates taken in January 2025. Parts of the Borough to the north of the A40 are semi- rural, with Ruislip as the district centre. The south of the Borough is more densely populated, urban in character, and contains the metropolitan centre of Uxbridge and the towns of Hayes and West Drayton.

It also contains numerous important transport links. As well as being home to Heathrow Airport the Borough is crossed by the M4 and the A40 and bordered to the west by the M25 and to the east by the A312, attracting traffic into the Borough and encouraging traffic to pass through it. These roads generate a significant air pollution burden on the people of the Borough.

1.3 Hillingdon's Air Quality Management Area (AQMA)

An AQMA was declared in Hillingdon due to exceedance of the annual mean objective of NO2 in 2003 (Figure 1). Air quality problems in the Borough continue to be most severe around Heathrow Airport and the major road network that goes through the Borough, reflecting the largest sources of nitrogen oxide (NOx) emissions within the AQMA which covers the southern half of the Borough. The possible inclusion of areas in the north of the Borough has been kept, and will continue to be, under review.

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[2] https://totalpopulation.co.uk/authority/hillingdon

Figure 1. Hillingdon's AQMA

An Action Plan, showing how Hillingdon Borough Council intended to tackle these problems, was first issued in 2004. The plan was updated in June 2019 (Air Quality Action Plan 2019-2024)[3] and its replacement (Air Quality Action Plan 2025-2030) is currently under consultation. Both versions of the plan focus on delivering improvements in certain areas of the Borough that are most adversely affected by pollutant emissions, namely Focus Areas as well as other sensitive locations where poor air quality is observed with relevant public exposure. The updated Action Plan builds on the successful measures of the previous period and reflects both London policy changes and associated guidance as well as national policy updates.

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[3] http://www.hillingdon-air.info/pdf/Hillingdon_AQAP_2019_2024_finalversion.pdf

In addition to providing data on air quality in the Borough in 2024, this report also provides:

i)   A review of the achievements made to date through the implementation of the 2019-2024 air quality action plan,

ii)   The role of the planning system on Local Air Quality Management, and

iii)   A summary of opportunities and challenges to Hillingdon's local air quality management for future years.

2 Air Quality Monitoring in Hillingdon

2.1 Automatic monitoring sites

There were 12 operational automatic continuous monitoring sites in the London Borough of Hillingdon in 2024 (Table B). Hillingdon 1 in South Ruislip (HI1), Hillingdon 3 in Oxford Avenue (HI3), Hillingdon Sipson (SIPS), London Harmondsworth (HIL1), Hillingdon Hayes (HIL5), and London Harmondsworth Osiris (HIL4) are all part of the Borough's monitoring network. London Hillingdon (HIL) is part of the Defra - owned Automatic Urban and Rural Network (AURN). London Heathrow (LHR2), Heathrow Oaks Road (T54), Heathrow Green Gates (T55), London Harlington (HRL) and London Heathrow Bath Road (LHRBR) are all part of the Heathrow Airport's monitoring network. A map showing the location of the LBH

automatic stations is shown in
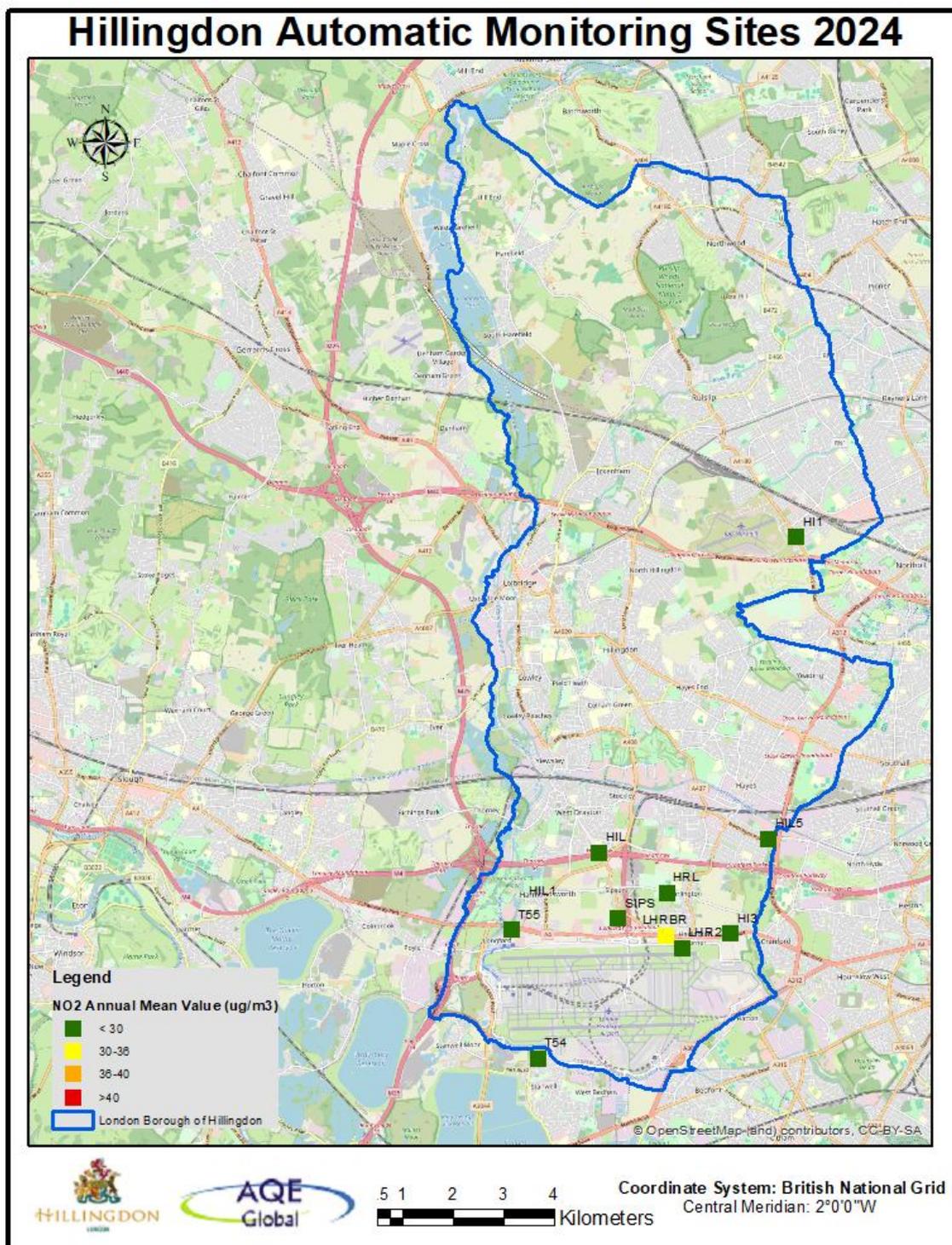
Figure 2.

The method used by the Osiris monitoring system at HIL4 (Hillingdon Harmondsworth) has been validated for the UK monitoring network and results for the site are included in this report.

2.2 Non-automatic monitoring sites

Passive diffusion tube monitoring of NO_2 was carried out at 44 sites in the Borough in 2024 (Figure 3), covering both background and roadside locations (Table C), supplementing the information generated by the automatic network. Two of the diffusion tube sites are co-located with continuous monitoring sites to derive local bias adjustment factors: HILL01 (using triplicate tubes since August 2023) is co-located with London Hillingdon automatic monitoring site (HIL) and HILL03 (using triplicate tubes) is co-located with Hillingdon 1 in South Ruislip automatic monitoring site (HI1).

A local bias adjustment factor of 0.84 was derived from the colocation exercise in 2024, using data from both collocated sites. The factor was calculated using recommended technical guidance procedures in accordance with the Mayor's London Local Air Quality Management Technical Guidance 2021 (LLAQM.TG(19)). Given that the National bias adjustment for good precision sites for Gradko 20% Tea/Water is 0.85; to secure a conservative approach a decision was made to use the national factor instead of the locally derived one. Therefore, the local bias adjustment factor of 0.85 has been used to correct the diffusion tube results.

Full details of diffusion tube QA/QC, including justification for the choice of bias adjustment factors are presented in Appendix A. Monthly NO_2 diffusion tube data are provided in Appendix B.

2.3 Low-cost sensor monitoring sites

Four low-cost sensor monitoring sites (Table D) were gathering data on both NO_2 and $PM_{2.5}$ during 2024 capturing local conditions at Tavistock Road, Harlington Road, Green Lane (Northwood), and Harefield Hospital (Figure 4).
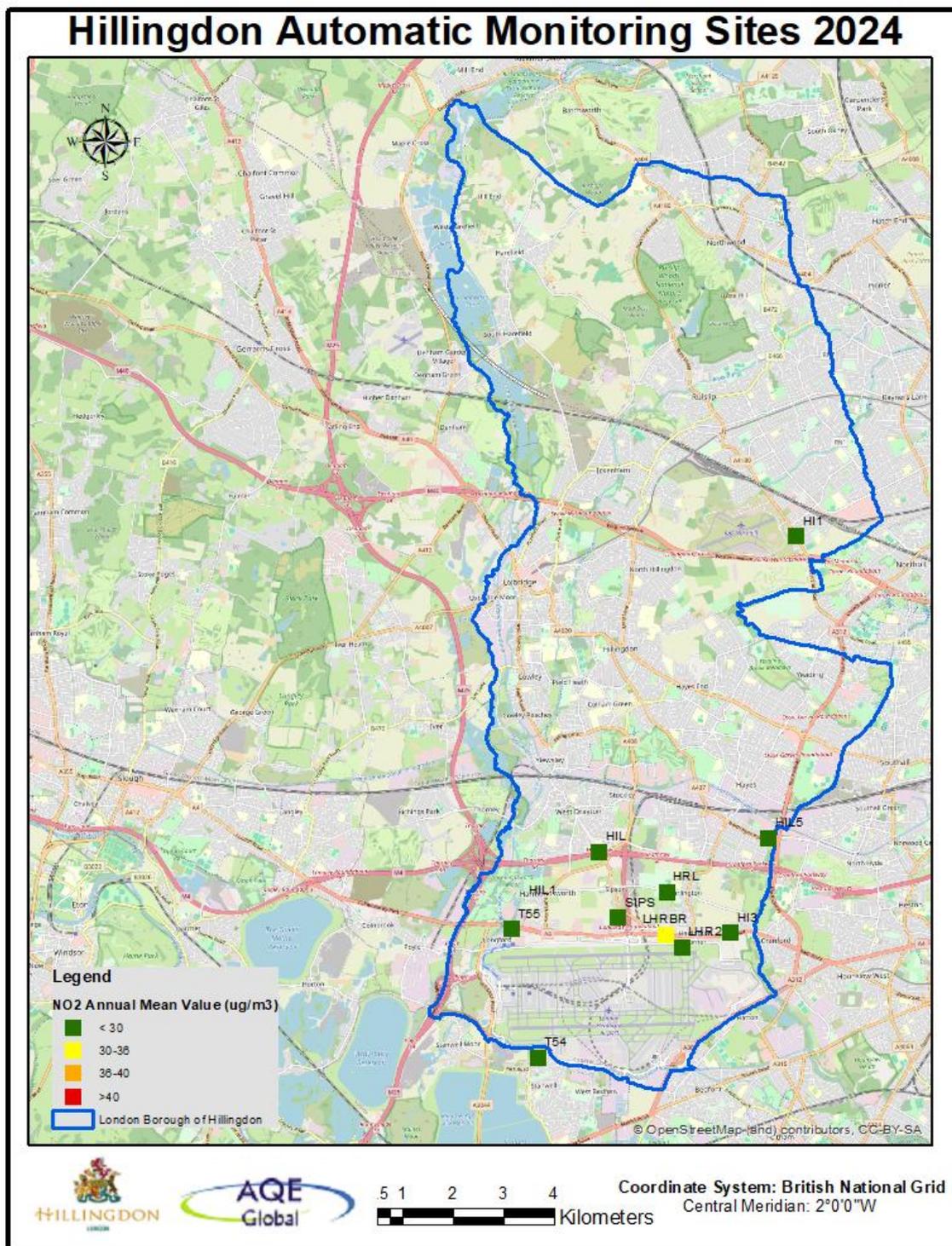
Figure 2. Location of the automatic monitoring sites in Hillingdon, nitrogen dioxide annual mean concentrations, NO₂ (ug/m³) 2024
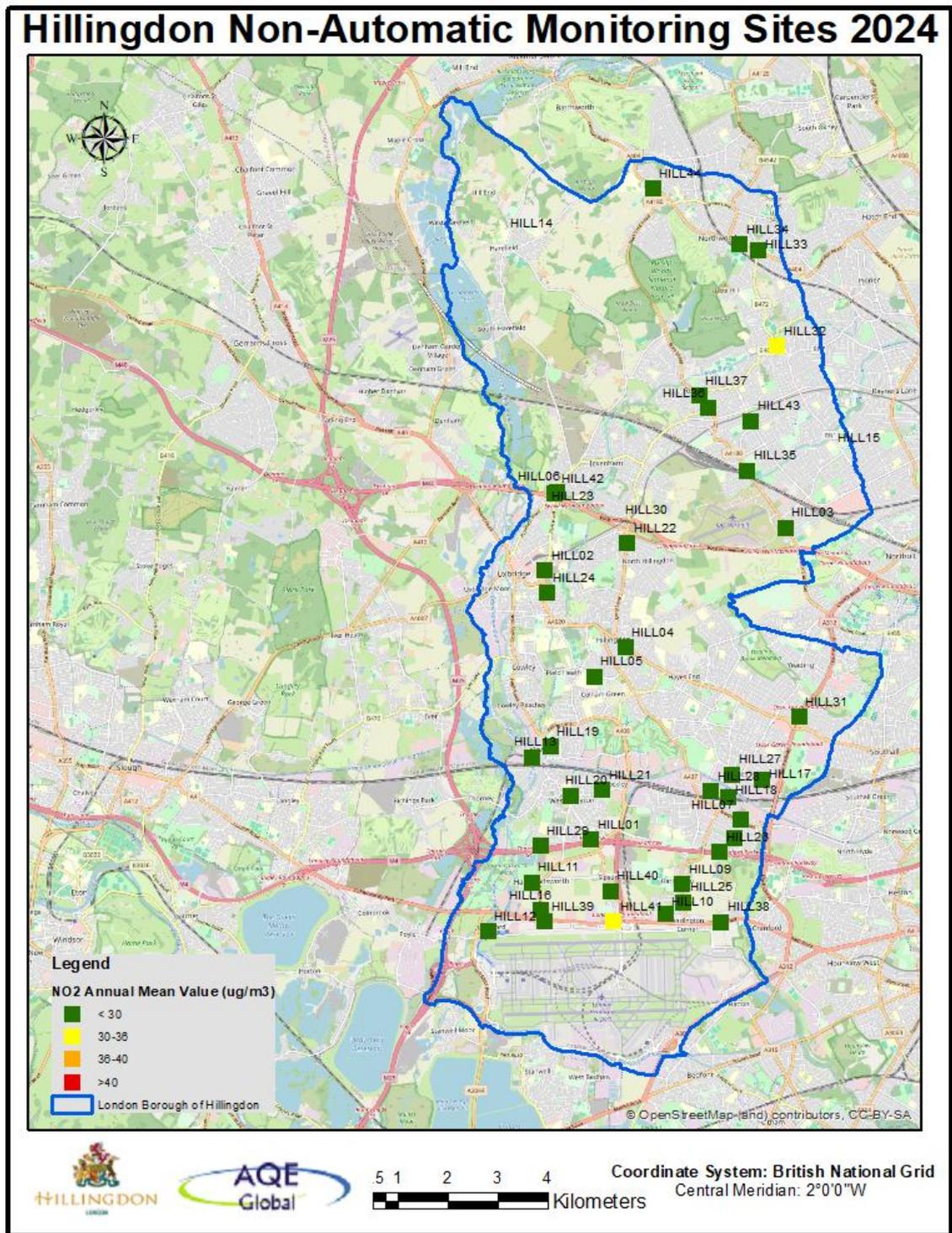
Figure 3. Location of non-automatic monitoring sites in Hillingdon, nitrogen dioxide annual mean concentrations, NO$_2$ (ug/m^3) 2024.
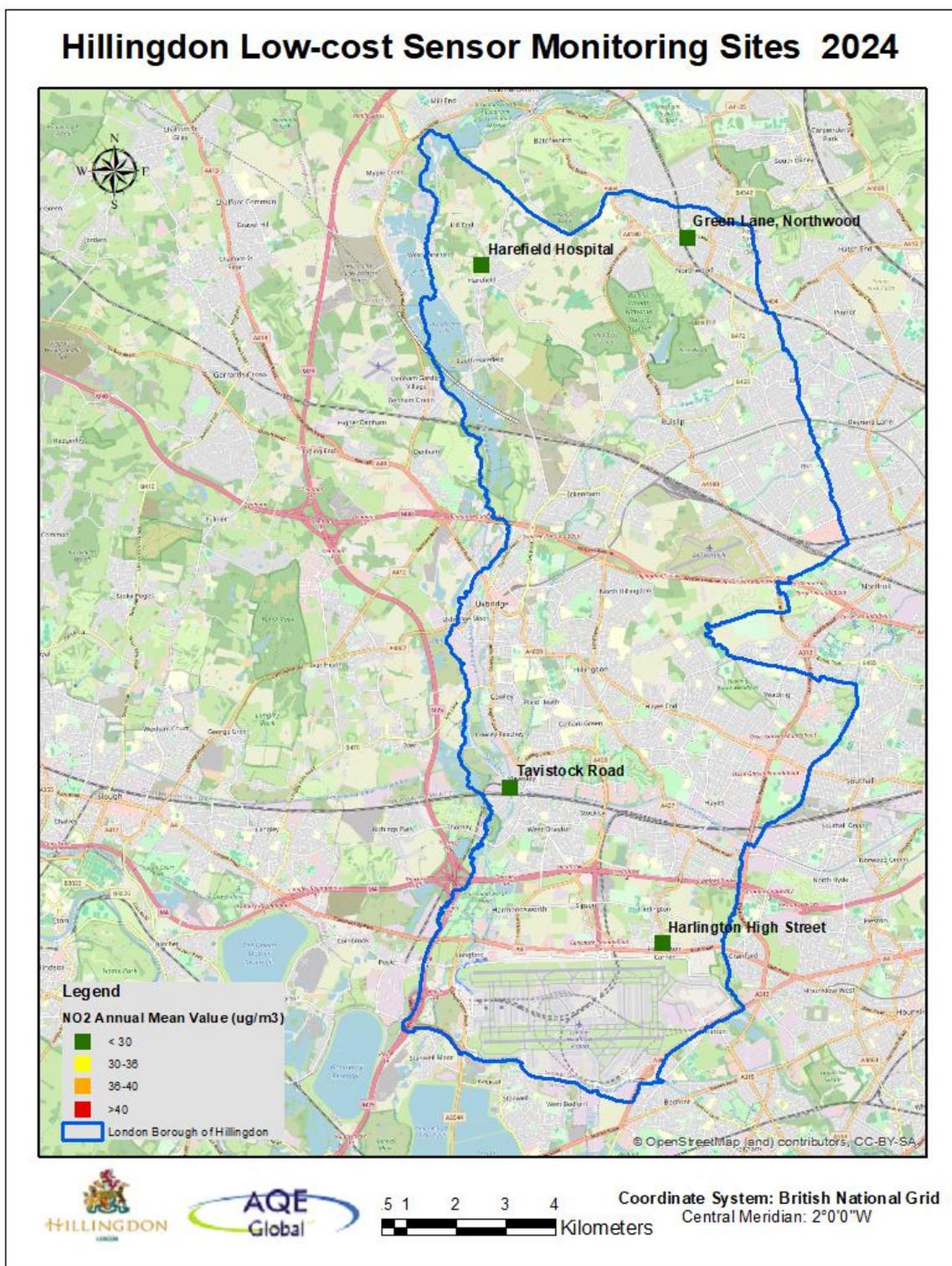
Figure 4. Location of low-cost sensor monitoring sites in Hillingdon covering both PM$_{2.5}$ and NO$_2$, with 2024 NO$_2$ concentrations shown (ug/m^3).

