

The London Borough of Hillingdon



Air Quality Annual Status Report, 2023

London Borough of Hillingdon Air Quality Annual Status Report for 2022

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This report provides a detailed overview of air quality in the London Borough of Hillingdon during 2022. It has been produced to meet the requirements of the London Local Air Quality Management statutory process¹. It also updates on the Council's Air Quality Action Plan since its adoption in May 2019 to the end of March 2023.

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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

$\mu\text{g m}^{-3}$	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
CISHA	Council for the Independent Scrutiny of Heathrow Airport
CO	Carbon monoxide
CO ₂	Carbon dioxide
DEFRA	Department for Environment, Food and Rural Affairs
EV	Electric Vehicle
FDMS	Filter Dynamics Measurement System
FIDAS	Fine Dust Analysis System
FORS	Fleet Operator Recognition System
FPN	Fixed Penalty Notice
GLA	Greater London Authority
HE	Highways England
HS2	High Speed 2 (rail line from London to Birmingham)
LAEI	London Atmospheric Emissions Inventory
LBH	London Borough of Hillingdon
LBH EHO	London Borough of Hillingdon Environmental Health Officer
LEZ	Low Emission Zone
LIP	Local Implementation Plan (for Borough transport)
LLAQM	London Local Air Quality Management
MAQF	Mayor's Air Quality Fund
N/A	Not applicable
NO _x	Oxides of nitrogen (NO ₂ + NO)
NO ₂	Nitrogen dioxide
NPPF	National Planning Policy Framework
NRMM	Non-Road Mobile Machinery
O ₃	Ozone
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
QA/QC	Quality Assurance / Quality Control
RE:FIT, RE:NEW	GLA programmes for energy efficiency and local generation projects in homes and public bodies
SPG	Sustainable Planning Guidance
STARS	TfL Community Project to reduce car usage
t	Tonnes (=1,000 kg)
TEB	Transport Emissions Benchmark
TEOM	Tapered Element Oscillating Microbalance (for PM measurement)
TfL	Transport for London
TSP	Total Suspended Particulate Matter
ULEZ	Ultra-Low Emission Zone
VCM	Volatile Correction Model
WHO	World Health Organization

Summary

This report provides information on:

- Update on relevant air quality legislation;
- Air quality levels and trends in the London Borough of Hillingdon in 2022 using monitored data;
- Progress with the Borough's Air Quality Action Plan (AQAP) from March 2022 to March 2023;
- Planning Applications that were relevant to air quality in the Borough and the role of the Planning System on Local Air Quality Management;
- 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 (NO₂) in parts of the Borough, fine particulate matter (expressed as either PM_{2.5} or PM₁₀ reflecting different size fractions) together with NO₂ continue to be the focus for pollutant emission reductions in Hillingdon.

With increasing evidence on the health impacts of fine particulate matter, the Mayor of London, in the London Environment Strategy, adopted a figure of 10 µg.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. Following a public consultation, the Environmental Targets (Fine Particulate Matter) Regulations 2023 has also adopted the 10 µg.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.

The Borough has in recent years, in conjunction with GLA, defined Air Quality Focus Areas, which are densely populated zones with elevated levels of pollution. 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.

Data collected in the reporting year (2022) is not compliant with the nitrogen dioxide annual mean air quality objectives at two monitoring locations, namely outside Georgian Lodge flats, Field End Road, Eastcote (Diffusion tube HILL32) and on the north side of the A4 near the houses by the junction with Sipson Way (Diffusion tube HILL41). The results obtained indicate a slight increase on annual mean concentrations of NO₂, PM₁₀ and PM_{2.5} at most locations. In some locations measurements indicate no change, though for a few there have been more significant increases in measured concentration, reasons for which need to be investigated. 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 risk of exceedance of the current air quality objectives increases if there is a return to similar activity levels as those seen pre-pandemic.

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, namely within Focus Areas;
- reduce emissions 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; 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 new sources of emission to the borough and
 - b) 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 1,253 vehicles in 2022, up from 521 the year before.
- Continued work to upgrade the Council's vehicle fleet to cleaner vehicles, including electric.
- Various projects at schools including:
 - Green infrastructure projects at schools and other sensitive locations
 - Air quality awareness raising
 - Promotion of sustainable travel to school
 - Focus on air quality in the school superzone project.
- Use of the Healthy Streets Assessment tool to scope possible future Healthy streets projects, with funding obtained for an audit of borough roads, particularly those in Air Quality Focus Areas (AQFAs).
- Improvements in the North Hyde Road Focus Area, supported by the TfL Green and Healthy Streets Fund.
- Obtaining funding for the Harlington Cycle Lane in the Harlington AQFA.
- Development of a Cycle Wayfaring Strategy in the borough to improve signage for cyclists.
- Continued promotion of AirText, including a campaign to GPs in the region.