Table B. Details of automatic monitoring sites in Hillingdon for 2024

Site ID	Site Name	Site Type	X OS Grid Ref Easting (m)	Y OS Grid Ref Northing (m)	Pollutants monitored	In AQMA? (Y/N) Which AQMA?	Monitoring technique	Distance from monitoring site to relevant exposure [1] (m)	Distance to kerb of nearest road[2] (m)	Inlet height (m)
LHR2	London Heathrow	Airport	508600	176700	NO_2, PM_{10}, $PM_{2.5}$ PM_1	YES, LBH	Chemiluminescence FIDAS	N/A	N/A (inside airport)	1.5
HIL	London Hillingdon	Urban background	506951	178605	NO_2, PM_{10}, $PM_{2.5}$, O_3	YES, LBH	Chemiluminescence FIDAS	16m	2.5m (30m to M4)	1.5
HI1	Hillingdon 1 - South Ruislip	Roadside	510857	184917	NO_2, PM_{10}	YES, LBH	Chemiluminescence TEOM	11m	2.5m	1.5
HI3	Hillingdon 3 - Oxford Avenue	Roadside	509557	176994	NO_2, PM_{10}	YES, LBH	Chemiluminescence TEOM	8m and 17m	33m to A4 Bath Road (2m to Oxford Avenue)	1.5
HRL	London Harlington	Airport	508295	177800	CO, NO_2, O_3, PM_{10}, $PM_{2.5}$	YES, LBH	Chemiluminescence TEOM FDMS	N/A	3m	1.5
SIPS	Hillingdon Sipson	Urban background	507325	177282	NO_2	YES, LBH	Chemiluminescence	9m	2.5m	1.5
HIL1	London Harmondsworth	Roadside	505561	177661	NO_2, PM_{10}	YES, LBH	Chemiluminescence BAM	20m	1m	1.5
HIL4	London Harmondsworth Osiris	Urban background	505671	177605	TSP, PM_{10}, $PM_{2.5}$, PM_1	YES, LBH	Optical	1m	13m	1.5
T55	Heathrow Green Gates	Airport	505207	177072	NO_2, PM_{10}, $PM_{2.5}$ PM_1	YES, LBH	Chemiluminescence FIDAS	32m	N/A (background for the airport) (62m to airport boundary)	1.5

Site ID	Site Name	Site Type	X OS Grid Ref Easting (m)	Y OS Grid Ref Northing (m)	Pollutants monitored	In AQMA? (Y/N) Which AQMA?	Monitoring technique	Distance from monitoring site to relevant exposure [1] (m)	Distance to kerb of nearest road[2] (m)	Inlet height (m)
T54	Heathrow Oaks	Airport	505729	174496	NO_2, PM_{10}, $PM_{2.5}$	YES, LBH	Chemiluminescence FIDAS	N/A	5m	1.5
HIL5	Hillingdon Hayes	Roadside	510303	178882	NO_2, PM_{10}	YES, LBH	Chemiluminescence BAM	15m	1m	1.5
LHRBR	Heathrow Bath Road	Roadside	508279	176949	NO_2, PM_{10}, $PM_{2.5}$	YES, LBH	Chemiluminescence FIDAS	140m	6m	1.5

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).
(2) N/A if not applicable

Table C. Details of non-automatic monitoring sites in Hillingdon in 2024

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref Easting (m)	Y OS Grid Ref Northing (m)	Pollutants monitored	In AQMA? (Y/N) Which AQMA?	Distance from monitoring site to relevant exposure (m)	Distance to kerb of nearest road (N/A if not applicable) (m)	Tube co-located with an automatic monitor? (Y/N)	Inlet height (m)
HILL01	AURN Site, Keats Way, West Drayton	Roadside	506926	178614	NO_2	YES, LBH	0	30m from M4	Y	1.5
HILL02	Uxbridge Day Nursery Park Road Uxbridge (on wire Fence)	Roadside	505996	184058	NO_2	YES, LBH	0	4	N	1.5
HILL03	South Ruislip Monitoring Station West End Road	Roadside	510821	184923	NO_2	YES, LBH	14	2.5	Y	1.5
HILL04	Hillingdon Primary School Uxbridge Road Hillingdon (on wire fence)	Roadside	507617	182506	NO_2	YES, LBH	0	5	N	1.5
HILL05	Hillingdon Hospital Monitoring Station Colham Road (Near John Rich House on former junction to Pield Heath Road)	Roadside	506989	181920	NO_2	YES, LBH	7	2	N	1.5
HILL06	Warren Road Ickenham Uxbridge (1st lamp post on left)	Roadside	506243	185653	NO_2	YES, LBH	1	23	N	1.5
HILL07	Harold Avenue (first lamp post on left)	Roadside	509918	179015	NO_2	YES, LBH	4	30	N	1.5
HILL08	15 Phelps Way Hayes (lamp post outside of)	Roadside	509798	178654	NO_2	YES, LBH	7	1.5	N	1.5
HILL09	25 Cranford Lane Harlington (lamp post on the left after car park)	Roadside	508758	177718	NO_2	YES, LBH	7	1	N	1.5
HILL10	Brendan Close Harlington (1st lamp post on the left)	Roadside	508414	177125	NO_2	YES, LBH	0	1	N	1.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref Easting (m)	Y OS Grid Ref Northing (m)	Pollutants monitored	In AQMA? (Y/N) Which AQMA?	Distance from monitoring site to relevant exposure (m)	Distance to kerb of nearest road (N/A if not applicable) (m)	Tube co-located with an automatic monitor? (Y/N)	Inlet height (m)
HILL11	Harmondsworth Green Harmondsworth (lamp post outside nursery)	Roadside	505736	177752	NO_2	YES, LBH	0	1	N	1.5
HILL12	Heathrow Close Longford (1st lamp post on the right)	Roadside	504851	176770	NO_2	YES, LBH	0	2	N	1.5
HILL13	31 Tavistock Road (on lamp-post outside house)	Roadside	505731	180288	NO_2	YES, LBH	3	1	N	1.5
HILL14	Harefield Hospital Hill End Road (lamp-post outside entrance)	Background	505299	190923	NO_2	NO	0	5	N	1.5
HILL15	Field End Road/Field End School S.Ruislip 3rd Lamp-post south of school entrance (outside AQMA)	Roadside	511889	186563	NO_2	NO	8	1	N	1.5
HILL16	49 Zealand Avenue Lamp Post	Roadside	505920	177188	NO_2	YES, LBH	8	13	N	1.5
HILL17	49 Silverdale Gardens, Hayes Lamp Post (8)	Background	510361	179820	NO_2	YES, LBH	9	14	N	1.5
HILL18	Blyth Road, Hayes Lamp Post (4)	Roadside	509683	179486	NO_2	YES, LBH	6	2	N	1.5
HILL19	Side of 104 Yiewsley High Street (front of 1A Fairfield Road) Lamp Post (2)	Background	506108	180493	NO_2	YES, LBH	9	37	N	1.5
HILL20	1 Porters Way (corner with Kingston Lane) Lamp Post (1)	Background	506503	179510	NO_2	YES, LBH	12	9	N	1.5
HILL21	5-7 Mulberry Crescent, West Drayton Lamp Post (18)	Background	507141	179628	NO_2	YES, LBH	10	2	N	1.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref Easting (m)	Y OS Grid Ref Northing (m)	Pollutants monitored	In AQMA? (Y/N) Which AQMA?	Distance from monitoring site to relevant exposure (m)	Distance to kerb of nearest road (N/A if not applicable) (m)	Tube co-located with an automatic monitor? (Y/N)	Inlet height (m)
HILL22	340 Long Lane, Uxbridge Lamp Post (71)	Roadside	507649	184611	NO_2	YES, LBH	18	2	N	1.5
HILL23	198 Harefield Road, Uxbridge Lamp Post (2)	Background	506143	185395	NO_2	YES, LBH	9	33	N	1.5
HILL24	59 Hillingdon Road, Uxbridge Lamp Post (56)	Roadside	506035	183611	NO_2	YES, LBH	12	1.5	N	1.5
HILL25	10 West End Lane, Harlington Lamp Post (2)	Background	508773	177352	NO_2	YES, LBH	11	33	N	1.5
HILL26	R/O 130 Cleave Avenue, Hayes Lamp Post (33)	Roadside	509499	178370	NO_2	YES, LBH	18	27	N	1.5
HILL27	Botwell House RC Primary School (Side-fence)	Roadside	509755	179934	NO_2	YES, LBH	5	12	N	1.5
HILL28	Blyth Road 2nd Tube, Hayes Lamp Post (17) (western most lamp post in front of 133 Enterprise House)	Roadside	509328	179603	NO_2	YES, LBH	5	2	N	1.5
HILL29	Little Benty, Road name sign corner of The Brambles and Little Benty. UB7 7UJ	Background	505906	178497	NO_2	YES, LBH	5	1.5	N	1.9
HILL30	Lamp-post down alley next to No 60a The Chase, Ickenham. Red garage door, set back from road. UB10 8ST	Background	507612	185118	NO_2	YES, LBH	4	25	N	2.5
HILL31	On white lamp-post at end of Dorchester Waye that runs parallel with A312, side of houses	Background	511103	181097	NO_2	YES, LBH	18	10	N	2.2

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref Easting (m)	Y OS Grid Ref Northing (m)	Pollutants monitored	In AQMA? (Y/N) Which AQMA?	Distance from monitoring site to relevant exposure (m)	Distance to kerb of nearest road (N/A if not applicable) (m)	Tube co-located with an automatic monitor? (Y/N)	Inlet height (m)
HILL32	*Roadside lamp-post, outside Georgian Lodge flats, Field End Road, Eastcote. HA52QL.*	*Background*	*510664*	*188599*	*NO_2*	*NO*	*8.9*	*0.6*	*N*	*2.0*
HILL33	*Kerbside lamppost outside Roundabout House, 34 Pinner Road. HA6 1BZ*	*Roadside*	*510284*	*190524*	*NO_2*	*NO*	*7.0*	*0.5*	*N*	*2.2*
HILL34	*Roadside lamp-post, pavement outside 177/179 Pinner Road. HA6 1DB.*	*Roadside*	*509900*	*190648*	*NO_2*	*NO*	*4*	*2*	*N*	*2.2*
HILL35	*Grey Lamp-post, West End Road, to the south of Sidmouth Drive, outside Aroma House Chinese. HA4 6LR*	*Roadside*	*510055*	*186080*	*NO_2*	*NO*	*7*	*0.4*	*N*	*2.3*
HILL36	*Lamp-post outside Vodafone, 69 High Street Ruislip. HA4 8JB*	*Roadside*	*509275*	*187340*	*NO_2*	*NO*	*4*	*3*	*N*	*2.4*
HILL37	*2/6 High St. Ruislip Lamp-post with Parking and church sign. HA4 7AW*	*Roadside*	*509097*	*187597*	*NO_2*	*NO*	*3*	*1*	*N*	*2.0*
HILL38	*Blue street light neat speed camera markings to west of Oxford Ave, Near AQMS. UB3 5HU*	*Roadside*	*509525*	*176949*	*NO_2*	*YES, LBH*	*6*	*1.2*	*N*	*2.2*
HILL39	*Pinglestone Close/Bath Road A4. On cycle lane sign post. Park up Pinglestone close. UB7 0DJ.*	*Roadside*	*506000*	*176969*	*NO_2*	*YES, LBH*	*10*	*1.5*	*N*	*2.2*
HILL40	*On zone sign at corner of Sipson Close/Sipson Rd. UB7 0JX.*	*Roadside*	*507316*	*177576*	*NO_2*	*YES, LBH*	*4*	*1.8*	*N*	*1.9*

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref Easting (m)	Y OS Grid Ref Northing (m)	Pollutants monitored	In AQMA? (Y/N) Which AQMA?	Distance from monitoring site to relevant exposure (m)	Distance to kerb of nearest road (N/A if not applicable) (m)	Tube co-located with an automatic monitor? (Y/N)	Inlet height (m)
HILL41	*On the north side of the A4 near the houses by the junction with Sipson Way*	*Roadside*	*507369*	*176966*	*NO$_2$*	*YES, LBH*	*6*	*0.7*	*N*	*2.0*
HILL42	*Telegraph pole next to big house/field on South corner of The Drive. UB10 8DA*	*Roadside*	*506192*	*185614*	*NO$_2$*	*YES, LBH*	*5*	*4.5*	*N*	*2.3*
HILL43	*Lamp-post outside tattoo and Five star nail parlours, No 60, Victoria Road. HA4 0AH*	*Roadside*	*510134*	*187086*	*NO$_2$*	*YES, LBH*	*3.5*	*1.5*	*N*	*2.4*
HILL44	*Hillingdon NorthWood Focus Area On a lamppost on Ducks Hill Road Corner of Rising Hill Close HA6 2NP*	*Roadside*	*508162*	*191784*	*NO$_2$*	*NO*	*10*	*1.5*	*N*	*2.2*

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).
(2) N/A if not applicable

Table D. Details of Automatic Low-Cost Monitoring Sites in Hillingdon in 2024.

Site Name	Site Location	X (m)	Y (m)	Site Type	In AQMA? (Y/N)	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
Tavistock Road (a)	in front of 69 Tavistock Rd, West Drayton UB7 7QT	505739	180258	Roadside	Y	6.5m	0.4m	2.5	NO_2, $PM_{2.5}$	laser scattering ($PM_{2.5}$)
Harlington High Street b)	485A High Street, Harlington, UB3 5DL	508824	177081	Roadside	Y	3.3m	1.3	2.5	NO_2, $PM_{2.5}$	laser scattering ($PM_{2.5}$)
Harefield Hospital	*Harefield Hospital UB9*	505164	190882	Roadside	N	18 m	1.3	2.5	NO_2, $PM_{2.5}$	laser scattering ($PM_{2.5}$)
Green Lane, Northwood	*In lamppost in front of 68A Green Lane, Northwood, HA6 2XS*	509310	191450	Roadside	N	10 m	1.3	2.5	NO_2, $PM_{2.5}$	laser scattering ($PM_{2.5}$)

(a) This Node was located on Tavistock Road because the local community had raised concerns over the impact of traffic associated with nearby industrial uses. Installed: Thursday, June 3rd 2021

(b) Installed: Tuesday, November 23rd 2021

Small low-cost sensors are not as accurate as reference-grade analysers, but by combining their data with the reference networks, acceptable data quality standards may be achieved.

2.4 Comparison of Monitoring Results with Air Quality Objectives

Trends in the monitored pollution data for the Borough are presented in the following summary Figures:

- Figure 5. Annual mean NO_2 concentrations measured at the automatic monitoring stations, 2019-2024, showing data for each site in the Borough. No sites exceed the annual mean objective (40 $\mu g.m^{-3}$). All sites exceed the WHO guideline (10 $\mu g.m^{-3}$).
- Figure 6. Annual mean NO_2 concentrations measured at diffusion tube locations, 2019-2024, showing data for each site in the Borough. Units: $\mu g.m^{-3}$. No sites exceed the annual mean objective (40 $\mu g.m^{-3}$). All sites exceed the WHO guideline (10 $\mu g.m^{-3}$).
- Figure 7. Annual mean PM_{10} concentrations measured at the automatic monitoring stations, 2019-2024. No sites exceed the annual mean objective (40 $\mu g.m^{-3}$). All sites exceed the WHO guideline(15 $\mu g.m^{-3}$).
- Figure 8. Annual mean $PM_{2.5}$ concentrations measured at the automatic monitoring stations, 2019-2024. No sites exceed the annual mean objective of 10$\mu g.m^{-3}$, nor the London annual mean target of 10 $\mu g.m^{-3}$. However, the WHO guideline of 5$\mu g.m^{-3}$ is exceeded at all locations.
- Figures 9. Hourly mean NO_2 concentrations measured at the low-cost sensor at Tavistock Road, 1st January to 31st December 2024. Units: $\mu g.m^{-3}$
- Figures 10. Hourly mean $PM_{2.5}$ concentrations measured at the low-cost sensor at Tavistock Road, 1st January to 31st December 2024. Units: $\mu g.m^{-3}$
- Figures 11. Hourly mean NO_2 concentrations measured at the low-cost sensor at Harlington High Street, 1st January to 31st December 2024. Units: $\mu g.m^{-3}$
- Figures 12. Hourly mean $PM_{2.5}$ concentrations measured at the low-cost sensor at Harlington High Street, 1st January to 31st December 2024. Units: $\mu g.m^{-3}$
- Figures 13. Hourly mean NO_2 concentrations measured at the low-cost sensor at Harefield Hospital, 1st January to 31st December 2024. Units: $\mu g.m^{-3}$
- Figures 14. Hourly mean $PM_{2.5}$ concentrations measured at the low-cost sensor at the Harefield Hospital, 1st January to 31st December 2024. Units: $\mu g.m^{-3}$
- Figures 15. Hourly mean NO_2 concentrations measured at the low-cost sensor at Green Lane (Northwood), 8th June to 31st December 2024. Units: $\mu g.m^{-3}$
- Figures 16. Hourly mean $PM_{2.5}$ concentrations measured at the low-cost sensor at Green Lane (Northwood), 8th June to 31st December 2024. Units: $\mu g.m^{-3}$

For annual reporting, the results presented are after adjustments for 'annualisation' and for distance to a location of relevant public exposure (wherever applicable).
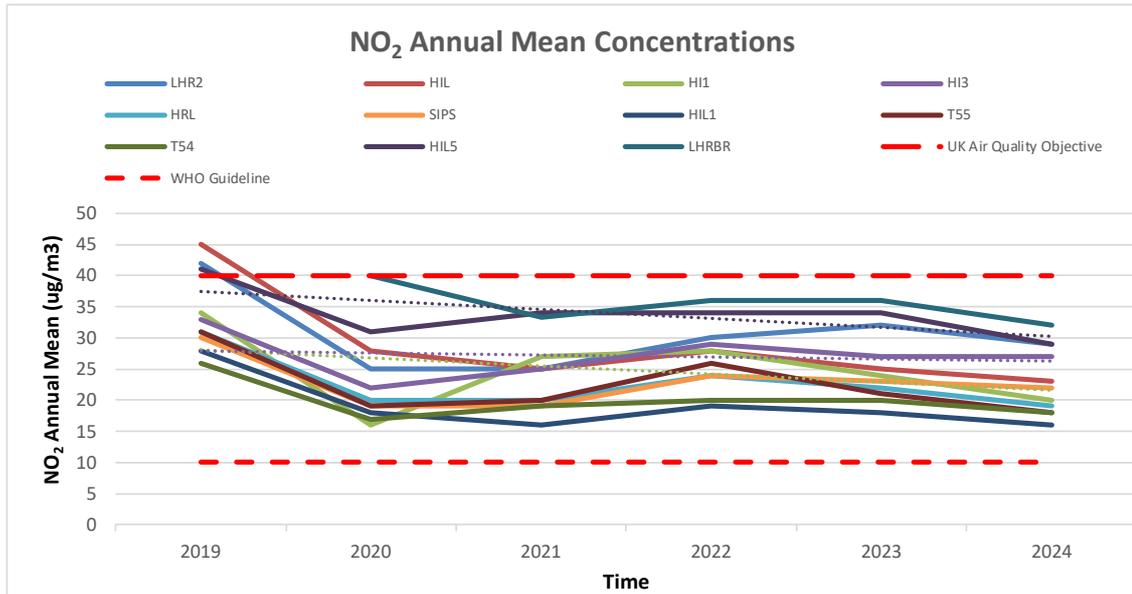
Figure 5. Annual mean NO₂ concentrations measured at the automatic monitoring stations, 2019-2024, showing data for each site in the Borough. Units: μg.m⁻³.

Figure 5 indicates that NO$_2$ annual mean concentrations observed in 2024 have decreased at all of the continuous monitoring sites (with the exception of one monitoring location where no decrease was observed - Hillingdon 3 - Oxford Avenue), with decreases ranging from 1.0 (Hillingdon Sipson) to 5.0 ug/m^3 (Hillingdon Hayes) from 2023 to 2024 across the Borough. [Exact values for NO$_2$, PM$_{2.5}$ and PM$_{10}$ are shown in Tables E to K below, that follow this series of graphs.]