The council faces a number of other challenges with its air quality work, ranging from new possible sources of pollution such as data centres and increased use of wood-burning for heating, to the need to develop a new action plan that addresses tightened air quality

standards by 2024. The increase in concentrations of both PM_{2.5} and NO₂ at monitoring stations in the borough is of concern and will need to be monitored further, particularly given tightening of the air quality standard for PM_{2.5} for which modelling indicates a threat of exceedance at a number of sensitive receptors (care homes, schools, hospitals and clinics).

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.

As already noted, the AQAP is due for review in 2024. This will cover the period to 2029 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 2022. It has been produced to meet the requirements of the London Local Air Quality Management statutory process². National Air Quality Standards and Objectives are given in Table A. There are exceedances in the borough of the NO₂ annual mean limit value/national objective and no exceedances for other pollutants for which standards exist.

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

Pollutant	Objective (UK)	Averaging Period	Date ¹
Nitrogen dioxide - NO ₂	200 µg m ⁻³ not to be exceeded more than 18 times a year	1-hour mean	31 Dec 2005
	40 µg m ⁻³	Annual mean	31 Dec 2005
Particles - PM ₁₀	50 µg m ⁻³ not to be exceeded more than 35 times a year	24-hour mean	31 Dec 2004
	40 µg m ⁻³	Annual mean	31 Dec 2004
Particles - PM _{2.5}	25 µg m ⁻³	Annual mean	2020
	Target of 15% reduction in concentration at urban background locations	3-year mean	Between 2010 and 2020

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

The World Health Organisation (WHO) published updated air quality guidelines (AQGs) in 2021. Given new information regarding the concentrations at which air pollutants are damaging to health, the new AQGs are lower than the legal standards in the UK shown in Table, and are summarised in Table B. Being developed by the World Health Organisation, some of the interim targets shown in the Table are not relevant to the UK. For example, Interim Target 1 for PM_{2.5} exceeds concentrations measured at all UK monitoring stations.

These guidelines act as an evidence-informed tool to inform legislation and policy. Taking them into account, the Mayor of London has reduced the PM_{2.5} limit for the Capital to 10 µg.m⁻³ to be met by 2030. Central government is in the process of adopting the same limit, but with a compliance date of 2040. NO₂ has not been updated for the revised London or National limits.

² LLAQM Policy and Technical Guidance 2019 (LLAQM.TG(19)). <https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/working-boroughs>

Table B. Summary of WHO Air Quality Guidelines for the pollutants of relevance to London Borough of Hillingdon (AQG levels and interim targets).

Pollutant	Averaging time	Interim target ($\mu\text{g}/\text{m}^3$)				AQG level
		1	2	3	4	
NO ₂	Annual	40	30	20	–	10
	24-hour	120	50	–	–	25
PM ₁₀	Annual	70	50	30	20	15
	24-hour	150	100	75	50	45
PM _{2.5}	Annual	35	25	15	10	5
	24-hour	75	50	37.5	25	15

Further information has been provided by the GLA in regard to modelled maps for NO₂ and PM₁₀ and PM_{2.5} with a base year of 2019. The new limits and the new mapping information will form the basis of the Review of the Air Quality Action Plan due in 2024.

1.2 Description of the Local Authority Area

Hillingdon is, geographically, the second largest local authority in London and has approximately 250,000 residents. 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 objectives of NO₂ in 2003. 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 (NO_x) emissions within the AQMA which covers the southern half of the borough (Figure 1). The possible inclusion of areas in the north of the borough has been kept under review.



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 remains central to the borough’s decision-making process on air quality improvement. The plan emphasises improvements in certain areas of the borough that are most adversely affected, these being referred to as the Focus Areas. Benefits of the Action Plan, however, are not restricted to these Areas. It is noted that the Plan is a dynamic document and will be updated in 2024 to reflect London policy changes and associated guidance as well as additional measures deemed fit to further improve air quality in the borough.

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 2022, 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) A list of planning applications that were relevant to air quality in the borough and the role of the planning system on Local Air Quality Management,
- 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 2022 (Table C). 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 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 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 NO₂ was carried out at 44 sites in the borough in 2022, covering both background and roadside locations, supplementing the information generated by the automatic network (Figure 3). Two of the diffusion tube sites are co-located with continuous monitoring sites to derive local bias adjustment factors: HILL03 (using triplicate tubes) is co-located with Hillingdon 1 in South Ruislip automatic monitoring site (HI1); and HILL01 (single tube) is co-located with London Hillingdon automatic monitoring site (HIL).

A local bias adjustment factor of 0.90 was derived from the colocation exercise in 2022. This has been used to correct the diffusion tube results. 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))⁴.

Full details of diffusion tube QA/QC, including justification for the choice of bias adjustment factors are presented in Appendix A. Monthly NO₂ diffusion tube data are provided in Appendix B.

2.3 Low-cost sensor monitoring sites

Two low-cost sensor monitoring sites were deployed in 2021 covering both NO₂ and PM_{2.5} and capturing local conditions at Tavistock Road and Harlington Road (Figure 3).

⁴ https://www.london.gov.uk/sites/default/files/llaqm_technical_guidance_2019.pdf

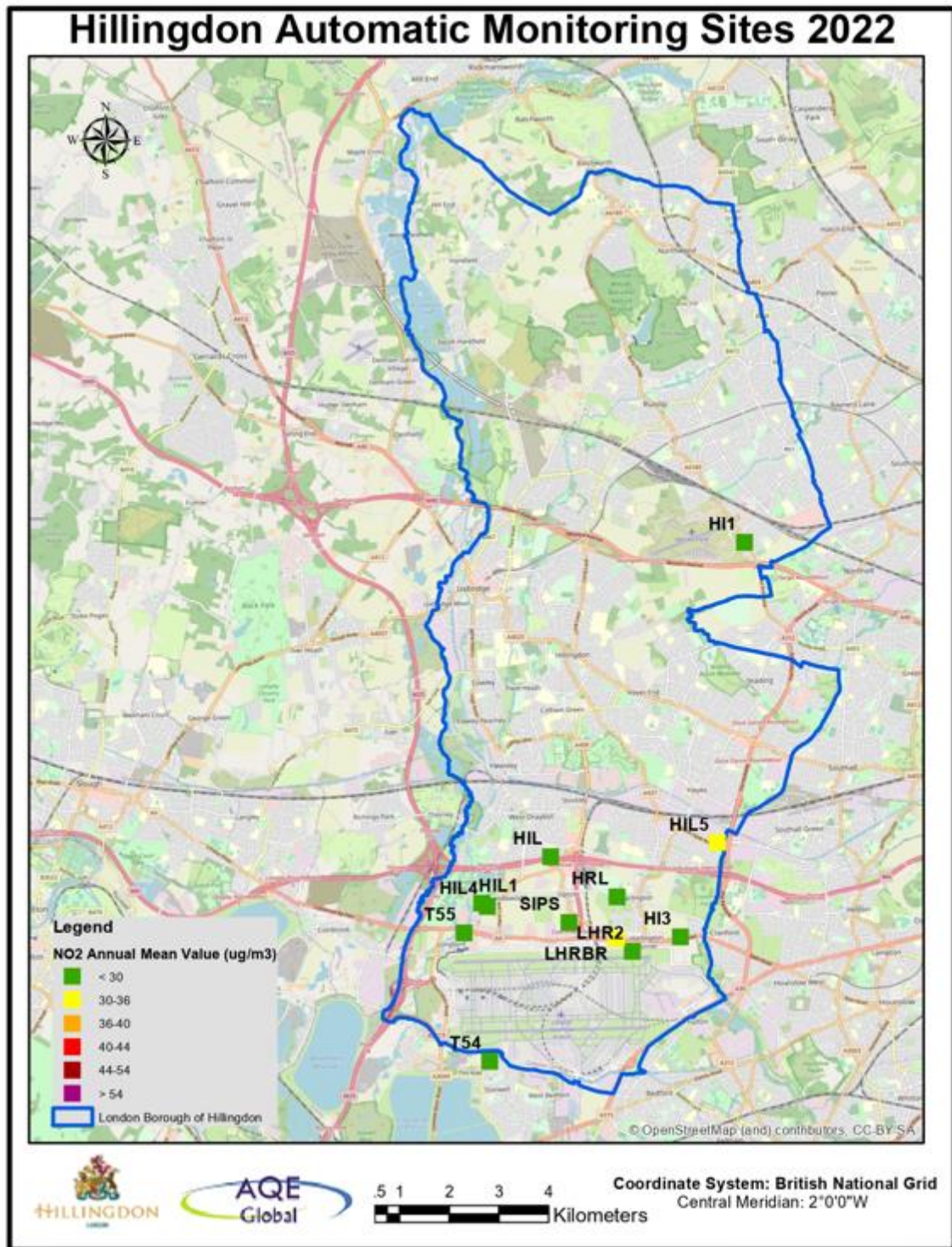


Figure 2. Location of the automatic monitoring sites in Hillingdon, nitrogen dioxide annual mean concentrations, NO₂ (ug/m³) 2022

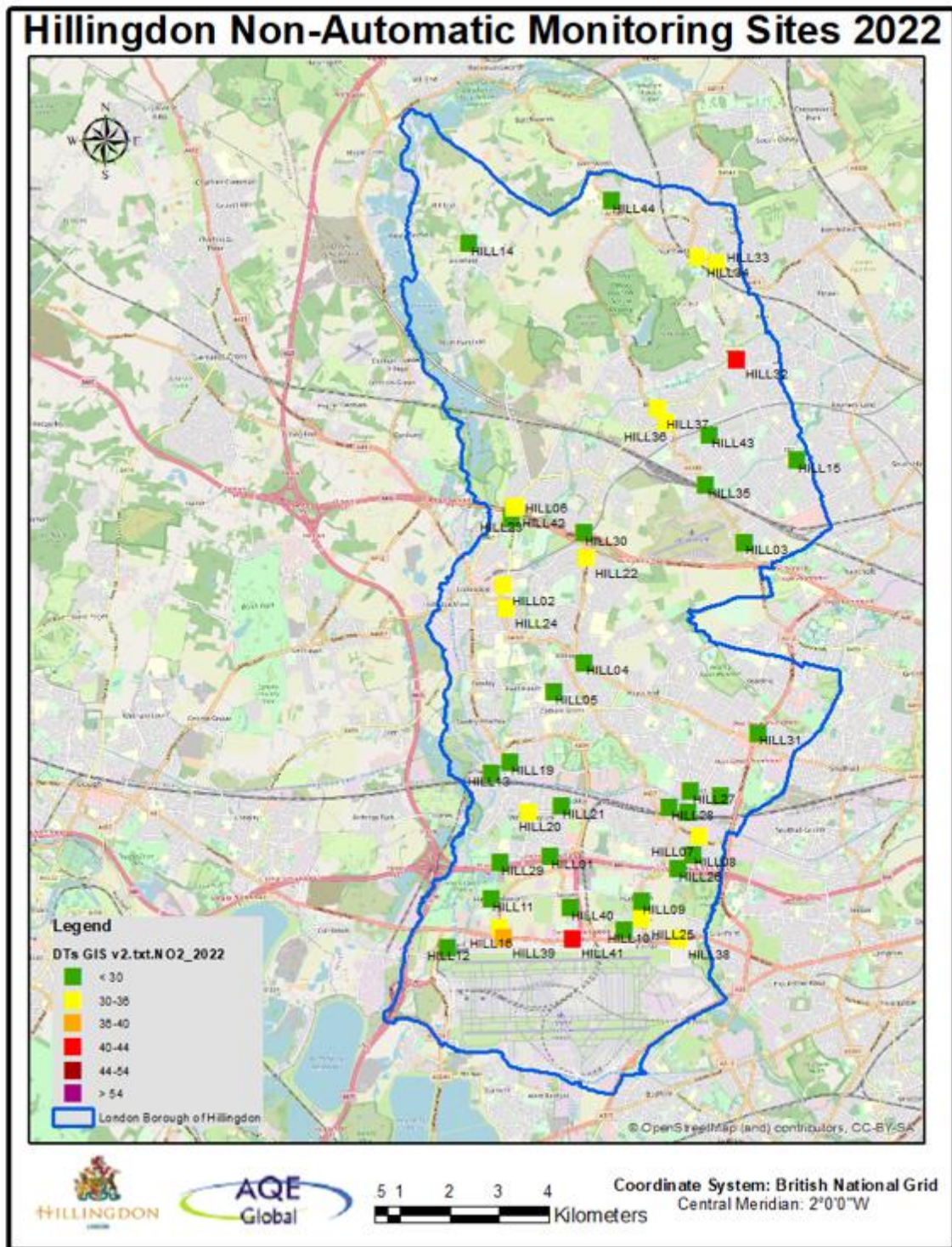


Figure 3. Location of non-automatic monitoring sites in Hillingdon, nitrogen dioxide annual mean concentrations, NO_2 ($\mu\text{g}/\text{m}^3$) 2022.