From the continuous monitoring stations, it was observed that the continuous monitoring site Hillingdon Hayes (HIL5) was the location with the highest decrease registering a reduction of 5 μg.m^{-3} from 2023 to 2024. This is attributed to the stringent planning requirements having been imposed within this sensitive area (Hayes Focus Area) where benchmarks zero apply to air quality neutral calculations to all development with total pollutant emissions required to be mitigated (Local Action Plan 2019-2024, Measure 5). Similar results have been observed at all Focus Areas managed by LBH through the planning regime.

Figure 6 indicates that NO$_2$ annual mean concentrations observed in 2024 have decreased at all of the diffusion tube monitoring sites, with the highest decrease observed of 6.6 μg.m^{-3} from 2023 to 2024 being noted at the diffusion tube site HILL41 located on the north side of the A4 near the houses by the junction with Sipson Way, and the smallest decrease of 0.1 μg.m^{-3} from 2023 to 2024 being registered at the

diffusion tube site HILL23 located at 198 Harefield Road, Uxbridge Lamp Post (2). All sites are located within the AQMA.

It is noted that all monitoring sites from the standard LBH network exceed the WHO NO_2 target value of 10 $\mu g.m^{-3}$ (Figures 5 and 6) set to safeguard human health. This is of concern to LBH who will continue to strive to attain the WHO guidelines to protect citizens' health in the shortest period of time. On the other hand, all sites meet the NO_2 UK air quality annual mean objective (40 $\mu g.m^{-3}$).
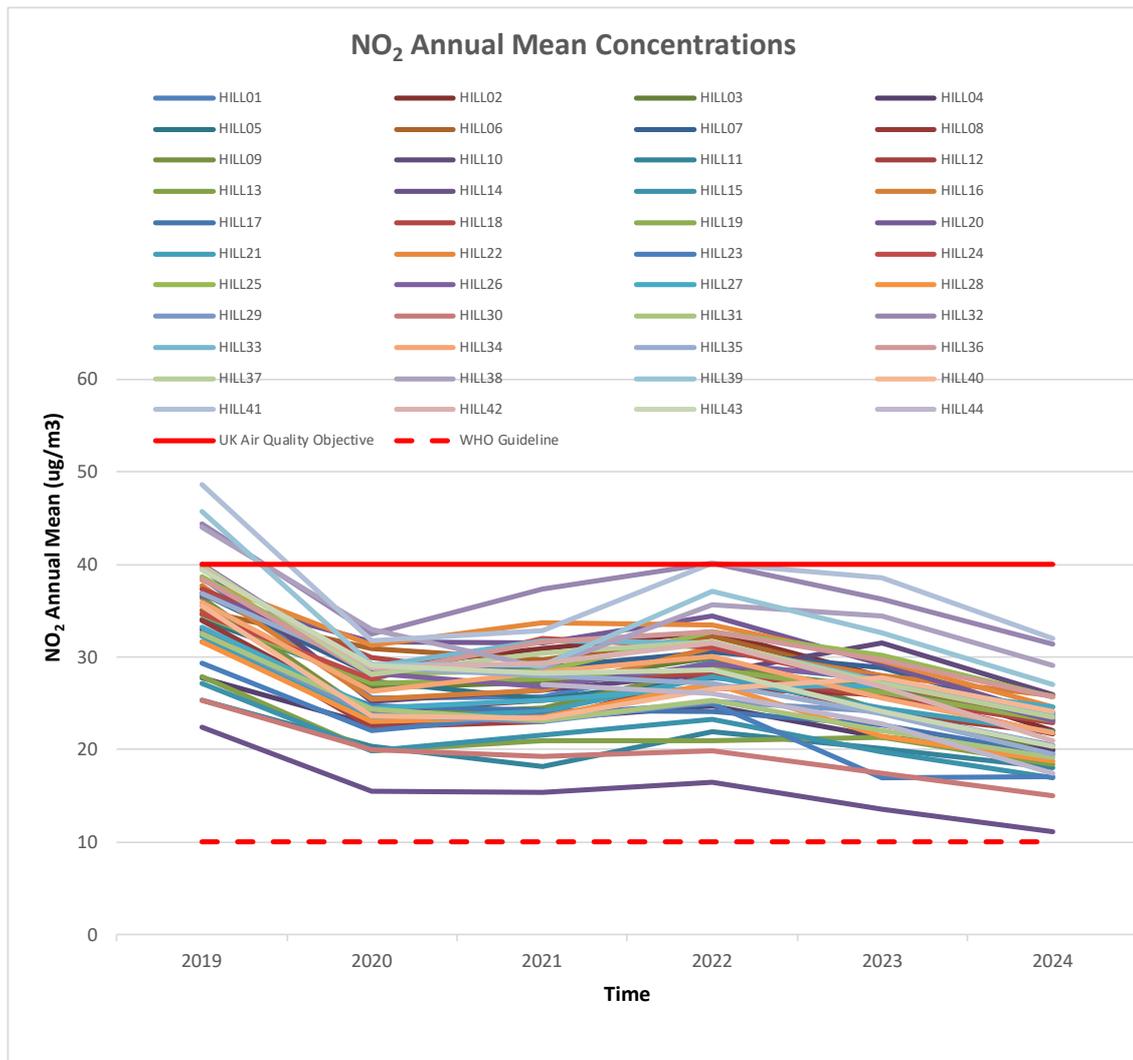
Figure 6. Annual mean NO_2 concentrations measured at the diffusion tube locations, 2019-2024, showing data for each site in the Borough. Units: $\mu g.m^{-3}$.

Regarding particulate matter concentrations (PM_{10} and $PM_{2.5}$), no increases were observed for either fraction, with decreases of PM_{10} (Figure 7) ranging from 1 to 8 $\mu g.m^{-3}$ (Hillingdon Oxford Avenue HI3), and decreases of $PM_{2.5}$ of 1 $\mu g.m^{-3}$ being observed only at sites Heathrow (LHR2) and London Hillingdon (HIL) in 2024, with the remaining locations maintaining 2023 levels. Hillingdon Oxford Avenue (HI3) has registered the highest decrease of PM_{10} of 8 $\mu g.m^{-3}$ in relation to 2023 levels,

reflecting improvements within the A4 corridor Focus Area, followed by a decrease of 5 µg.m^{-3} observed at Hillingdon Hayes (HIL5) in relation to 2023 levels reflecting improvements within the Hayes Focus Area; both achieved through the application of the Local Action Plan , Measure 5, which requires benchmarks zero applied through the planning system within Focus Areas.

It is noted that three continuous monitoring sites from the standard LBH network exceed the WHO PM$_{10}$ guideline of 15 µg.m^{-3} : Hillingdon 1 - South Ruislip (HI1), Hillingdon 3, Oxford Avenue (HI3), and Hillingdon Hayes (HIL5) and no sites exceed the London Mayoral Objective PM$_{2.5}$ target value of 10 µg.m^{-3} across the Borough (Figures 7 and 8). On the other hand, all sites exceed the PM$_{2.5}$ WHO annual mean guideline of 5 µg m^{-3}.
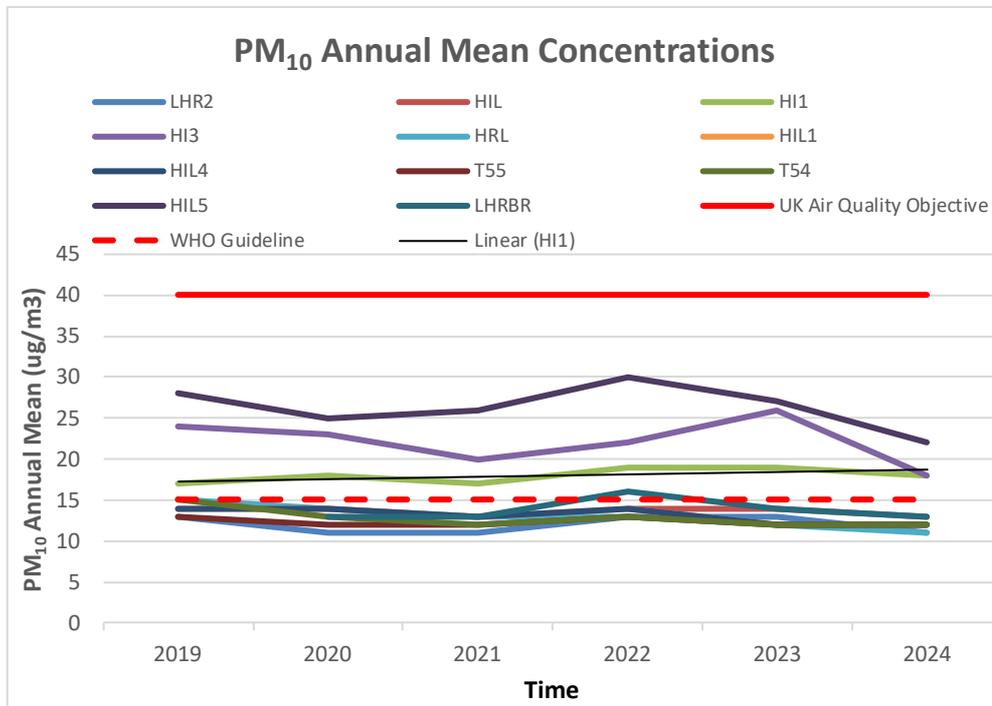
Figure 7. Annual mean PM$_{10}$ concentrations measured at the automatic monitoring stations, 2019-2024, showing data for each site in the Borough. Units: µg.m^{-3}.
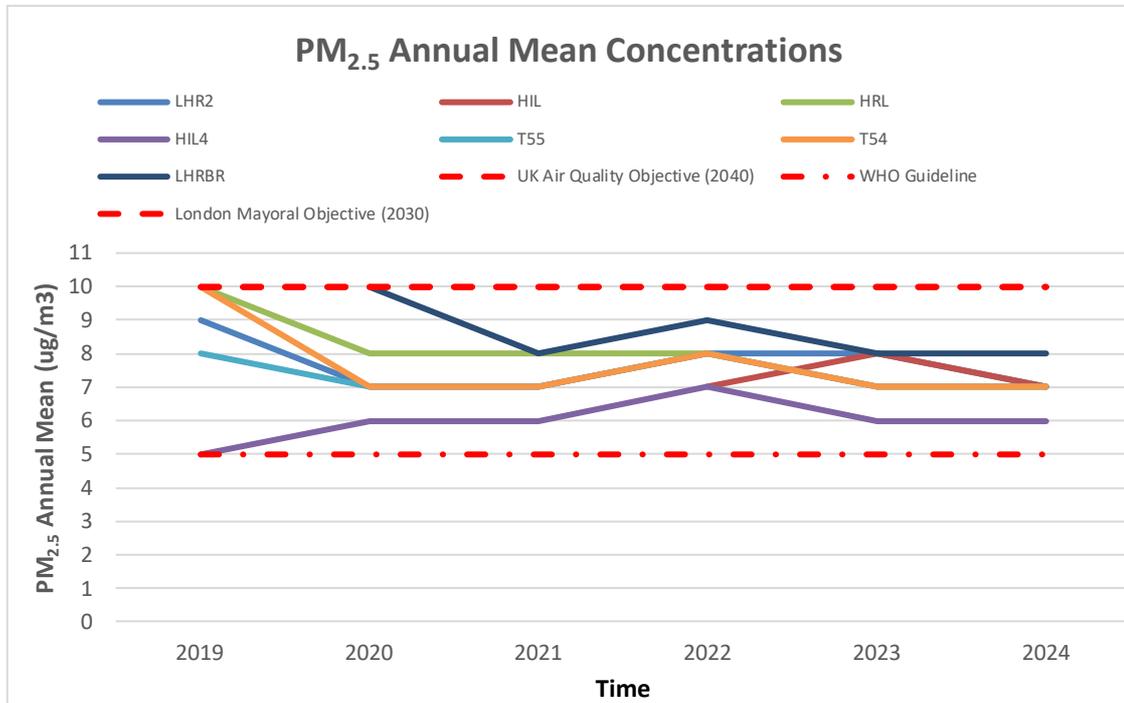
Figure 8. Annual mean PM$_{2.5}$ concentrations measured at the automatic monitoring stations, 2019-2024, showing data for each site in the Borough. Units: µg.m^{-3}.

Figures 9, 11,13, and 15 indicate hourly mean NO$_2$ concentrations measured at the low-cost sensors at Tavistock Road, Harlington High Street, Harefield Hospital and Green Lane (Northwood) for 2024. All Figures indicate that there are peaks of concentrations throughout the year. However, as reported on Table G, the annual mean value is below the national objective of 40 µg.m^{-3} at each location.

Figures 10, 12, 14 and 16 present the hourly mean PM$_{2.5}$ concentrations measured at the low-cost sensors at Tavistock Road, Harlington High Street, Harefield Hospital and Green Lane (Northwood) for 2024. All Figures indicate that there are peaks in concentration throughout the year. Results show that the annual mean in relation to the WHO guideline of 5 µg.m^{-3} is being exceeded at each location (See Table L).