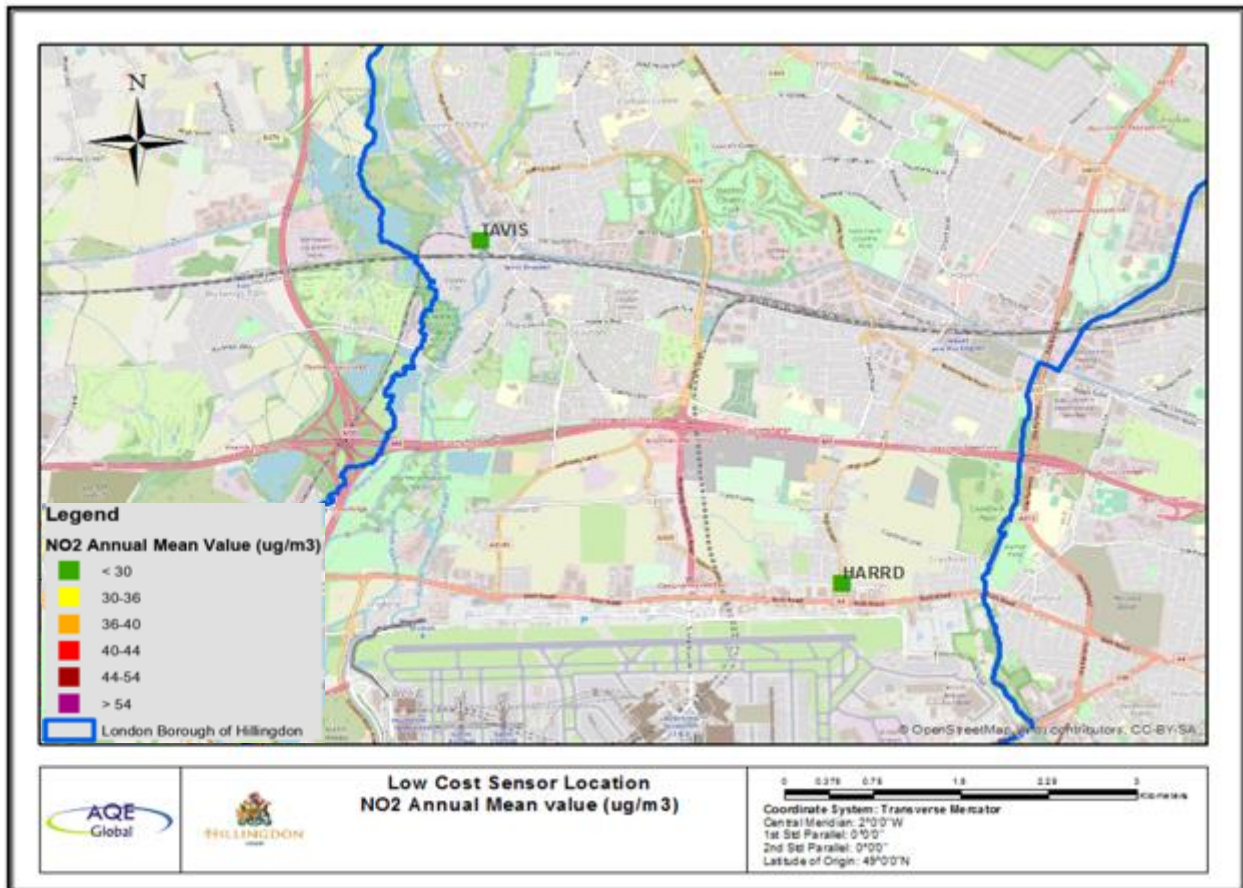


Figure 4. Location of low-cost sensor monitoring sites in Hillingdon covering both PM_{2.5} and NO₂, with NO₂ concentrations shown (ug/m³) 2022.

Table C. Details of automatic monitoring sites in Hillingdon for 2022.