It is noted that all of the low cost sensor sites exceed the WHO NO$_2$ daily guideline value of 25 µg.m^{-3} and the WHO PM$_{2.5}$ daily guideline value of 15 µg m^{-3}.
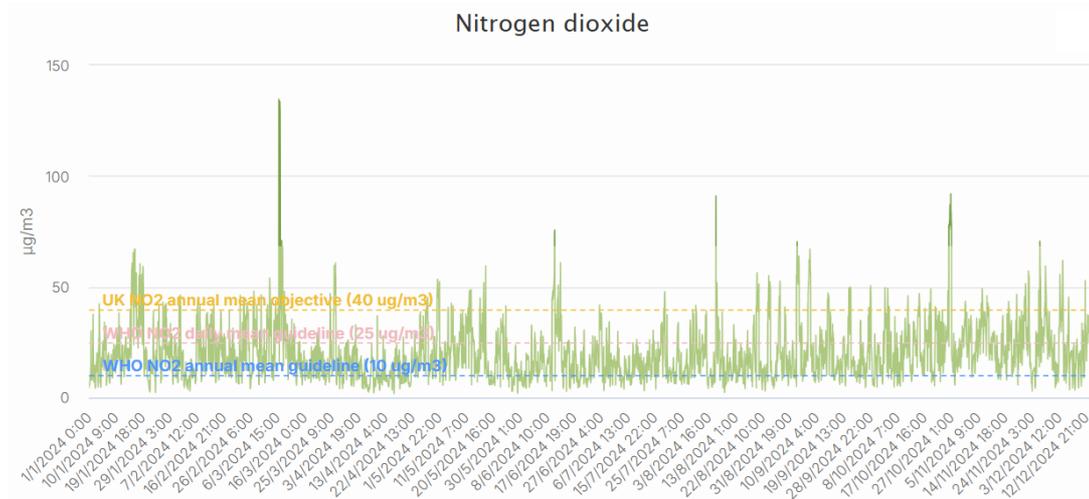
Figure 9. Hourly mean NO$_2$ concentrations measured at the low-cost sensor at Tavistock Road, 1st January to 31st December 2024. Units: μg.m^{-3}.
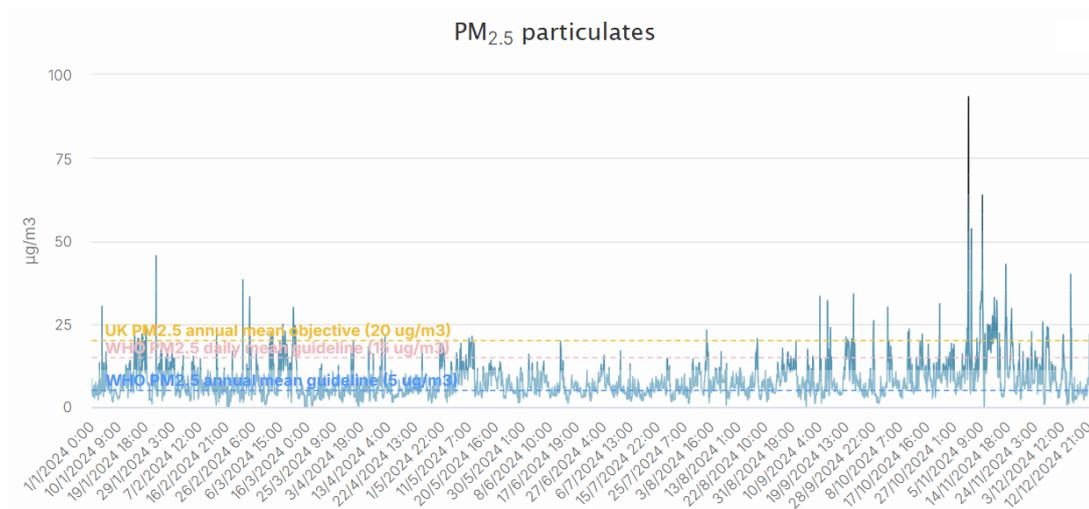
Figure 10. Hourly mean PM$_{2.5}$ concentrations measured at the low-cost sensor at Tavistock Road, 1st January to 31st December 2024. Units: μg.m^{-3}.
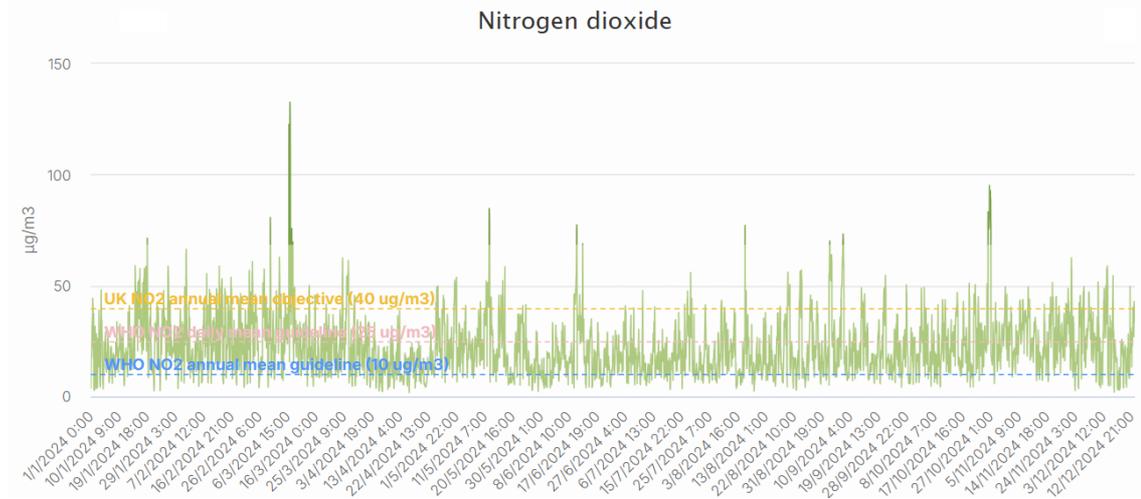
Figure 11. Hourly mean NO$_2$ concentrations measured at the low-cost sensor at Harlington High Street, 1st January to 31st December 2024. Units: µg.m^{-3}.
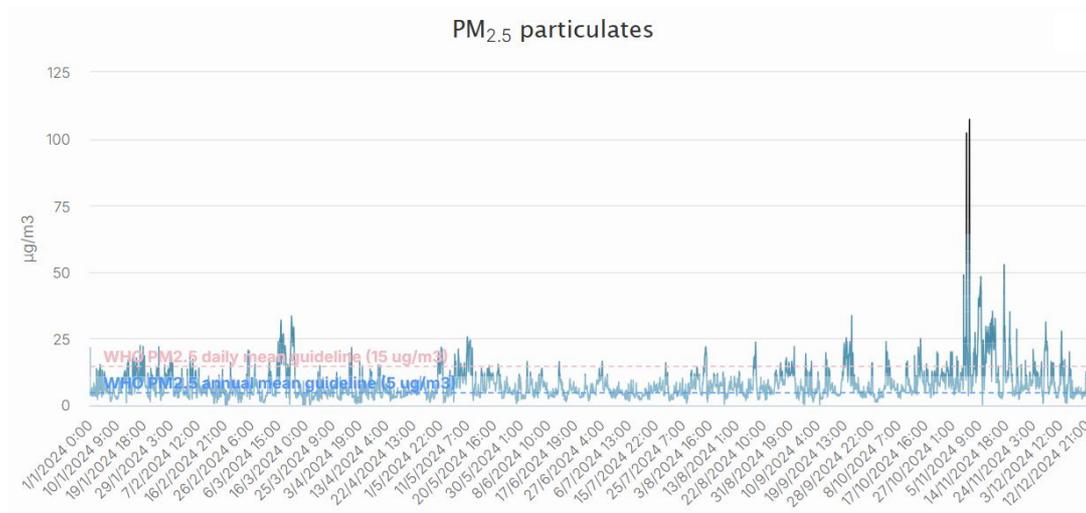
Figure 12. Hourly mean PM$_{2.5}$ concentrations measured at the low-cost sensor at Harlington High Street, 1st January to 31st December 2024. Units: µg.m^{-3}.
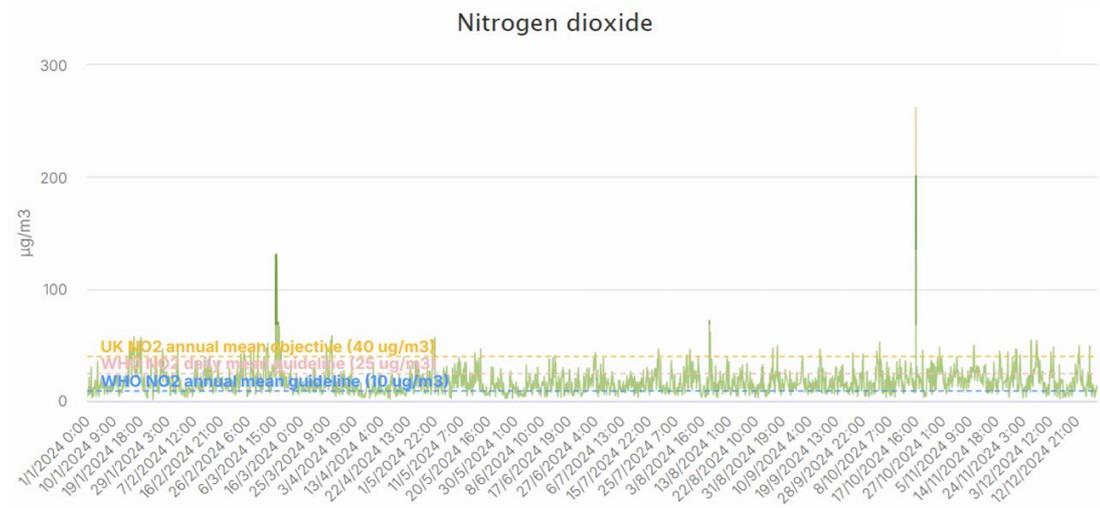
Figure 13. Hourly mean NO$_2$ concentrations measured at the low-cost sensor at Harefield Hospital, 1st January to 31st December 2024. Units: μg.m^{-3}.
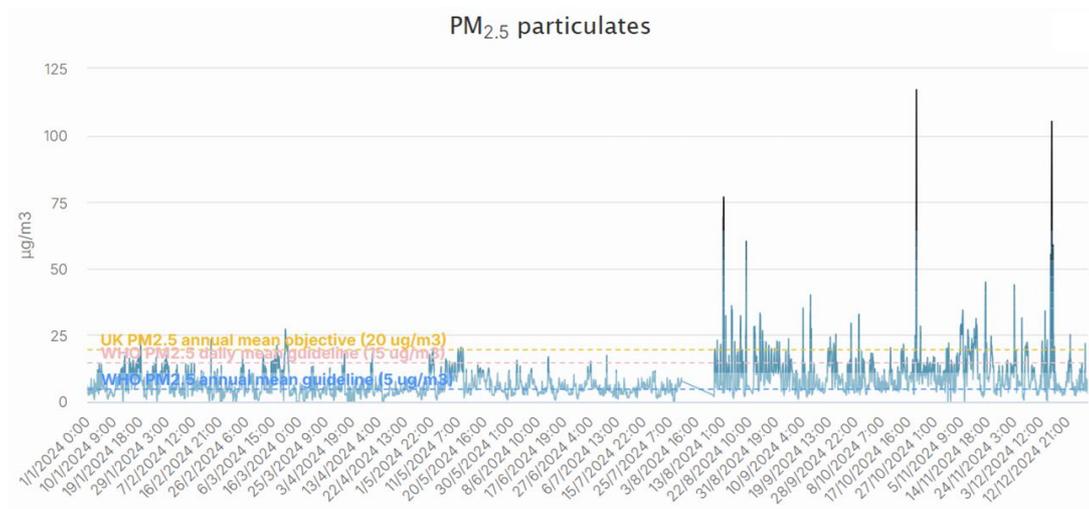
Figure 14. Hourly mean PM$_{2.5}$ concentrations measured at the low-cost sensor at Harefield Hospital, 1st January to 31st December 2024. Units: μg.m^{-3}.
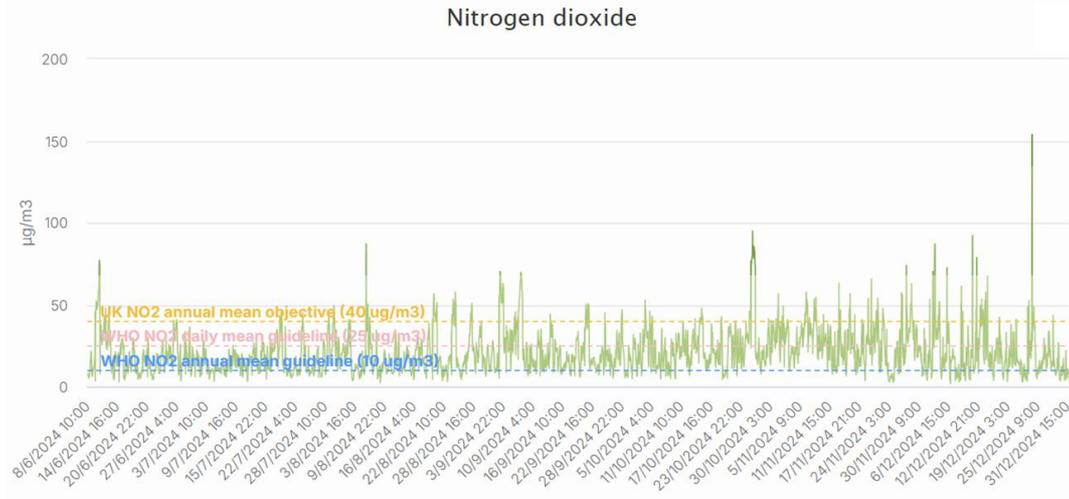
Figure 15. Hourly mean NO$_2$ concentrations measured at the low-cost sensor at Green Lane (Northwood), 8th June to 31st December 2024. Units: µg.m^{-3}.
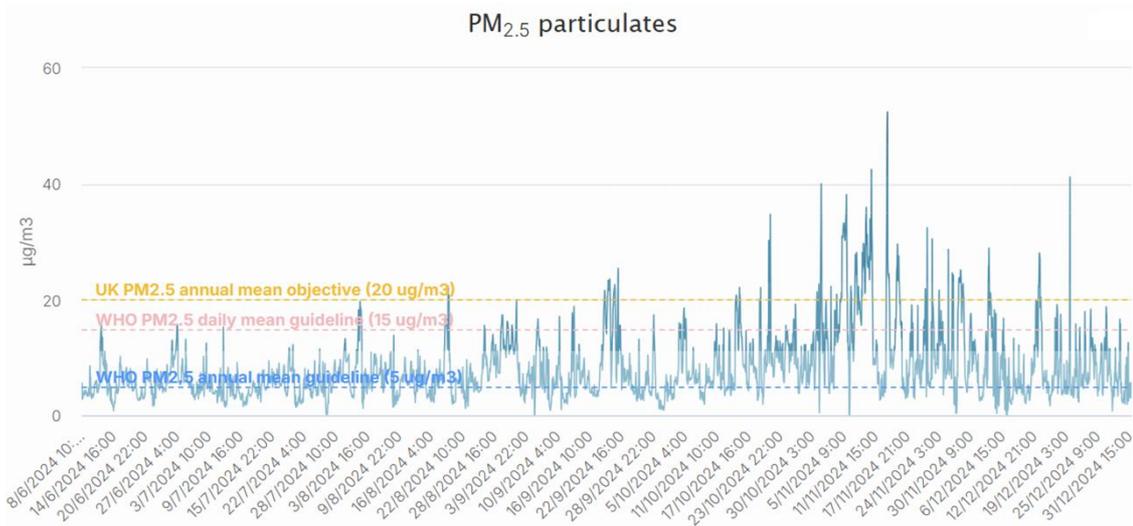
Figure 16. Hourly mean PM$_{2.5}$ concentrations measured at the low-cost sensor at Green Lane (Northwood), 8th January to 31st December 2024. Units: µg.m^{-3}.

The figures above are supplemented by the following tables that provide data for the last seven years for each monitoring site:

- Table E. Annual Mean NO$_2$ Ratified Monitoring Concentrations (µg.m^{-3}) at automatic monitoring sites.
- Table F. Annual Mean NO$_2$ Ratified and Bias-adjusted Monitoring Concentrations (µg.m^{-3}) at diffusion tube sites.
- Table H. NO$_2$ Automatic Monitor Results: Comparison with 1-hour Mean Objective.
- Table I. Annual Mean PM$_{10}$ Automatic Monitoring Results (µg.m^{-3}).

- Table J. PM_{10} Automatic Monitor Results: Comparison with 24-Hour Mean Objective.
- Table K. Annual Mean $PM_{2.5}$ Automatic Monitoring Results ($\mu g.m^{-3}$).

In addition, Tables G and L present data for 2024 at the four locations (Tavistock Road, Harlington High Street, Harefield Hospital, and Green Lane - Northwood) where Low-Cost Sensors were deployed:

- Table G. Annual Mean NO_2 Monitoring Concentrations at Low-Cost Sensor sites ($\mu g.m^{-3}$).
- Table L. Annual Mean $PM_{2.5}$ Monitoring Concentrations at Low-Cost Sensor sites ($\mu g.m^{-3}$).

Analysis of all Tables (E to L) indicates there are no locations in the Borough where the national limit values and objectives for pollutants NO_2 and PM were exceeded in 2024 according to monitoring data. However, the WHO Air Quality Guidelines were exceeded at all locations for both pollutants.

Table E.   Annual mean NO₂ ratified monitoring results (µg m⁻³) for the automatic monitoring sites in Hillingdon for the period 2018-2024.

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period % [a]	Valid dat capture, 2024, % [b]	Annual Mean Concentration (µg.m⁻³)						
						2018	2019	2020	2021	2022	2023	2024
LHR2	508600	176700	Airport	99.67	99.67	**43**	**42**	25	25	30	32	29
HIL[c)]	506951	178605	Urban background	99.12	99.12	**46**	**45**	28	25	28	25	23
HI1[d)]	510857	184917	Roadside	99.59	99.59	_36_ [d]	34	16	27	28	24	20
HI3	509557	176994	Roadside	76.47	76.47	35	33	22	25	29	27	27
HRL	508295	177800	Airport	96.14	96.14	30	31	20	20	24	22	19
SIPS	507325	177282	Urban background	98.47	98.47	30	30	19	19	24	23	22
HIL1	505561	177661	Roadside	93.4	93.4	25	28	18	16	19	18	16
T55	505207	177072	Urban background	83.06	84.06	30	31	19	20	26	21	18
T54	505729	174496	Airport	99.61	99.61	28	26	17	19	20	20	18
HIL5	510303	178882	Roadside	99.81	99.81	**43**	**41**	31	34	34	34	29
LHRBR	508279	176949	Roadside	98.19	99.19	-	-	**44.5** (_39.5_)	34	_36_	_36_	32

Notes:

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

Exceedance of the NO₂ annual mean AQO of 40 µg m⁻³ are shown in **bold**. (no such cases are present in 2024)

Equal and above 36 µg m⁻³ are shown underlined. (no such cases are present in 2024).

NO₂ annual means in excess of 60 µg m⁻³, indicating a potential exceedance of the NO₂ hourly mean AQS objective are shown in **bold** and underlined (no such cases are present in 2024).

Results have been distance corrected where applicable (no such cases are present in 2024).

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%. No such cases are present in 2024.

Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

[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] this site is collocated with HILL01

[d] this site is collocated with HILL03

Table F. Annual mean NO₂ ratified and adjusted monitoring results (µg m⁻³) diffusion tubes for diffusion tubes in Hillingdon for the period 2018-2024.

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period % [a]	Valid data capture, 2024, % [b]	Annual Mean Concentration (µg.m⁻³)						
						2018	2019	2020	2021	2022	2023	2024
HILL01 [c]	506926	178614	Roadside	100.0	100.0	**42**	38.6	25.6	25.7	29.4	27.5	24.0
HILL02	505996	184058	Roadside	83.3	83.3	**40.7**	36.9	28.9	30.9	32.8	27.9	22.1
HILL03 [c]	510821	184923	Roadside	100.0	100.0	**43.4**	35.5	26.7 d	27.3	30.0	24.2	19.8
HILL04	507617	182506	Roadside	100.0	100.0	28.5	27.8	22.6	23.3	24.7	21.3	20.0
HILL05	506989	181920	Roadside	100.0	100.0	33.4	34.1	27.4	25.4	27.8	26.7	24.0
HILL06	506243	185653	Roadside	100.0	100.0	37.6	35.0	30.9	29.7	32.2	27.6	23.2
HILL07	509918	179015	Roadside	100.0	100.0	37.7	36.9	28.1	28.8	30.5	28.8	23.7
HILL08	509798	178654	Roadside	100.0	100.0	33.9	33.9	24.1	25.3	26.7	25.9	21.7
HILL09	508758	177718	Roadside	100.0	100.0	37.2	36.4	23.8	24.5	28.8	26.7	23.5
HILL10	508414	177125	Roadside	100.0	100.0	39.6	39.7	25.2	26.4	28.3	31.5	26.0
HILL11	505736	177752	Roadside	83.3	83.3	28.5	25.3	20.3	18.2	21.9	20.1	18.0
HILL12	504851	176770	Roadside	100.0	100.0	36	33.0	22.4	23.0	28.2	24.0	21.8
HILL13	505731	180288	Roadside	91.7	91.7	29.5	27.9	19.9	21.0	21.0	21.3	18.4
HILL14	505299	190923	Background	100.0	100.0	20.5	22.4	15.5	15.4	16.5	13.6	11.1
HILL15	511889	186563	Roadside	100.0	100.0	26.9	27.2	19.9	21.6	23.3	19.7	16.9
HILL16	505920	177188	Roadside	100.0	100.0	38.6	37.7	25.4	26.4	31.0	28.0	25.8
HILL17	510361	179820	Background	100.0	100.0	31	31.6	24.7	24.2	24.1	22.6	19.6
HILL18	509683	179486	Roadside	91.7	91.7	38.5	37.4	29.9	27.6	28.3	25.7	22.9
HILL19	506108	180493	Background	100.0	100.0	35	34.6	27.1	27.6	28.7	26.2	23.1
HILL20	506503	179510	Background	100.0	100.0	36.6	36.6	31.6	31.5	34.5	29.2	23.6
HILL21	507141	179628	Background	100.0	100.0	34.9	32.3	23.4	24.1	27.9	24.5	21.9
HILL22	507649	184611	Roadside	100.0	100.0	**42.4**	38.3	31.3	33.7	33.5	29.6	24.6
HILL23	506143	185395	Background	91.7	91.7	35.1	29.3	22.1	23.8	25.0	17.0	17.1
HILL24	506035	183611	Roadside	100.0	100.0	36.9	34.7	27.6	32.0	31.1	27.0	23.5
HILL25	508773	177352	Background	100.0	100.0	39.3	38.7	28.3	28.5	32.8	30.2	25.7
HILL26	509499	178370	Roadside	100.0	100.0	**42**	**40.0**	28.2	26.8	29.2	27.7	23.1
HILL27	509755	179934	Roadside	100.0	100.0	32.5	33.2	24.5	25.3	26.8	26.9	24.6
HILL28	509328	179603	Roadside	83.3	83.3	31.7	31.7	23.0	23.5	27.1	21.4	18.8
HILL29	505906	178497	Background	100.0	100.0	-	32.6	23.7	23.0	25.2	24.1	20.4
HILL30	507612	185118	Background	91.7	91.7	-	25.3	20.0	19.2	19.9	17.4	15.0
HILL31	511103	181097	Background	100.0	100.0	-	32.5	24.3	23.2	25.3	22.0	19.2
HILL32	510664	188599	Background	100.0	100.0	-	**44.4**	32.5	37.4	40.1	<u>36.3</u>	31.4

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period % [a]	Valid data capture, 2024, % [b]	Annual Mean Concentration (µg.m⁻³)						
						2018	2019	2020	2021	2022	2023	2024
HILL33	510284	190524	Roadside	100.0	100.0	-	39.5	29.0	31.8	31.5	27.4	23.7
HILL34	509900	190648	Roadside	100.0	100.0	-	35.9	26.3	28.4	30.1	25.6	21.9
HILL35	510055	186080	Roadside	100.0	100.0	-	36.9	28.9	28.0	27.2	23.9	19.5
HILL36	509275	187340	Roadside	91.7	91.7	-	38.5	28.1	31.6	32.7	29.7	25.7
HILL37	509097	187597	Roadside	91.7	91.7	-	39.9	28.1	30.4	31.7	27.1	23.5
HILL38	509525	176949	Roadside	100.0	100.0	-	**44.0**	33.0	28.9	35.6	34.4	29.1
HILL39	506000	176969	Roadside	100.0	100.0	-	**45.7**	29.2	29.1	37.1	32.6	27.0
HILL40	507316	177576	Roadside	91.7	91.7	-	35.5	23.6	23.4	26.6	27.8	24.1
HILL41	507369	176966	Roadside	100.0	100.0	-	**48.7**	31.8	32.9	40.1	<u>38.6</u>	32.0
HILL42	506192	185614	Roadside	91.7	91.7	-	39.6	28.9	29.3	31.5	26.8	21.0
HILL43	510134	187086	Roadside	100	100	-	39.4	29.1	28.2	28.6	24.1	20.3
HILL44	508162	191784	Roadside	100	100	-	-	-	27.0	26.1	22.8	17.4

Notes:

☒ Annualisation has been conducted where data capture is <75% and >25% in line with LLAQM.TG19. (no such cases are present in 2024)

☒ Diffusion tube data has been bias adjusted

☒ Reported concentrations are those at the location of the monitoring site (bias adjusted and annualised, as required), i.e. prior to any fall-off with distance correction.
The annual mean concentrations are presented as µg.m⁻³.
Exceedances of the NO₂ annual mean objective of 40 µg.m⁻³ are shown in **bold**. (no such cases are present in 2024). Exceedance of 36 µg m⁻³ is shown <u>underlined</u>. <u>(no such cases are present in 2024)</u>
NO₂ annual means in excess of 60 µg m⁻³, indicating a potential exceedance of the NO₂ hourly mean AQS objective are shown in **bold** and <u>underlined</u> (no such cases are present in 2024)
[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] This is a triplicate measurement.

Table G. Low-Cost Sensors: Annual mean NO₂ ratified monitoring results (µg.m⁻³) for the period 2021-2024.

Site Name	Location	Valid data capture for monitoring period % [a]	Valid data capture, 2024, % [b]	Annual Mean Concentration (µg.m⁻³)			
				2021	2022	2023	2024
Tavistock Road	in front of 69 Tavistock Rd, West Drayton UB7 7QT	100	100	24.1	23.1	20.7	20.0
Harlington High Street	485A High Street, Harlington, UB3 5DL	97.0	97.0	-	26.7	24.4	22.2

Site Name	Location	Valid data capture for monitoring period % [a]	Valid data capture, 2024, % [b]	Annual Mean Concentration ($\mu g.m^{-3}$)			
				2021	2022	2023	2024
Harefield Hospital		95.3	95.3	-	-	-	17.2
Green Lane, Northwood		94.4	50.0	-	-	-	20.9

Notes
(a) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year
(b) Data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%)

Table H. NO$_2$ automatic monitoring results for Hillingdon for the period 2018-2024: Comparison with 1-hour mean objective, showing the number of 1-hour means where NO$_2$ > 200 µg.m^{-3}.

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period % [a]	Valid data capture 2024 % [b]	Number of Hourly Means > 200 µg.m^{-3}						
						2018	2019	2020	2021	2022	2023	2024
LHR2	508600	176700	Airport	99.67	99.67	0	1	0	0	0	0	0
HIL	506951	178605	Urban background	99.12	99.12	0	0	0	0	0	0	0
HI1	510857	184917	Roadside	99.59	99.59	0	0	0	0	0	0	0
HI3	509557	176994	Roadside	76.47	76.47	0	0	0	0	0	2	0
HRL	508295	177800	Airport	96.14	96.14	0	0	0	0	0	0	0
SIPS	507325	177282	Urban background	98.47	98.47	0	0	0	0	0	0	0
HIL1	505561	177661	Roadside	93.4	93.4	0	0	0	0	0	0	0
T55	505207	177072	Urban background	83.06	84.06	0	0	0	0	0	0	0

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period % a	Valid data capture 2024 % b	Number of Hourly Means > 200 µg.m⁻³						
						2018	2019	2020	2021	2022	2023	2024
T54	505729	174496	Airport	99.61	99.61	0	0	0	0	0	0	0
HIL5	510303	178882	Roadside	99.81	99.81	12	0	0	0	0	0	0
LHRBR	508279	176949	Roadside	98.19	99.19	-	-	-	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 NO_2 short term AQO of 200 µg m⁻³ over the permitted 18 hours per year are shown in **bold**. (no instances)

Where valid data are available for less than 85% of a full year, the 99.8th percentile of 1-hour means is provided 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%)

Table I.   Annual Mean PM$_{10}$ Automatic Monitoring Results (µg.m^{-3}) for the period 2018-2024.

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period % [a]	Valid data capture 2024 % [b]	Annual Mean Concentration (µgm^{-3})						
						2018	2019	2020	2021	2022	2023	2024
LHR2	508600	176700	Airport	92.28	92.28	15	14	13	11	11	13	11
HIL	506951	178605	Urban background	99.7	99.7	N/A	N/A	N/A	N/A	N/A	14	13
HI1	510857	184917	Roadside	91.61	91.61	17	17	17	18	17	19	18
HI3	509557	176994	Roadside	95.98	95.98	19	24	24	23	20	22	18
HRL	508295	177800	Airport	99.68	99.68	15	15	15	14	13	13	11
HIL1	505561	177661	Roadside	99.52	99.52	23	18	15	16	14	16	13
HIL4	505671	177605	Urban background	92.49	92.49	14	16	14	15	13	14	12
T55	505207	177072	Urban background	98.44	98.44	13	14	13	12	12	13	12
T54	505729	174496	Airport	99.67	99.67	14	15	15	13	12	13	12
HIL5	510303	178882	Roadside	95.98	95.98	27	30	28	25	26	30	22
LHRBR	508279	176949	Roadside	98.19	98.19	-	-	-	14	14	16	13

Notes:

The annual mean concentrations are presented as µg m^{-3}.

Exceedance of the PM$_{10}$ annual mean AQO of 40 µg m^{-3} are shown in **bold** (no instances).

All means have been "annualised" in accordance with LLAQM Technical Guidance, if valid data capture is less than 75% and more than 25%.(no instances).

[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 J. PM$_{10}$ Automatic Monitoring Results: Comparison with 24-Hour Mean Objective, Number of PM$_{10}$ 24-Hour Means > 50 µg m^{-3} for the period 2018-2024

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period % [a]	Valid data capture 2024 % [b]	Number of Daily Means > 50 µgm^{-3}						
						2018	2019	2020	2021	2022	2023	2024
LHR2	508600	176700	Airport	92.28	92.28	1	6	0	0	2	1	0
HIL	506951	178605	Urban background	99.7	99.7	N/A	N/A	N/A	N/A	0	3	0
HI1	510857	184917	Roadside	91.61	91.61	1	3	1	0	4	1	0
HI3	509557	176994	Roadside	95.98	95.98	2	4	6	0	1	4	3
HRL	508295	177800	Airport	99.68	99.68	1	6	1	0	2	0	0
HIL1	505561	177661	Roadside	99.52	99.52	1	0	0	0	0	0	0
HIL4	505671	177605	Urban background	92.49	92.49	0	1	0	0	0	0	0
T55	505207	177072	Urban background	98.44	98.44	1	4	0	0	2	0	0
T54	505729	174496	Airport	99.67	99.67	1	4	0	0	2	0	0
HIL5	510303	178882	Roadside	95.98	95.98	22	25	16	25	23	16	6
LHRBR	508279	176949	Roadside	98.19	98.19	-	-	0	0	4	1	0

Notes:

Exceedance of the PM$_{10}$ 24-hour mean objective (50 µg m^{-3} over the permitted 35 days per year) are shown in **bold**. Where the period of valid data is less than 85% of a full year, the 90.4th percentile is 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%)

Table K. Annual Mean PM$_{2.5}$ Automatic Monitoring Results (µg.m^{-3}) for the period 2018-2024

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid data capture for monitoring period % [a]	Valid data capture 2024 % [b]	Annual Mean Concentration (µgm^{-3})						
						2018	2019	2020	2021	2022	2023	2024
LHR2	508600	176700	Airport	92.28	92.28	9	8	9	7	7	8	7
HIL	506951	178605	Urban background	99.7	99.7	N/A	N/A	N/A	N/A	N/A	7	7
HRL	508295	177800	Airport	99.68	99.68	9	9	10	8	8	8	7
HIL4	505671	177605	Urban background	92.49	92.49	7	6	5	7	6	7	6
T55	505207	177072	Urban background	98.44	98.44	8	7	8	7	7	8	7
T54	505729	174496	Airport	99.67	99.67	9	10	10	7	7	8	7
LHRBR	508279	176949	Roadside	98.19	98.19	-	-	-	11	8	9	8

Notes:

The annual mean concentrations are presented as µg m^{-3}.

Exceedance of the PM$_{2.5}$ annual mean AQO of 25 µgm^{-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 L.   Low-Cost Sensors: Annual mean PM$_{2.5}$ ratified monitoring results (µg m^{-3}) for the period 2021-2024.

Site Name	Location	Valid data capture for monitoring period % [a]	Valid data capture, 2024, % [b]	Annual Mean Concentration (µg.m^{-3})			
				2021	2022	2023	2024
Tavistock Road	in front of 69 Tavistock Rd, West Drayton UB7 7QT	100	100	_12.2_	_10.6_	8.5	7.9
Harlington High Street	485A High Street, Harlington, UB3 5DL	97.0	97.0	-	-	_10.5_	7.7
Harefield Hospital	Harefield Hospital UB9	95.3	95.3	-	-	-	7.6
Green Lane, Northwood	In lamppost in front of 68A Green Lane, Northwood, HA6 2XS	94.4	50.0	-	-	-	8.1

Notes:
The annual mean concentrations are presented as µg m^{-3}.
Exceedance of the PM$_{2.5}$ annual mean AQO of 25 µgm^{-3} are shown in **bold**.
Exceedance of the PM$_{2.5}$ annual mean target of 10 µgm^{-3} are shown in _italics 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%)

2.5 HS2 Monitoring Data

Construction work on HS2 has continued in 2024 within Hillingdon. According to the master plan of works, the route starts at London Euston and tunnels for 13 miles to surface into Hillingdon at South Ruislip.

HS2 has established several diffusion tubes for NO_2 in the Borough. Six of these are along the lorry routes serving the construction activities, one is a co-location tube with a continuous monitor and four are on roads not impacted by the HS2 construction activities to act as controls. Details for these sites are shown in Table M and bias adjusted (using 2024 national bias adjustment for 20% TEA in water for roadside locations, 0.75, Socotec, Didcot) monitoring results for 2024 are presented in Table N.

Table M. Details of HS2 Diffusion Tubes in Hillingdon in 2024.

Site ID	Site location	Location type	X coordinate	Y coordinate	Height (m)	Site purpose
HS2-000020BNT	Lamp post on Pembroke Road	Background	509678	187214	2.5	Background not affected by scheme
HS2-000020BNU	Cowley Road sign post at junction with Hillingdon Road	Roadside	505492	183926	2.5	Roadside not affected by scheme
HS2-000020BNV	High Street sign post at junction with Pembroke Road	Roadside	509439	187117	2.3	Roadside not affected by scheme
HS2-000020BNW	Signpost on A4020 Uxbridge Road at junction with Long Lane	Roadside	507365	182687	2.5	Roadside not affected by scheme
HS2-000020BP8	Triplicate site at South Ruislip roadside automatic monitoring station	Roadside	510858	184916	2.5	Colocation roadside
HS2-000020BPK	Lamp post in crescent off Swakeleys Road	Roadside	506542	186037	2.2	Predicted significant effect
HS2-000020BPL	Warren Road sign post on corner of Swakeleys Road and Warren Road	Roadside	506240	185660	2.3	Predicted significant effect
HS2-000020BPN	Lamp post on B467	Roadside	506767	186224	2.3	Predicted significant effect
HS2-000020BQH	Lamp post on High Road Ickenham	Roadside	508451	186879	2.4	Predicted significant effect
HS2-000020BQN	Lamp post on Park Road	Roadside	506176	185444	2.4	Predicted significant effect
HS2-000020BQP	Sign post on Long Lane	Roadside	507614	184663	2.1	Predicted significant effect

Table N. Diffusion tube results for NO$_2$ from the HS2 study in 2024, bias adjusted. Units: ug.m^{-3}.

Site ID	Site location	Location type	2018	2019	2020	2021	2022	2023	2024 raw	2024 adjusted
HS2-000020BNT	Lamp post on Pembroke Road	Background	25.3	23.4	20.3	23.4	20.8	13.5	18	14
HS2-000020BNU	Cowley Road sign post at junction with Hillingdon Road	Roadside	**45.8**	**41.1**	33.7	<u>38.7</u>	<u>37.4</u>	27.8	35	26
HS2-000020BNV	High Street sign post at junction with Pembroke Road	Roadside	**43**	<u>37.7</u>	30.5	33.3	32.4	23.5	30	23
HS2-000020BNW	Signpost on A4020 Uxbridge Road at junction with Long Lane	Roadside	**46.4**	**40.9**	31.9	<u>37.8</u>	<u>35.7</u>	26.1	30	23
HS2-000020BPK	Lamp post in crescent off Swakeleys Road	Roadside	35.8	34.9	27.8	31.5	28.2	21.3	27	20
HS2-000020BPL	Warren Road sign post on corner of Swakeleys Road and Warren Road	Roadside	**41.3**	<u>37.6</u>	31.4	32.4	30.7	21.5	27	20
HS2-000020BPN	Lamp post on B467	Roadside	31	31	25	29.7	29.1	21.7	30	23
HS2-000020BQH	Lamp post on High Road Ickenham	Roadside	**42**	<u>38</u>	30	35.1	<u>36.5</u>	27.8	35	26
HS2-000020BQN	Lamp post on Park Road	Roadside	**50**	**45**	33	<u>37.8</u>	34.9	24.3	31	23
HS2-000020BQP	Sign post on Long Lane	Roadside	**42**	**41**	31	33.3	34.0	22.8	28	21
HS2-000020BP8	Triplicate site at South Ruislip roadside automatic monitoring station	Roadside	<u>37.8</u>	<u>36.4</u>	27.5	30.6	28.2	21.8	24	18

Note: Values exceeding the NO$_2$ Annual Mean Objective 40μgm^{-3} are in **bold** and values above 36 μgm^{-3} are <u>underlined</u>.

Analysis of results indicates that after bias adjustment using national 0.75 value, no locations register annual mean values equal or above 36 μg.m^{-3} with site HS2-000020BQH (a location predicted to be impacted by the HS2 scheme) as well as HS2-000020BNU registering the highest concentrations. It is noted that an extremely low national bias adjustment factor has been used. HS2 has reported to LBH that they will be processing the raw data using their local bias adjustment factor (to be released in the following months) and therefore results could be significantly higher than those reported in Table N above.
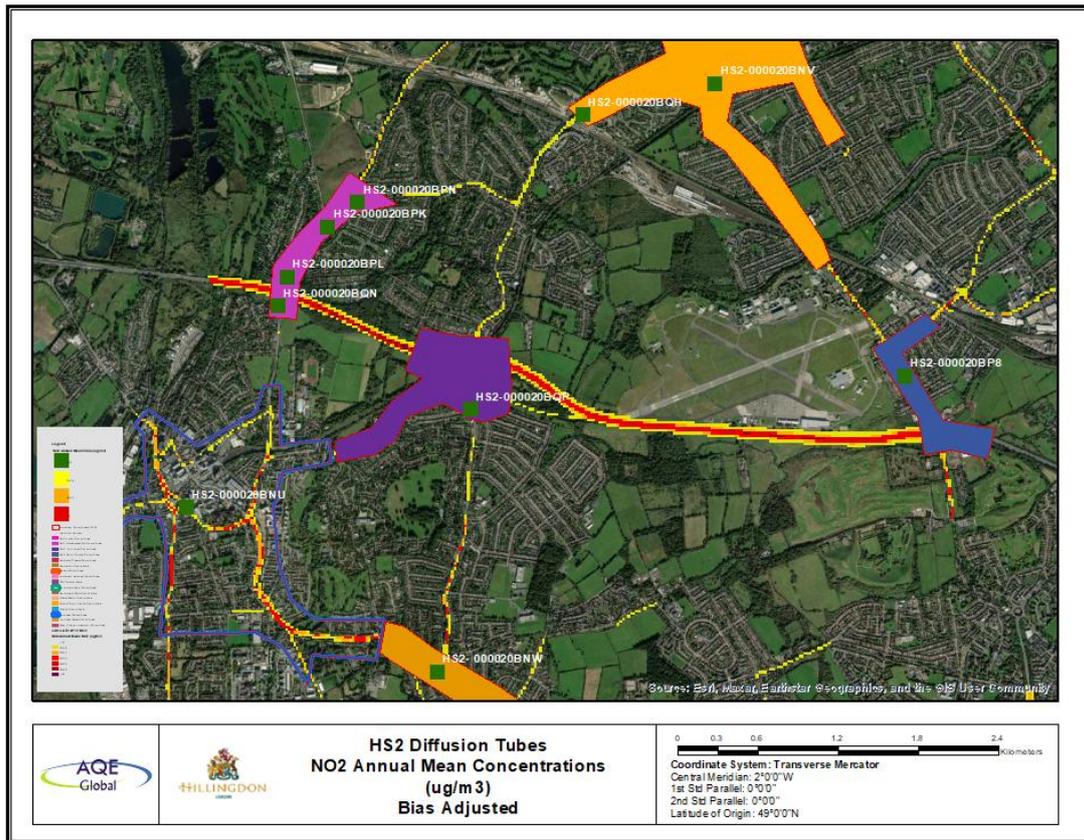
Figure 17. Annual mean NO$_2$ concentrations measured at HS2 diffusion tube locations, 2024, showing data for each site in the Borough. Units: µg.m^{-3}.

3 Actions to Improve Air Quality

3.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority should prepare an Air Quality Action Plan (AQAP) within 12 months. The AQAP should specify how air quality targets will be achieved and maintained and provide dates by which measures will be carried out.

A summary of the AQMA declared by London Borough of Hillingdon can be found in Table O. The table presents a description of the designated AQMA that is currently designated within London Borough of Hillingdon. Section 1.3 above provided a map of the AQMA (Figure 1) and the air quality monitoring locations in relation to the AQMA are presented in Figures 2, 3 and 4 in section 2 of this report. The air quality objectives pertinent to the current AQMA designation is the NO_2 annual mean.

Table O. Declared Air Quality Management Area for LBH

AQMA Name	London Borough of Hillingdon AQMA
Date of Declaration	May 2003
Pollutants and Air Quality Objectives	NO_2 Annual Mean Value
One Line Description	An area encompassing the area to the south of the railway, covering the southern half of the Borough – please see Figure 1
Is air quality in the AQMA influenced by roads controlled by Highways England?	YES
Level of Exceedance: Declaration	$36\mu gm^{-3}$
Level of Exceedance: Current Year	No exceedances
Number of Years Compliant with Air Quality Objective	2 years
Name and Date of AQAP Publication	London Borough of Hillingdon LAP 2019-2024, May 2019
Web Link to AQAP	Visit the AQAP for LBH AQMA at https://modgov.hillingdon.gov.uk/documents/s45069/Air%20Quality%20Action%20Plan%202019-2024.pdf

☒ London Borough of Hillingdon confirm the information on UK-Air regarding their AQMA(s) is up to date

☒ London Borough of Hillingdon confirm that all current AQAPs have been submitted to GLA.

3.2 ASR Highlights

3.2.1 Idling Vehicles

The Council continues to take an active participation in the issue of idling vehicles. In the calendar year 2024 there were 3,579 fines for idling vehicles were issued across the Borough. This is an increase from 1,244 reported last year.

There are currently ongoing Joint operations planned with TFL and Police for period 2024-2025 to tackle Anti-Social Behaviour (including idling) caused by private hire vehicle (PHV) drivers.

3.2.2 Fleet replacement

The Council has committed in its Climate Change Action Plan to replace all diesel powered vehicles weighing 3.5t or less before 2030 and that action is being successfully implemented. Pool cars and fully electric vans are now part of the fleet. Every fleet replacement tender must provide costs for diesel-powered and electric to support procurement processes. For 2024/25 there were three electric vehicles and five 5 hybrid pool cars in the Council's fleet, as well as 5 fully electric small size vans. It is noted that the power supply to Harlington Road Depot will require significant investment to facilitate uptake of a larger number of electric vehicles and is still a implementation constraint which the Borough is analysing how best to be solved.

This and other measures demonstrate strong linkage across policy areas, for fleet replacement between air quality and climate, but for other measures also with public health.

3.2.3 Electric vehicle charging

The Borough has recruited an EVCP (Electric Vehicle Charging Point) Project Engineer on a 3-year contract to oversee funding obtained for the upgrade and development of the charging network in Hillingdon.

There were forty-six new electric vehicle chargers going live in 2024 establishing Hillingdon's commitment to tackling climate change and creating a green and sustainable Borough. The new chargers are part of the council's new partnership with providers, APCOA, as part of its pledge to deliver a full, accessible electric vehicle (EV) charging network across the Borough by 2030.

The total of 46 new chargers includes 24 in completely new locations as well as 22 which have replaced existing EV charging points which had reached end of life.

The network of 7-kilowatt chargers will soon by complemented by a further 14 rapid charging points (22-kilowatt), to make it even more convenient for residents to charge and get back on the road.

Funding has also been sourced to provide an additional 36 charging points in a second phase of delivery, to be installed once the electrical supplies have been confirmed. Feasibility and planning work is already underway to determine and finalise these locations.

The rollout is great news for Hillingdon residents who own, or are thinking of getting an EV, and even better for HillingdonFirstcardholders who will get a discounted rate when using the chargers, of 60p p/kwh, rather than 65p p/kwh.

The new charging points are located at:

Botwell Green Car Park, Hayes (x4)
Brandville Road Car Park, West Drayton (x4)
Fairfield Road Car Park, Yiewsley (x4)
Green Lane Car Park, Northwood (x4)
Highgrove Pool Car Park, Ruislip (x2)
Hillingdon Sports and Leisure Complex Car Park, Uxbridge (x2)
Pump Lane Car Park, Hayes (x4)
Ruislip Lido Willow Lawn Car Park, Ruislip, (x8)
Civic Centre Car Park, Uxbridge (x6)
Pembroke Gardens Car Park, Ruislip (x5)
St Martin's Approach Car Park, Rusilip x3)

Rapid charging points:

Green Lane Car Park, Northwood (x4)
Ruislip Lido Willow Lawn Car Park, Ruislip (x4)
Devonshire Lodge, Eastcote (x6)

The new network of EV charging points uses the very latest technology to make them simple and easy to use and helps the Borough future-proof their facilities to meet growing demand as more residents make the switch.

The new chargers mark the council's commitment to its Electric Vehicle Infrastructure Strategy, which was announced in August 2023 and forms part of the council's strategic objectives, delivered as part of its Climate Action Plan.

3.2.4 Schools and play areas

A number of activities continue to be carried out with schools. Projects have focused particularly on active travel to school and links to the TfL STARS programme with an increased number of schools gaining higher levels of accreditation under the scheme, with anticipated status in 2024/25 being 28 Gold, 5 Silver and 4 Bronze awards. Cycle and scooter training in the Borough is continuing.

All schools continue to be alerted to No Idling webinars and other air quality related resources.

All schools have been alerted to the London Schools Pollution helpdesk. The Travel team have encouraged the use of the site in linking the activities to the individual school travel plans to help towards STARS accreditation.

All schools now have Walking Maps at school entrances and new footpaths are put in place where possible to encourage active travel and interest in air quality matters continues to increase with more schools getting engaged. All schools are encouraged to promote the school walking maps termly to parents.

The Active Travel Movement project for 23/24 which consisted of various different projects to highlight road safety and active travel within in schools has now been completed. All schools that took part have received an Active Travel Movement poster to display in their school which is a compilation of photos taken within the challenge of sustainably travelling in their school community.

Bikeability took place in 46 schools throughout 24/25 and trained 1103 pupils.

15,189 Pupils in primary education received Pedestrain Training in 24/25.

Our Dragons Den events continue to fund primary and secondary schools to set up numerous projects and events within their school communities to enhance safety and sustainable travel choices.In 24/25, Dragons Den funded another 16-school road safety and sustainable travel projects.

Schools continue to take part in practical scooter training with plans to offer to more schools in the next academic year. Another 10 schools received scooter training in 24/25.

40 schools received Theatre in Education performances based around road safety and sustainable travel issues in 24/25.

An increased number of schools continue to request air quality monitoring and improvements, and the council is discussing internally the specification of future possible projects.

3.2.5 Emissions from buildings

Significant funding has been obtained via the Public Sector Decarbonisation Scheme to provide carbon-free (and hence air pollution free) energy systems, covering the Civic Centre, Highgrove Pool, Hillingdon and Uxbridge Lido and Winston Churchill Hall.

The Borough continues to run the Boiler Repair Scheme setup to support families and individuals with repairs to boilers and other heating systems.

The Borough has approved a capital release request of £1,811k from the Gas Boilers workstream within the Housing Revenue Account Works to Stock Programme 2022/23 for the planned replacement of 735 domestic boilers. Due to the need to replace older boilers in the

Council's housing stock, a planned replacement programme over a five-year period to replace them with new energy efficient boilers is currently under way. The Property, Highways & Transport department continues to support the Council's energy efficiency drive and also more cost-efficient heating systems for residents.

3.2.6 Provision of infrastructure to promote walking and cycling

A Cycling Strategy[4] has been developed and published in 2024. A review of existing cycle infrastructure and missing links has been undertaken to form a programme of upgrade works going forward.

The council's new Cycling Strategy presents bold plans for making cycling safer and more accessible to all, through measures including new and upgraded cycle routes and by working to future-proof active travel in the Borough.

The strategy was formally launched at an event in the Closes Park, West Drayton, on Friday 27 September 2024, where local school pupils enjoyed some free cycling training and residents were invited to bring their bikes along for a free health check from Dr Bike.

Central to the council's plans is the creation of eight new dedicated cycle routes, some of which use the Borough's green spaces and towpaths so riders can avoid busy roads, which can often be daunting to new or inexperienced cyclists.

The strategy was updated to include residents' feedback following a public consultation early 2024. The consultation showed most respondents supported the draft document, with more than 70 per cent saying that they would consider cycling more and just under 90 per cent supporting the overall aims of the strategy.

Over the next 10 years the Strategy target is to see more people, of all backgrounds and abilities, confidently and safely using the Borough's cycle network and highways.

The strategy's approach will be to try and bring existing and new cyclists along for the journey by creating facilities that make them choose to ride instead of driving, but with the realism we can't have the same expectation of all motorists.

In recent years, the council has already made good ground on cycling provision, including the delivery of more and better cycle parking, improvements to towpaths to make them suitable for cycles and use in all weathers and the continuation of the council's highly popular free cycle training for children and adults. Specific improvements for cycling and walking have been made on the Grand Union Canal towpath and North Hyde Road in Hayes. Further plans are in development to promote cycling, notably through Brunel University and along the Celandine Route, whilst discussions with National Highways for improving active travel around High Street Harlington are underway.

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[4] https://www.hillingdon.gov.uk/cycling

3.2.7 Local Improvements

A range of local improvements have been introduced in 2024 including:

- The continued use of green infrastructure
- North Hyde Lane phase 2, traffic calming and pedestrian accessibility project to promote active travel.

Currently the Borough is delineating several projects to be implemented within selected zones within Focus Areas to improve air quality which will support the delivery of the new Air Quality Action Plan 2025-2030, once approved.

The Town Centre team use the Healthy Streets assessment tool as part of the scoping for future projects. The inclusion of screen planting from roadside sources and increasing green infrastructure such as street trees is included wherever it is viable.

3.3 Challenges

LBH is committed to continue improving air quality in its area of jurisdiction to safeguard its citizen's health. The WHO Air Quality Guidelines will play a central role in future years to continue to improve air quality and protect the most vulnerable groups of the population from poor air quality.

Defra's $PM_{2.5}$ target, together with the one set by the Mayor of London (both set the limit at 10 ug.m^{-3}, though London has a deadline of 2030 compared to the national deadline of 2040) will continue to drive actions at local level to reduce emissions of this pollutant. New challenges include how to further refine the planning system to significantly reduce emissions of this pollutant as well as ultrafine particulate matter (PM_1).

However, the main challenge (and opportunity!) is the use of WHO Air Quality guidelines to assess the impact of development on air quality and citizens' health. In going forward LBH will use the planning system to align these evidence-based air quality levels with a in-house impact significance criteria to assess the merit of planning applications in reducing air pollution / improving air quality with the view to protect LBH residents from poor air quality.

New sources need to be taken into account, a good example being data centres, several of which are operating or have recently been proposed for the Borough. It is noted that data centres in some parts of the country have teamed up with swimming pools to harness their waste heat and cut energy bills and emissions for the pool operators[5]. Whilst there is little current CHP use in the Borough, these sources are kept under review. Similarly, biomass burning both in industrial and domestic premises is also kept under review.

One specific challenge identified concerns the need for upgrading of power supplies to the Harlington Road Depot to enable a greater expansion of the council's electric vehicle fleet. This will require significant investment.

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[5] https://sustainabilitymag.com/articles/swimming-pool-heated-by-data-centre-to-reduce-energy-bills

3.4 Opportunities

The updated version of the LBH AQAP scheduled to run from Summer of 2025 to end of 2030, has provided an opportunity to consider additional measures targeted at the areas of highest concentration in the Borough. It will focus not only on measures aiming at reducing significantly the emissions of key pollutants (NO_2, PM_{10} and $PM_{2.5}$) into the atmosphere but also on measures aimed at changing awareness and behaviour involving schoolchildren and health professionals.

Of central relevance to the new plan to be adopted is the focus on WHO Air Quality Guidelines as a reference to assess the impact of development on citizens' health. These WHO guideline values are underpinned by overwhelming evidence of the much lower levels of pollution determined to impact on health in relation to previously established standards.

Hillingdon's Climate Action Plan represents an opportunity to reduce emissions from the Council's activities, both in relation to the Council's own operations and actions aimed at businesses and communities. There are strong links between air pollutant and greenhouse gas (GHG) emissions as both share, to a significant extent, similar sources through the combustion of fossil fuels. This represents an opportunity to lock in benefits such as the move to cleaner vehicle technology and transport modes. To maximise these benefits the Council will need to consider the effectiveness of air pollution measures on GHG control and vice-versa.

3.5 Air Quality Action Plan Progress

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

Many actions are marked as 'ongoing', for example, work on the pollutant monitoring network. These measures are fully in place, but by their nature are never 'complete'. Pollution monitoring for example will continue for as long as there is political need or social demand for it.

No further School Streets have been delivered, the implementation of these are, currently, still paused.

Table P. Delivery of Air Quality Action Plan Measures

Measure	LLAQM Action Matrix Theme	Action	March 2024/March 2025 Progress
1a	Monitoring and other core statutory duties	Maintaining and where possible expanding monitoring network	Ongoing. Current automatic network is well maintained, with the new contract for the next 4 years having been awarded to Ricardo who will continue to provide robust quality of data and good data capture. The Council has supported the Northwood Air Quality group in the application for a community Breathe London sensor which has been deployed in June 2024 at Green Lane in Northwood. The Council continues to run a local bias adjustment exercise by triplicate diffusion tube sampling collocated at HIL (London Hillingdon, HILL01) and HI1 (South Ruislip, HILL03). As part of the 2025-2030 LAP update, the Council is considering further extending its low-cost sensor network to include coverage of sensitive areas within the Borough.
1b	Monitoring and other core statutory duties	Fulfilling other statutory duties including regulation of industrial sources	Ongoing, the regulation of industrial processes is undertaken by a contractor, any requirement for enforcement action is referred back to the Council. Regulatory duties are fully up to date.
2	Emissions from buildings and development	Ensuring emissions from construction are minimised	Ongoing via the planning system. 100% of all planning applications in 2024/2025 with construction/demolition activities included the construction dust condition.
3	Emissions from buildings and development	Ensuring enforcement of Non-Road Mobile Machinery (NRMM) air quality policies (addresses emissions from e.g. building sites regarding cranes, generators, etc.)	Ongoing, via the planning system, 100% of all planning applications in 2024/2025 included the NRMM condition; Audits continue to be undertaken by Cleaner Construction for London on behalf of the Council (MAQF project). The London Borough of Hillingdon NRMM Pan London Calendar Year Report January 2024 – December 2024 indicated the following: There were 21 sites audited in 2024/25, of which 3 were self-compliant, 10 were compliant, 1 was complete and 5 had no NRMM present. There were 2 non-compliant sites either due to registration

Measure	LLAQM Action Matrix Theme	Action	March 2024/March 2025 Progress
			problems or a lack of evidence of compliance. The total number of sites registered on the GLA NRMM website was 21.
4	Emissions from buildings and development	Reducing emissions from CHP	Ongoing and enforced by planning condition where applicable. There is very little CHP in Hillingdon with only one application in the period 2024/2025 including CHP appliances as part of the proposed development.
5	Emissions from buildings and development	Enforce Air Quality Neutral (AQN) policy with more stringent application of mitigation required in the Hillingdon Focus Areas	Ongoing action via the planning system. AQN assessments requested on 100% of all planning applications in 2024/2025; Pollution damage cost calculations have been undertaken where appropriate to determine the appropriate level of mitigation required and s106 sought and secured where relevant, above and beyond the Mayor's AQN guidance to make sure total emissions are mitigated in development that affects sensitive areas. S106 ring fenced in the legal documentation as "towards initiatives to improve air quality in the affected areas and the implementation of the Local Action Plan". Conditions are applied in order to secure the measures for reduction in emissions, pollution damage costs continue to be used as the basis for s106 contributions where mitigation offered is not sufficient or appropriate. The Council will continue to seek a zero emissions approach towards developments when located in sensitive areas such as AQ Focus Areas, near vulnerable receptors such as schools, care homes, hospitals etc. using Defra's Damage Cost Toolkit to ascertain the level of mitigation required, including all sources of emissions (no exclusions of emission sources allowed within Focus Areas).
6	Emissions from buildings and development	Ensuring adequate, appropriate, and well-located green space and infrastructure is included in new developments.	Ongoing via the planning regime, specific green infrastructure barriers and green buffers are sought in areas where residential and amenity spaces are in proximity to busy roads, this is extended to footpaths and cycle pathways in association with the development in relevant cases.

Measure	LLAQM Action Matrix Theme	Action	March 2024/March 2025 Progress
			Specific planning condition is being used seeking a green infrastructure scheme designed to protect public exposure. Consideration is given to a 5% reduction in the associated pollution damage cost where bespoke pollution green infrastructure schemes are presented. This has been implemented throughout in the 2024/2025 reporting period.
7	Emissions from buildings and development	Raise awareness that Hillingdon is a declared Smoke Control Zone along with Council enforcement powers for non-compliance through an article in Hillingdon People magazine and distribution of point of sale posters/leaflets to fuel suppliers	On-going - Hillingdon has been a member of the GLA Wood Burning working group and will continue consider the use of comms material to alert businesses and also the training of enforcement officers to raise awareness on the subject. Bonfires are banned on all council allotment sites. Complaints arising from smoke, bonfires and dust emissions continue to be monitored and acted on. Bonfire ban on allotments and other enforcement measures have included in LBH Public Space Protection Order. The T's and C's[6] have been updated by Green Spaces and they include at para. 4.2, a section on the bonfire ban. The 2023 T's and C's have been communicated to all allotment leaseholders in LBH to ensure that everyone is aware of the ban. The following Parks and Open Spaces prohibitions were enacted in July 2023 when the Public Spaces Protection Order[7] was introduced: "A person commits an offence if they light or are in control of or responsible for activity involving a fire, barbecue or fireworks without the express consent of the Council -A person commits an offence if they smoke any substance including cigarettes, cigars, electronic cigarettes (vapes), herbal cigarettes or similar

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[6] Allotments - Allotment Garden Terms and Conditions 2023 (1).pdf - ttps://www.hillingdon.gov.uk/media/7290/Allotment-garden-w… .pdf
[7] Public Spaces Protection Order Appendix 1 - PSPO Parks and Public Places final 2023 UPDATED.docx - https://www.hillingdon.gov.uk/media/11567/PSPO-Parks-and-P… · PDF

Measure	LLAQM Action Matrix Theme	Action	March 2024/March 2025 Progress
			within the boundary of a children's play area -A person commits an offence if they do not extinguish a fire and/or barbecue or firework (if appropriate and safe to do so), removing all waste and/or associated items for safe disposal." Fixed Penalty Notices up to £100 can be issued for breaches of the prohibition.
8	Emissions from buildings and development	Promoting and delivering energy efficiency and energy supply retrofitting projects in workplaces and homes through EFL retrofit programmes such as RE:NEW and RE:FIT and through Borough carbon offset funds.	On-going - The implementation of the Climate Strategy will continue to ensure reductions in emissions from these sources are prioritised and achieved. Under the Public Sector Decarbonisation Scheme (PSDS) 3b, Hillingdon Council secured a central government grant funding to support the decarbonisation of four sites of which three are grade 2 listed (Civic Centre, Highgrove Pool, Hillingdon and Uxbridge Lido and leisure centre and Winston Churchill Hall) with the highest energy use across LBH Corporate assets. The total grant awarded for these projects is circa £13.5M to be Co-funded by LBH £6M. The Civic Centre will be further supported with £2.6M S106 funding requested to date. We are also requested S106 funding of Circa £2,.4m to support decarbonation works on Highgrove Pool, Hillingdon & Uxbridge lido and Leisure and Winston Churchill Theatre. Works which are being carried out for these sites are: de-commissioning of fossil fuel boilers replacing with Air source Heat pumps, New lower voltage lighting systems, insulation to roofs and walls, window replacements and in-line PV panels on roofs. All these projects were complete by the end of 2024. Following success in 2023/24 when a total of 2,006 domestic boilers were replaced, 2 domestic properties were converted from gas to Air Source Heat Pumps and 5 sites had their commercial heating plant upgraded, work to replace domestic boilers and upgrade commercial plant continued in 2024-25.

Measure	LLAQM Action Matrix Theme	Action	March 2024/March 2025 Progress
9	Emissions from buildings and development	Master planning and redevelopment areas aligned with Air Quality Positive and Healthy Streets approaches	On-going - The Council has applied an air quality positive approach to all relevant developments within sensitive locations such as Air Quality Focus Areas, and close to vulnerable receptors such as schools, care homes, hospitals etc. This is above and beyond GLA's AQ positive guidance and seeks to safeguard sensitive locations and make sure total development emissions are mitigated to the maximum possible extent which is not secured by current guidance.
10	Public health and awareness raising	Public Health department taking shared responsibility for Borough air quality issues and implementation of Air Quality Action Plans	On-going - The GLA Air Quality for Public Health document has been disseminated to the Public Health Director and to the Corporate Director.
11a	Public health and awareness raising	Development of promotional tool for use at business engagement opportunities to raise awareness of initiatives to increase active travel and improve air quality	As previous years - Whereas there was no funding available to develop the tool originally envisaged, the council has been using every opportunity to raise awareness of possible ways to increase active travel and improve air quality.
11b	Public health and awareness raising	If MAQF bid unsuccessful, seek funding for development of Hillingdon-specific promotional tool and business engagement action plan	Please see above. Whereas there was no funding available to develop the planned tool and business engagement plan, the Council has been delivering a series of events at community hubs utilising supermarkets and community halls to engage with residents and local businesses. Information on air quality such as no idling and Airtext has been included.
12	Public health and awareness raising	Supporting a direct alerts service such as AirText and promotion and dissemination of high pollution alert services	The Council continues to support and raise awareness of the Airtext services by providing relevant information including the dissemination of a video and air pollution and respiratory health booklet prepared by air quality and public health officers In North West London. The resources are being sent to all GPs in the North West Area.
13	Public health and awareness raising	Encourage schools to join the TfL STARS accredited travel planning programme	All schools continue to be alerted to No Idling webinars and other resources All schools have been alerted to the London Schools Pollution helpdesk. The Travel team have encouraged the use of the site in linking the activities to the individual school travel plans to help towards STARS accreditation.

Measure	LLAQM Action Matrix Theme	Action	March 2024/March 2025 Progress
			Anticipated TfL STaRS Accreditation status for 24/25 is: between 4-6 engaged 4 Bronze 5 Silver 28 Gold Another 17 schools are actively engaged with the STaRS team but not submitting for accreditation this year.
14	Public health and awareness raising	Air quality in and around schools - the introduction of a prioritised programme for schools in Focus Areas and/or close to busy roads for exposure reduction measures, active travel promotion and raising awareness education programmes	All schools continue to be alerted to No Idling webinars and other resources. All schools have been alerted to the London Schools Pollution helpdesk. The Travel team have encouraged the use of the site in linking the activities to the individual school travel plans to help towards STARS accreditation. All schools now have Walking Maps at school entrances and new footpaths are put in place where possible to encourage active travel and interest in air quality matters continues to increase with more schools getting engaged. Schools are encouraged to promote the school walking maps termly to parents. 13 schools signed up to be a part of the Active Travel Movement project for 24/25 which consists of various different projects to highlight road safety and active travel within in schools. All schools that took part have received an Active Travel Movement poster to display in their school which is a compilation of photos taken within the challenge of sustainably travelling in their school community. Bikeability took place in 46 schools throughout 24/25 and trained 1103 pupils. 15,189 Pupils in primary education received Pedestrian Training in 24/25. In 24/25, Dragons' Den funded another 16 school road safety and sustainable travel projects.

Measure	LLAQM Action Matrix Theme	Action	March 2024/March 2025 Progress
			Another 10 schools received scooter training in 24/25. 40 schools received Theatre in Education performances based around road safety and sustainable travel issues in 24/25.
15	Delivery servicing and freight	Council procurement policies to promote use of cleaner vehicle technologies via contract tendering process	Ongoing - The Climate Change Action Plan now has an objective to replace all diesel-powered vehicles 3.5t or less before 2030 and procurement has been adjusted to meet its objectives. All fleet vehicle replacement tenders seek two tenders one for diesel - fuelled and one for electric to foster awareness and competitive in the clean technologies market as well as allow the Council to make clear choices in terms of clean technologies. See also measure 17.
16	Delivery servicing and freight	Inclusion of opportunities in new developments and current town centre and transport improvement workstreams to reduce emissions from deliveries to local businesses and residents	See 11b Planning conditions stipulate the requirement for Delivery and Servicing plans to be a minimum of FORS silver award. This includes the requirement to report on fuel usage and emissions of CO_2, NOx and PM emissions plus a policy to actively reduce fuel consumption and minimise their environmental impact. The requirement for delivery and servicing plans to aim for achievement of gold award within an agreed timescale is being considered for developments in Air Quality Focus Areas.
17	Borough fleet	Reducing emissions from council fleets	During the course of the current action plan the Council has been active in replacing vehicles with electric or lower emission options. As of 2024/25 the Borough had 3 x Fully electric pool cars and 5 x Hybrid pool cars, as well as 5 fully electric small size vans. The Council has continued its procurement policy to improve the quality of its vehicle fleet, moving to electric and other lower emission vehicles. All purchases continue to seek two tenders – one for diesel and one for electric powered vehicles. The power supply to Harlington Road depot is restricting the purchase of any

Measure	LLAQM Action Matrix Theme	Action	March 2024/March 2025 Progress
			further electric vehicles: a large investment is needed to upgrade.
18	Localised solutions	Green Infrastructure	On-going - In 2021 the Council has developed a Tree Strategy for the Borough including actions to meet the Climate Action Plan objectives which includes to increase the tree canopy across the Borough and in particular increase tree coverage in areas of poor air quality.
19	Localised solutions	Implementation of actions to improve air quality in the Hillingdon Air Quality Focus Areas to identify short, medium, long-term solutions for measures to implement to improve air quality	In 2024/2025, design of improvements have begun for the works along North Hyde Road moving from Cranford Park Road westwards.
20	Cleaner transport	Ensuring that Transport and Air Quality policies and projects are integrated via the implementation of the Healthy Streets in LIP projects	In 2024/2025, an upgrade of the local shopping parade at Mulberry Parade, West Drayton was completed. The scheme included parking improvements to encourage active travel to the local parade. The scheme also included tree planting and rain gardens to improve the environment.
21	Cleaner transport	Discouraging unnecessary idling by taxis and other vehicles	Fixed Penalty notices continue to be issued by the Council to address idling. In 2024, 3579 Fixed Penalty Notices were issued. Ongoing Joint operations are planned with TFL and Police for 2025 to tackle ASB (including idling) caused by PHV drivers.
22	Cleaner transport	Regular temporary car free days	No temporary car free days were held. The Council considers that resource is more efficiently used on promoting air quality in the Borough in other ways, for example through participation in local events.
23	Cleaner transport	Using parking policy to reduce pollution emissions	No further action has been taken on this measure.
24a	Cleaner transport	Installation of Ultra-low Emissions Vehicle (ULEV) infrastructure (electric vehicle charging points, rapid electric charging points and hydrogen refuelling stations)	For 2024/2025, LBH has been using a dedicated email for electric vehicle charging enquires (evcp@hillingdon.gov.uk). The Highways team have now appointed an EVCP Project Engineer on a 36-month fixed term contract to

Measure	LLAQM Action Matrix Theme	Action	March 2024/March 2025 Progress
			oversee the implementation of the funds which have been awarded. Regarding the Council's own fleet, it is noted that the power supply to Harlington Road depot is restricting the purchase of any further electric vehicles: a large investment is needed to upgrade. [See also Measure 17] In 2024 a total of 46 new chargers were deployed at Hillingdon which included 24 in completely new locations as well as 22 which have replaced existing EV charging points which had reached end of life.
25a	Cleaner transport	Provision of infrastructure to support walking and cycling	The Hillingdon Cycle Strategy was launched in September 2024 and is now an overarching policy for cycling over the next 10 years. Further work has been undertaken to upgrade sections of the Grand Union Canal towpath and to improve access onto the canal, with level access being provided at Benbow Way and a cycle wheeling channel and dropped kerbs at Packet Boat Lane. Further work was undertaken on North Hyde Road, Hayes where footpaths have been widened and street trees to be provided.
25b	Cleaner transport	Air Quality Focus Area studies, Healthy Neighbourhoods schemes, Town Centre schemes will all include the identification of opportunities for increased walking and cycling	Work continues on designs to improve cycle infrastructure across the Borough most notably through Brunel University and along the Celandine Route. Discussions continue to be undertaken with National Highways over cycling, walking and environment improvements along High Street, Harlington.
26	Hillingdon-specific action: Collaborative working	Continue to work in partnership with TfL to prioritise actions required to improve local air quality in Hillingdon	The Council will continue to work closely with TFL to make sure clean public transport fleets are deployed across sensitive routes of the Borough. This is being achieved primarily through the planning system. In 2024/2025, the TfL LIP budget was used to help development and bring forward active travel schemes.

Measure	LLAQM Action Matrix Theme	Action	March 2024/March 2025 Progress
			Successful bids were made to TfL for LIP funding and also funds from a separate Cycle Network Development fund.
27	Hillingdon-specific action: Collaborative working	Continue to work in partnership with Heathrow Airport Limited (HAL), seeking clear strategy and framework to: Reduce airport related traffic; Mitigate adverse air quality impacts associated with on-airport operations	Ongoing involvement of the Council with the Heathrow AQ Working Group. TORs established and working plan in progress. There is ongoing discussions with HAL in regard to all aspects of surface transport.
28	Hillingdon-specific action: Collaborative working	Continue to work in partnership with Highways England to ensure effective mitigation of arising air quality impacts on the local communities	The Council will continue to work closely with Highways England to ensure effective and appropriate level of mitigation is secured to suitably address arising air quality impacts of motorway schemes on the local communities.
29	Hillingdon-specific action: Collaborative working	Continue to work in partnership with HS2 Ltd to ensure effective mitigation of any arising air quality impacts on the local communities relating to HS2 construction activities	The Council continues to work closely with HS2 Ltd to ensure effective and appropriate level of mitigation is deployed relating to HS2 construction activities. There is a Council working group attending HS2 meetings regularly.
30	Hillingdon-specific action: Collaborative working	Continue to work in partnership with neighbouring authorities to ensure collaboration on air quality where it will benefit the local communities	The West London cluster group continues to meet quarterly, and the Council is an active member of the group. The group continues to work closely with the GLA and the Environment Agency on how best regulate and manage Data Canters which are a rising concern in terms of $PM_{2.5}$ (and NOx) emissions during the testing and maintenance regimes over a 30 year period, specially where sensitive groups of the population are present. LBH has been sharing their practice with the Greater London Authorities in terms of capping emissions and securing those are not exceeded, as well as the conditions required.

4 Planning Update and Other New Sources of Emissions

4.1 Planning update

4.1.1 Clean by design, Air Quality Neutral, Air Quality Positive and Air Quality Focus Areas

The Council continues with its robust appraisal of planning apps and the continued push for clean by design and zero emission developments specially within LBH Air Quality Focus Areas (AQFAs) catchment regions.

London Plan's Policy Sl1 Improving Air Quality continues to give support to the Council's approach to the assessment of planning applications. Whilst the London Plan and Council's Local Plan policies aim for development to be at least air quality neutral it is recognised (paragraph 9.1.9 of the London Plan) that in some cases this is not sufficient, and that further action is needed to mitigate emissions.

This is especially important in the AQFAs where the Council seeks 'better than Air Quality Neutral' and asks for an Air Quality positive approach aiming at total emission mitigation, regardless of the size of the application and the extant use of the site.

London Borough of Hillingdon in agreement with GLA have defined its own AQFAs as reported in its Air Quality Local Action Plan acknowledging that in such sensitive areas there is potential public exposure to pollution levels above the limits set to safeguard human health and where more action is required. The Council applies a pollution damage cost to emissions arising from the potential development and seeks sufficient mitigation from the developer to reduce such emissions being brought into the Focus Area. Where the mitigation measures offered are not sufficient the remaining pollution damage costs form the basis of an s106 negotiation to improve air quality in line with the Council's AQAP Action Plan measure 5.

4.1.2 Damage Cost Calculations

It is extremely important to note that (and in alignment with the London Plan and WHO updated guidelines) that whereas not explicitly stated in the Local Action Plan, the damage cost calculations are to include both NOx and $PM_{2.5}$ emissions which are the pollutants of most concern in terms of public health.

It is also important to mention that an Air Quality Action Plan is a dynamic document being updated as and when necessary. For avoidance of doubt, the Borough is taking the required steps to amend the Plan to explicitly mention $PM_{2.5}$ emissions in measure 5. Notwithstanding this, the London Plan is quite clear in regard to the management of this air pollutant and suitable mitigation is required if the proposed development emits this pollutant; this is applicable to all sources.

4.1.3 London Atmospheric Emissions Inventory 2019 (published in 2021)

In 2021 GLA has released an updated version of the LAEI, including annual mean concentrations for NO_2 and $PM_{2.5}$. LBH has processed all the pollution data at postcode level (with centroid of the building being moved to the façade for relevant exposure assessment) to support the review and determination of planning applications for air quality. Please note the Borough uses 36ug/m^3 and above to determine areas of poor air quality to account for a root mean square error (RMSE) of 10% in relation to the annual mean limit value for NO_2 (the same principle applies to all other relevant pollutants considered, depending on the sources under scrutiny).

4.2 New or significantly changed industrial or other sources

Of particular relevance were the various planning applications that continue to be received for data centres of considerable size (both within the Borough and within neighbouring Boroughs for which LBH was consulted on); with further two having been approved.

It is important to mention that LBH considers $PM_{2.5}$ emissions, in addition to NOx emissions, need to be totally mitigated, supporting the Mayor's vision of achieving WHO targets on this pollutant. The data centre applications to date have proposed both Hydrogenated Vegetable Oil (HVO) and diesel as fuels to run the associated emergency backup generators, both emitting significant emissions of $PM_{2.5}$ and NOx into the atmosphere on an annual basis. Given the sheer number of backup generators required in a couple of submitted planning applications, the total NOx and $PM_{2.5}$ emissions per area are significant.

To address this issue the Borough have created a system to secure a plan of emission reduction and management over the 20 to 30 years lifetime of the proposals. Contrary to vehicle emissions that are expected to reduce over time, backup generators once approved will emit on an annual basis (even if just for 10 or 20 minutes of testing monthly) significant contributions to both local ambient and background levels of these pollutants in the atmosphere, without declining over time (the contrary is usually true due to aging of the gen sets and or malfunctioning in the SRC / retrofitting devices applied). In many instances, given the short time of monthly testing and or backup activities, the SCR does not operate due to the required temperature to operate only being reached after 20 minutes.

Therefore, such new sources of pollution in the Borough are posing a few challenges to the planning system and the system devised to secure a sustainable management of emissions over time will continue to be refined and improved by LBH. For new submissions applicants are advised to contact the Council in the first instance so that suitable information can be prepared and discussed at pre-app meetings.

A significant (temporary) source of pollution in the Borough was the North Hyde Gardens fire on the 20th March 2025. On the evening of 20 March 2025, a fire began at an electrical substation in Hayes, Hillingdon, London, leading to the closure of Heathrow Airport.

At 23:23 GMT, emergency services were called to a fire at North Hyde electrical substation in Nestles Avenue, Hayes, Hillingdon. Ten fire engines and 70 firefighters were dispatched as a 650-foot cordon was established. London Fire Brigade reported that one transformer

within the substation was alight. As of 13:00 on 21 March, the fire continued to burn at a reduced level, fuelled by 25,000 litres of cooling oil which had been contained within the burning transformer. The London Fire Brigade was contacted by London Borough of Hillingdon to ascertain data from any emergency air quality monitoring undertaken but no response to date has been received. Given the high emission of pollutants into the atmosphere, significant peaks were observed in the 2025 at nearby continuous monitoring sites (e.g. HIL5, Hillingdon Hayes). These data will be analysed and reported in the ASR 2026 (reporting 2025 data).

Table Q. Planning requirements met by planning applications in London Borough of Hillingdon in 2024.

Condition	Number
Number of planning applications where an air quality impact assessment was reviewed for air quality impacts	45
Number of planning applications required to monitor for construction dust	0
Number of CHPs/Biomass boilers refused on air quality grounds	0
Number of CHPs/Biomass boilers subject to GLA emissions limits and/or other restrictions to reduce emissions	0
Number of developments required to install Ultra-Low NO_x boilers	0
Number of developments where an AQ Neutral building and/or transport assessments undertaken	45
Number of developments where the AQ Neutral building and/or transport assessments not meeting the benchmark and so required to include additional mitigation	21
Number of planning applications with S106 agreements including other requirements to improve air quality	45
Number of planning applications with CIL payments that include a contribution to improve air quality	0
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.	45 conditions included. 21 registered[8] Total Audits 21 *Self-compliant 2 **Compliant 10 Non-compliant 2 No NRMM 3 Site Complete 1 Pending 0

Notes:

*Compliant – Site was non-compliant before our interaction however met required emission/administration standards by enacting all recommendations made by officers.
**Self-Compliant – Site has met/exceeded emission standards and registered all machinery correctly prior to the audit.
***Cold Engaged – An unregistered site, identified on the ground and subsequently engaged.
'Non-Registration' can include site and/or machinery.

LBH has a peer review process of planning applications in place to ensure that all relevant planning applications are reviewed, and NRMM conditions, are enforced.
NRMM Enforcement is secured via the funded Mayor's scheme run by Cleaner Construction for London.

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[8] 16 up and running construction sites were checked for compliance in 2023.

5   Additional Activities to Improve Air Quality

5.1   London Borough of Hillingdon Fleet

There are 296 vehicles in the Council fleet. This includes 3 fully electric pool cars and 5 fully electric small size vans (2.7% of the total fleet), and 5 self-charging hybrid pool cars (1.7% of the total fleet). As current practice in procurement, there will be two tenders for all purchases of vehicles, one for fully electric options and the other for diesel powered.

The Council has a commitment in the Hillingdon Climate Change Action Plan to replace all diesel-powered vehicles weighing 3.5t or less before 2030.

As of 2024/25 work continues to include 32 electric vehicles in a replacement plan of 96 vans. All other purchases will seek two tenders – one for diesel and one for electric powered vehicles. Further expansion of the Council's electric vehicle fleet is dependent in part on resolution of power supply issues at the Harlington Road Depot.

5.2   Planning Enforcement

London Borough of Hillingdon has a systematic process in place to review all planning applications likely to be significant in terms of air quality. This is judged based on location and size – even if it is a small development, if it falls within a Focus Area, more stringent mitigation requirements apply. This is achieved by training planning officers and using the planning GIS system with a flag for action at sensitive locations, where the planning officer knows what is required and takes the appropriate consultation procedures.

Enforcement actions are delivered through the enforcement team.

5.3   Pan-London NRMM Auditing Project

The Council has been a member of the consortium supporting the NRMM Enforcement project since its inception. At a cost of £4,000 per annum this membership has been value for money for the delivery of the site audits programme and the Council will continue to support the pan-London NRMM auditing project in 2025-2026.

The Cleaner Construction for London NRMM Report for Hillingdon audited 21 sites, 7 of which were 'cold engaged' (unregistered but identified on the ground and subsequently engaged). Of the 21 sites, 3 were identified as self-compliant (not requiring intervention) compared to 10 that were identified as compliant (compliance achieved after intervention). One site was complete and 5 had no NRMM present. However, 2 were identified as non-compliant, either for registration problems or a lack of evidence of compliance. The small number of sites identified as self-compliant highlights the need for monitoring NRMM usage.

All planning applications with construction and demolition activities in 2024/25 included the NRMM condition.

London Borough of Hillingdon has defined a standard wording for the condition applied to all development where constructions and demolition activities take pace. This text is applied by default to all relevant planning applications where construction/demolition activities are permitted in the planning Decision notice and, wherever appropriate, in S106 agreements.

The standard text applied is as follows:

Conditions - Reducing Emissions from Demolition and Construction
A   No development shall commence until a Plan has been submitted to, and approved in writing by, the LPA. This must demonstrate compliance (drawn up accordance with) the GLA Control of Dust and Emissions from Construction and Demolition SPG (or any successor document).
Reason: Compliance with London Plan Policy SI 1 and in accordance with Mayor of London "The Non-road mobile machinery (standard condition recommended by Mayor of London, London Local Air Quality Management Policy Guidance 2019)

B All Non-Road Mobile Machinery (NRMM) of net power of 37kW and up to and including 560kW used during the course of the demolition, site preparation and construction phases shall comply with the emission standards set out in chapter 7 of the GLA's supplementary planning guidance "Control of Dust and Emissions During Construction and Demolition" dated July 2014 (SPG), or subsequent guidance. Unless it complies with the standards set out in the SPG, no NRMM shall be on site, at any time, whether in use or not, without the prior written consent of the local planning authority. The developer shall keep an up-to-date list of all NRMM used during the demolition, site preparation and construction phases of the development on the online register at https://nrmm.london/."
Reason: Compliance with the London's Low Emission Zone for non-road mobile machinery as per requirements of the London Environment Strategy

5.4   Air Quality Alerts

Hillingdon has been a member of the airTEXT consortium (https://www.airtext.info/) since its inception and will continue to support the project. The London Borough of Hillingdon cascade the Mayor's air quality alert messaging to all schools and health practices.

5.5   Air Quality Positive

Unfortunately, the Air Quality Positive requirement has not proven successful to date in terms of supporting the LBH planning system to improve air quality by design. None of the planning applications where the submission of an Air Quality Positive Statement was a requirement had either innovative nor quantifiable measures that would be considered to realistically produce tangible improvements on local air quality.

A detailed analysis of the reports provided to date indicates that the Air Quality Positive Matrices produced to support the various planning applications are only a list of best practices which should be delivered by default anyway, in a due diligent approach, to deliver the standard clean by design requirements.

Appendix A   Details of Monitoring Site QA/QC

A.1   Automatic Monitoring Sites

Automatic monitors within Hillingdon are operated as part of the Borough continuous monitoring network, the Heathrow Airport monitoring network and Defra's AURN. Data have been provided and ratified by Ricardo-AEA following the national procedure guidance and standards. There are no issues to be reported, with the network collecting robust data with excellent data capture standards.

All TEOM data have been converted to gravimetric equivalent using the VCM method and BAM data have been corrected by applying a factor of 0.833 following the TG16 method. All data are reported at US standard temperature and pressure (25°C, 1 atmosphere).

A.2   Diffusion Tube Quality Assurance / Quality Control

Hillingdon uses Gradko International for their diffusion tube analysis. These are prepared using the 20% Triethanolamine (TEA) in water method. Gradko International follows the procedures set out in the Practical Guidance. All results have been bias adjusted and annualised where required before being presented in Table B1.

Gradko is a UKAS accredited laboratory and participates in the AIR-PT Scheme (a continuation of the Workspace Analysis Scheme for Proficiency (WASP)) for NO_2 tube analysis and the annual Field Inter-Comparison Exercise. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO_2 concentrations reported are of a high calibre. The lab follows the procedures set out in the Harmonisation Practical Guidance.

For the rolling five round AIR PT window, it is expected that 95 % of laboratory results should be < ± 2. If this percentage is substantially lower than 95 % for a particular laboratory, within a five-round window, then one can conclude that the laboratory in question has significant sources of error within their analytical procedure. The following table lists Gradko recent AIR NO2 PT rounds and the percentage (%) of results submitted which were subsequently determined to be satisfactory based upon a z-score of ≤ ± 2 as defined above. AIR-PT results for Gradko to date are presented in Table A1 below.

Table A1 – Most recent AIR-PT results for Gradko.

AIR PT Round	AIR PT AR050	AIR PT AR052	AIR PT AR053	AIR PT AR055	AIR PT AR056	AIR PT AR058	AIR PT AR059	AIR PT AR062	AIR PT AR063
Round conducted in the period	May – June 2022	July – August 2022	September – October 2022	January – February 2023	May – June 2023	July – August 2023	September – October 2023	January – February 2024	April – June 2024
Gradko International	100 % [1]	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %

[1] Participant subscribed to two sets of test results (2 x 4 test samples) in each AIR PT round

Diffusion Tube Local Bias Adjustment Factors

The London Borough of Hillingdon has been using its local bias adjustment factor to adjust their diffusion tube monitoring results for several ASR reporting iterations. This practice is favoured by the Borough due to local specific conditions as well as because it has proven to be a more conservative approach which the council is keen to pursue in the treatment of their monitoring data. To derive the Borough's local adjustment bias adjustment factor, co-location results at two continuous monitoring locations using reference method (chemiluminescence) were used: London Hillingdon (HIL) AURN continuous monitoring site and Hillingdon 1 - South Ruislip (HI1) continuous monitoring site. Diffusion tube HILL01 is co-located with the London Hillingdon (HIL) AURN continuous monitoring site and diffusion tube HILL03 is co-located with the Hillingdon 1 - South Ruislip (HI1) continuous monitoring site. Until July 2023, only HILL03 had triplicate diffusion tubes. From August 2023 onwards, both sites had triplicate sampling deployed monthly.

HILL01 diffusion tube co-located with HIL AURN continuous monitoring site as well diffusion tube at HILL03 co-located with HI1 continuous monitoring site results were compared with the reference method (chemiluminescence) in the co-location studies undertaken by the Borough.

Details of the sites are presented in Table A2 below. A local bias adjustment factor of 0.84 has been calculated from the Precision and Bias Adjustment spreadsheet (v04)[9]; the outputs from the spreadsheet are shown in Tables A3 and A4 below.

AEA_DifTPAB_v04.xls spreadsheet designed by Defra to assist in calculating the Precision and Accuracy (Bias) of the co-location studies mentioned above has been used. A feature of this spreadsheet is the introduction of precision and 95% confidence intervals in Bias Adjustment calculations. Precision can be used as a quality check on the diffusion tube data and confidence intervals give an idea of the uncertainty to both the Bias Adjustment Factor and diffusion tube results. Moreover, as the sites have been co-located against a reference method, it was possible to calculate the accuracy of the co-location study by means of the Bias Adjustment Factor A and Diffusion Tube Bias B. All data are expressed in μgm-3 and includes 95% confidence intervals. Details of the sites and calculations undertaken are presented in Tables A3 and A4 below.

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[9] https://laqm.defra.gov.uk/air-quality/air-quality-assessment/local-bias/

Table A2. Details of the co-location sites and annual means (μg m⁻³) for each site for 2024.

Name and Annual Mean (μg m-3) Continuous Monitor	Type	Reference Method	Name and Annual Mean (μg m-3) Diffusion Tube(s)
HIL, Hillingdon (23.0)	Background	Chemiluminescence	HILL01 (23.4)
HI1, Hillingdon 1 - South Ruislip (20.0)	Roadside	Chemiluminescence	HILL03 (19.8)

Table A3. Local Bias Adjustment Factor Calculation for 2024 - HILL01 & HIL.

Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

	Diffusion Tubes Measurements										**Automatic Method**		**Data Quality Check**	
Period	**Start Date** dd/mm/yyyy	**End Date** dd/mm/yyyy	**Tube 1** μgm^{-3}	**Tube 2** μgm^{-3}	**Tube 3** μgm^{-3}	**Triplicate Mean**	**Standard Deviation**	**Coefficient of Variation (CV)**	**95% CI of mean**		**Period Mean**	**Data Capture (%DC)**	**Tubes Precision Check**	**Automatic Monitor Data**
1	02/01/2024	30/01/2024	28.3	29.5	29.6	29	0.7	3	1.8		25.6	99.9	Good	Good
2	30/01/2024	05/03/2024	31.0	33.6	31.7	32	1.3	4	3.3		27.8	96.2	Good	Good
3	05/03/2024	03/04/2024	33.9	32.8	31.4	33	1.3	4	3.1		26.7	100.0	Good	Good
4	03/04/2024	01/05/2024	24.5	23.9	23.2	24	0.7	3	1.6		18.8	99.7	Good	Good
5	01/05/2024	04/06/2024	26.2	26.9	25.1	26	0.9	3	2.2		21.8	99.9	Good	Good
6	04/06/2024	03/07/2024	20.4	22.8	22.8	22	1.4	6	3.5		18.4	99.9	Good	Good
7	03/07/2024	31/07/2024	27.5	29.4	28.5	28	0.9	3	2.3		22.1	99.9	Good	Good
8	31/07/2024	03/09/2024	28.1	29.2	29.2	29	0.6	2	1.6		21.2	96.3	Good	Good
9	03/09/2024	01/10/2024	26.6	23.5	25.2	25	1.5	6	3.8		19.2	99.9	Good	Good
10	01/10/2024	05/11/2024	34.7	33.8	31.5	33	1.6	5	4.1		29.0	99.8	Good	Good
11	05/11/2024	04/12/2024	31.0	31.8	30.6	31	0.6	2	1.6		29.1	99.3	Good	Good
12	04/12/2024	06/01/2025	25.3	25.6	26.3	26	0.5	2	1.4		21.2	99.9	Good	Good
13														

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

Overall survey --> Good precision | Good Overall DC

(Check average CV & DC from Accuracy calculations)

Site Name/ ID:	**HIL, Hillingdon**

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

Accuracy (with 95% confidence interval)
without periods with CV larger than 20%
Bias calculated using 12 periods of data
Bias factor A   0.83 (0.79 - 0.87)
Bias B   21% (15% - 26%)
Diffusion Tubes Mean: 28 μgm^{-3}
Mean CV (**Precision**):   4
Automatic Mean: 23 μgm^{-3}
Data Capture for periods used: 99%
Adjusted Tubes Mean: 23 (22 - 25) μgm^{-3}

Accuracy (with 95% confidence interval)
WITH ALL DATA
Bias calculated using 12 periods of data
Bias factor A   0.83 (0.79 - 0.87)
Bias B   21% (15% - 26%)
Diffusion Tubes Mean: 28 μgm^{-3}
Mean CV (**Precision**):   4
Automatic Mean: 23 μgm^{-3}
Data Capture for periods used: 99%
Adjusted Tubes Mean: 23 (22 - 25) μgm^{-3}

Jaume Targa, for AEA
Version 04 - February 2011

Table A4. Local Bias Adjustment Factor Calculation for 2024 - HILL03 & HI1.

Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 μgm^{-3}	Tube 2 μgm^{-3}	Tube 3 μgm^{-3}	Triplicate Mean	Standard Deviation	Coefficient of Variation (CV)	95% CI of mean	Period Mean	Data Capture (% DC)	Tubes Precision Check	Automatic Monitor Data
1	03/01/2024	31/01/2024	28.1	28.9	27.3	28	0.8	3	2.0	27.1	97.8	Good	Good
2	31/01/2024	05/03/2024	23.8	25.4	26.0	25	1.2	5	2.9	23.6	99.8	Good	Good
3	05/03/2024	02/04/2024	24.7	24.3	24.9	25	0.3	1	0.8	21.9	99.7	Good	Good
4	02/04/2024	30/04/2024	20.1	19.7	19.5	20	0.3	2	0.8	16.3	99.4	Good	Good
5	30/04/2024	05/06/2024	21.0	23.0	21.8	22	1.0	5	2.5	18.6	99.6	Good	Good
6	05/06/2024	02/07/2024	17.9	17.9	18.1	18	0.1	1	0.3	15.4	99.4	Good	Good
7	02/07/2024	01/08/2024	21.2	20.7	20.9	21	0.2	1	0.6	16.2	99.9	Good	Good
8	01/08/2024	03/09/2024	19.6	19.8	19.8	20	0.1	1	0.3	14.3	99.6	Good	Good
9	03/09/2024	30/09/2024	22.3	22.6	21.3	22	0.7	3	1.8	16.4	99.7	Good	Good
10	30/09/2024	06/11/2024	29.8	28.9	28.1	29	0.8	3	2.1	24.5	99.6	Good	Good
11	06/11/2024	03/12/2024	27.0	28.8	30.3	29	1.6	6	4.0	26.9	99.6	Good	Good
12	03/12/2024	07/01/2025	21.9	22.7	22.1	22	0.4	2	1.0	16.7	99.2	Good	Good
13													

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

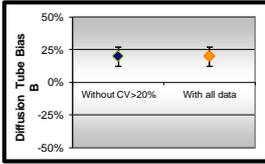Overall survey --> | Good precision | Good Overall DC

| Site Name/ ID: | HI1, Hillingdon 1 - South Ruislip |
| Precision | 12 out of 12 periods have a CV smaller than 20% |

(Check average CV & DC from Accuracy calculations)

Accuracy (with 95% confidence interval)
without periods with CV larger than 20%
Bias calculated using 12 periods of data
Bias factor A   0.85 (0.8 - 0.91)
Bias B   18% (10% - 25%)
Diffusion Tubes Mean: 23 μgm^{-3}
Mean CV (**Precision**):   3
Automatic Mean: 20 μgm^{-3}
Data Capture for periods used: 99%
Adjusted Tubes Mean: 20 (19 - 21) μgm^{-3}

Accuracy (with 95% confidence interval)
WITH ALL DATA
Bias calculated using 12 periods of data
Bias factor A   0.85 (0.8 - 0.91)
Bias B   18% (10% - 25%)
Diffusion Tubes Mean: 23 μgm^{-3}
Mean CV (**Precision**):   3
Automatic Mean: 20 μgm^{-3}
Data Capture for periods used: 99%
Adjusted Tubes Mean: 20 (19 - 21) μgm^{-3}

Jaume Targa, for AEA
Version 04 - February 2011

Diffusion Tube National Bias Adjustment Factors

The diffusion tubes for the year 2024 were supplied by Gradko International, the tubes were prepared using the 20% Triethanolamine (TEA) in water preparation method. The national bias adjustment for Gradko is 0.85 (based on 26 studies, version 04/25, just considering Good precision results) as derived from the national bias adjustment calculator (National Diffusion Tube Bias Adjustment Factor Spreadsheet, version 04/25 published in April 2024)[10]. Only the collocation studies rated as "Good" (tubes are considered to have good precision where the coefficient of variation of duplicate or triplicate diffusion tubes for eight or more periods during the year is less than 20%) were considered to derive the National Bias Adjustment applied in this report.

Discussion of choice of Factor to use

The diffusion tube data have been corrected using a bias adjustment factor, which is an estimate of the difference between diffusion tube concentration and continuous monitoring, the later assumed to be a more accurate method of monitoring. LLAQM.TG(19) guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring was followed. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tubes results with data taken from NOx/NO₂

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[10] https://laqm.defra.gov.uk/air-quality/air-quality-assessment/national-bias/

continuous analysers. Alternatively, the national database of diffusion tube co-location studies provides bias factors for the relevant laboratory and preparation method.

Regarding the application of a bias adjustment factor for diffusion tubes, the Technical Guidance LLAQM.TG(19) and the LAQM Helpdesk recommend the use of a local bias adjustment value where available and relevant to diffusion tube sites. However, in 2024, the local bias adjustment factor derived from the co-location studies at the HILL and HI1 automatic monitoring locations was of 0.84, lower by 0.1 in relation to the National bias adjustment factor based on 26 studies of good precision.

The national bias adjustment factor for Gradko in 2024 (as per April 2025 issue, spreadsheet version number: 04/25), obtained from the overall national bias adjustment spreadsheet[11] (based on 27 studies) is also 0.84. However, when selecting the studies with good precision only (26 studies), the national bias adjustment value is 0.85. Given that the derived local bias adjustment factor is less conservative than the national bias adjustment for 2024, the National bias adjustment was used in this instance. A summary of historical bias adjustments applied in previous years is presented in Table A5 below.

Table A5. 2024 Bias Adjustment Factor and Historical Comparison.

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	National	04/25	0.85
2023	Local	-	0.89
2022	Local	-	0.92
2021	Local	-	0.88
2020	National	03/21	0.84
2019	National	03/20	0.89
2018	National	03/19	0.92
2017	National	03/18	1.03
2016	National	03/17	1.03
2015	National	03/16	0.95

A.3   Adjustments to the Ratified Monitoring Data

There were no incidences where data capture was less than 75% of a full calendar year (less than 9 months) and more than 25%, and therefore there was not need to "annualise" any monitoring results using the methodology outlined in LLAQM.TG(19) before being compared to annual mean objectives.

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[11] https://laqm.defra.gov.uk/air-quality/air-quality-assessment/national-bias/

Appendix B   Full Monthly Diffusion Tube Results for 2024

Table B1. NO₂ Diffusion Tube Results 2024 – London Borough of Hillingdon.

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2024 % [b]	Annual Mean NO₂												Annual mean – raw data	Annual mean – bias adjusted [c]
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
HILL01	506926	178614	28.3	31.0	33.9	24.5	26.2	20.4	27.5	28.1	26.6	34.7	31.0	25.3	28.1	23.9
HILL01	506926	178614	29.5	33.6	32.8	23.9	26.9	22.8	29.4	29.2	23.5	33.8	31.8	25.6	28.6	24.3
HILL01	506926	178614	29.6	31.7	31.4	23.2	25.1	22.8	28.5	29.2	25.2	31.5	30.6	26.3	27.9	23.7
HILL02	505996	184058	30.9	23.0	25.6	24.5	28.9	22.4	24.1	22.8	27.4	28.6	28.2	25.2	26.0	22.1
HILL03	510821	184923	28.1	23.8	24.7	20.1	21.0	17.9	21.2	19.6	22.3	29.8	27.0	21.9	23.1	19.7
HILL03	510821	184923	28.9	25.4	24.3	19.7	23.0	17.9	20.7	19.8	22.6	28.9	28.8	22.7	23.6	20.0
HILL03	510821	184923	27.3	26.0	24.9	19.5	21.8	18.1	20.9	19.8	21.3	28.1	30.3	22.1	23.4	19.8
HILL04	507617	182506	27.5	25.1	26.2	20.8	22.8	18.4	21.3	18.8	25.8	29.6	27.6	18.8	23.5	20.0
HILL05	506989	181920	31.4	32.6	31.7	22.3	25.2	26.1	missing	26.1	24.1	30.3	32.6	28.4	28.3	24.0
HILL06	506243	185653	33.0	30.7	28.7	22.9	23.9	25.4	26.6	26.2	24.5	29.6	30.2	25.7	27.3	23.2
HILL07	509918	179015	32.5	27.9	32.7	23.6	23.5	22.4	25.1	26.2	27.6	32.9	32.3	27.6	27.9	23.7
HILL08	509798	178654	32.0	28.7	30.4	20.4	21.4	18.8	18.5	23.3	23.0	29.5	31.8	28.4	25.5	21.7
HILL09	508758	177718	30.3	31.1	31.1	25.1	23.0	22.6	26.0	26.2	24.7	30.6	33.4	27.4	27.6	23.5
HILL10	508414	177125	29.1	38.8	33.6	26.6	21.5	24.1	28.7	31.9	26.6	34.6	39.2	32.0	30.5	26.0
HILL11	505736	177752	25.6	23.9	24.1	17.2	17.4	15.8	20.5	18.7	20.2	27.5	25.2	18.6	21.2	18.0
HILL12	504851	176770	26.6	26.8	28.3	20.1	20.7	19.6	23.1	22.1	41.8	missing	31.0	22.6	25.7	21.8
HILL13	505731	180288	27.0	24.7	25.0	17.5	19.3	16.3	18.6	18.7	20.1	25.3	26.8	20.8	21.7	18.4
HILL14	505299	190923	15.7	14.9	14.7	9.2	10.7	8.6	10.3	10.3	11.5	19.0	19.0	12.3	13.0	11.1
HILL15	511889	186563	24.7	23.0	20.5	15.6	17.7	14.2	18.7	15.7	19.5	24.9	26.6	17.5	19.9	16.9
HILL16	505920	177188	31.1	31.9	missing	25.3	25.8	missing	28.3	28.9	29.9	36.3	35.9	29.8	30.3	25.8
HILL17	510361	179820	28.6	25.9	26.4	17.4	18.8	16.9	19.8	20.6	20.4	28.4	28.7	24.1	23.0	19.6
HILL18	509683	179486	30.1	29.5	29.5	23.1	22.8	20.9	26.0	24.6	24.4	31.7	33.5	27.2	26.9	22.9
HILL19	506108	180493	33.1	29.6	31.6	23.4	23.5	23.7	26.3	23.7	26.0	missing	32.3	26.2	27.2	23.1
HILL20	506503	179510	32.4	33.7	34.1	27.3	26.7	24.3	26.7	27.4	25.2	31.1	18.2	26.3	27.8	23.6
HILL21	507141	179628	29.3	30.3	29.4	22.4	21.6	20.0	22.6	25.1	22.8	30.2	29.7	26.3	25.8	21.9
HILL22	507649	184611	34.8	29.9	30.9	25.0	28.6	24.7	26.7	23.8	26.2	33.1	36.9	27.1	29.0	24.6

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2024 % [b]	Annual Mean NO$_2$												Annual mean – raw data	Annual mean – bias adjusted [c]
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
HILL23	506143	185395	missing	missing	20.4	14.6	19.7	17.2	18.5	17.6	21.5	25.7	25.8		20.1	17.1
HILL24	506035	183611	33.1	27.8	27.5	22.7	29.8	25.0	25.7	23.0	29.2	30.5	32.6	24.9	27.7	23.5
HILL25	508773	177352	35.4	missing	36.6	27.8	24.6	24.1	30.8	29.1	27.7	32.4	33.3	30.6	30.2	25.7
HILL26	509499	178370	29.5	31.4	31.7	24.9	22.5	23.2	24.5	26.9	23.2	30.2	31.6	26.4	27.2	23.1
HILL27	509755	179934	33.3	29.2	31.0	27.3	31.6	24.1	26.3	23.2	28.5	34.0	32.5	25.9	28.9	24.6
HILL28	509328	179603	27.1	25.4	24.0	17.4	19.2	16.3	18.8	18.7	21.2	27.1	28.4	21.2	22.1	18.8
HILL29	505906	178497	28.1	27.8	27.2	19.4	21.0	18.2	21.7	20.6	missing	27.8	28.5	24.1	24.0	20.4
HILL30	507612	185118	24.0	22.6	21.0	12.9	14.8	11.4	15.6	14.4	16.1	21.4	19.4	18.8	17.7	15.0
HILL31	511103	181097	28.3	28.3	28.1	18.8	17.5	15.2	20.2	20.4	17.8	24.8	28.4	22.6	22.5	19.2
HILL32	510664	188599	42.9	36.9	34.2	37.3	38.6	35.4	35.0	30.8	39.9	39.4	39.7	33.7	37.0	31.4
HILL33	510284	190524	34.3	31.7	28.2	24.2	24.6	24.3	24.5	24.4	27.8	31.4	32.3	27.0	27.9	23.7
HILL34	509900	190648	31.2	28.6	29.3	20.1	22.2	19.5	23.3	20.5	24.1	29.8	36.2	23.9	25.7	21.9
HILL35	510055	186080	missing	26.6	27.8	19.6	21.5	18.3	19.9	17.5	18.6	26.6	32.1	24.6	23.0	19.5
HILL36	509275	187340	34.6	31.3	25.3	26.8	32.1	24.0	29.8	26.0	31.8	36.8	37.6	26.5	30.2	25.7
HILL37	509097	187597	32.4	30.5	30.9	25.2	26.6	24.8	25.8	26.4	26.7	31.1	27.6	24.1	27.7	23.5
HILL38	509525	176949	36.6	39.4	39.8	27.9	28.8	31.6	31.5	31.3	31.5	37.9	40.6	33.8	34.2	29.1
HILL39	506000	176969	36.3	34.2	38.6	25.9	27.8	26.6	31.1	31.9	32.9	36.6	30.3	29.2	31.8	27.0
HILL40	507316	177576	32.2	32.9	33.0	missing	missing	21.2	26.0	26.2	24.4	30.4	30.2	26.7	28.3	24.1
HILL41	507369	176966	40.4	42.8	45.4	34.3	31.4	32.0	38.3	39.4	37.9	missing	36.4	35.8	37.6	32.0
HILL42	506192	185614	32.4	30.9	12.4	22.1	23.9	18.9	24.1	23.0	20.6	31.9	29.8	25.9	24.7	21.0
HILL43	510134	187086	28.2	26.8	24.4	19.3	21.4	19.7	20.2	21.2	missing	27.8	30.5	23.6	23.9	20.3
HILL44	508162	191784	23.1	20.4	18.6	16.2	21.6	18.2	19.2	16.8	22.9	23.8	27.0	17.4	20.4	17.4

Notes

Concentrations are presented as µg m^{-3}.

Exceedances of the NO$_2$ annual mean AQO of 40 µg m-3 are shown in red and **bold.**

Exceedances of the NO$_2$ annual mean of 36 µg m-3 are underlined**.**

NO$_2$ annual means in excess of 60 µg m^{-3}, indicating a potential exceedance of the NO$_2$ hourly mean AQS objective are shown in **bold** and underlined.

All 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%).

N/A = means period outside the monitoring survey

Missing = means diffusion tube deployed but missing = no data

(c) Local bias adjustment of 0.89 was applied to the data