Site ID	Site Name	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
LHR2	London Heathrow	508600	176700	Airport	Y	N/A	N/A (inside airport)	1.5	NO ₂ , PM ₁₀ , PM _{2.5}	Chemiluminescence FIDAS
HIL	London Hillingdon	506951	178605	Urban background	Y	16m	2.5m (30m to M4)	1.5	NO ₂ , PM ₁₀ , PM _{2.5} , O ₃	Chemiluminescence FIDAS
HI1	Hillingdon 1 - South Ruislip	510857	184917	Roadside	Y	11m	2.5m	1.5	NO ₂ , PM ₁₀	Chemiluminescence TEOM
HI3	Hillingdon 3 - Oxford Avenue	509557	176994	Roadside	Y	8m and 17m	33m to A4 Bath Road (2m to Oxford Avenue)	1.5	NO ₂ , PM ₁₀	Chemiluminescence TEOM
HRL	London Harlington	508295	177800	Airport	Y	N/A	3m	1.5	CO, NO ₂ , O ₃ , PM ₁₀ , PM _{2.5}	Chemiluminescence TEOM FDMS
SIPS	Hillingdon Sipson	507325	177282	Urban background	Y	9m	2.5m	1.5	NO ₂	Chemiluminescence
HIL1	London Harmondsworth	505561	177661	Roadside	Y	20m	1m	1.5	NO ₂ , PM ₁₀	Chemiluminescence BAM
HIL4	London Harmondsworth Osiris	505671	177605	Urban background	Y	1m	13m	1.5	TSP, PM ₁₀ , PM _{2.5} , PM ₁	Optical
T55	Heathrow Green Gates	505207	177072	Airport	Y	32m	N/A (background for the airport) (62m to airport boundary)	1.5	NO ₂ , PM ₁₀ , PM _{2.5}	Chemiluminescence FIDAS
T54	Heathrow Oaks	505729	174496	Airport	Y	N/A	5m	1.5	NO ₂ , PM ₁₀ , PM _{2.5}	Chemiluminescence FIDAS
HIL5	Hillingdon Hayes	510303	178882	Roadside	Y	15m	1m	1.5	NO ₂ , PM ₁₀	Chemiluminescence BAM
LHRBR	Heathrow Bath Road	508279	176949	Roadside	Y	140m	6m	1.5	NO ₂ , PM ₁₀ , PM _{2.5}	Chemiluminescence FIDAS

Table D. Details of non-automatic monitoring sites in Hillingdon in 2022.

Site ID 2020	Site Name	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	Tube co-located with an automatic monitor? (Y/N)
HILL01	<i>AURN Site, Keats Way, West Drayton</i>	506926	178614	Roadside	Y	0	30m from M4	1.5	NO ₂	Y
HILL02	<i>Uxbridge Day Nursery Park Road Uxbridge (on wire Fence)</i>	505996	184058	Roadside	Y	0	4	1.5	NO ₂	N
HILL03	<i>South Ruislip Monitoring Station West End Road</i>	510821	184923	Roadside	Y	14	2.5	1.5	NO ₂	Y
HILL04	<i>Hillingdon Primary School Uxbridge Road Hillingdon (on wire fence)</i>	507617	182506	Roadside	Y	0	5	1.5	NO ₂	N
HILL05	<i>Hillingdon Hospital Monitoring Station Colham Road (Near John Rich House on former junction to Pield Heath Road)</i>	506989	181920	Roadside	Y	7	2	1.5	NO ₂	N
HILL06	<i>Warren Road Ickenham Uxbridge (1st lamp post on left)</i>	506243	185653	Roadside	Y	1	23	1.5	NO ₂	N
HILL07	<i>Harold Avenue (first lamp post on left)</i>	509918	179015	Roadside	Y	4	30	1.5	NO ₂	N
HILL08	<i>15 Phelps Way Hayes (lamp post outside of)</i>	509798	178654	Roadside	Y	7	1.5	1.5	NO ₂	N
HILL09	<i>25 Cranford Lane Harlington (lamp post on the left after car park)</i>	508758	177718	Roadside	Y	7	1	1.5	NO ₂	N
HILL10	<i>Brendan Close Harlington (1st lamp post on the left)</i>	508414	177125	Roadside	Y	0	1	1.5	NO ₂	N
HILL11	<i>Harmondsworth Green Harmondsworth (lamp post outside nursery)</i>	505736	177752	Roadside	Y	0	1	1.5	NO ₂	N
HILL12	<i>Heathrow Close Longford (1st lamp post on the right)</i>	504851	176770	Roadside	Y	0	2	1.5	NO ₂	N
HILL13	<i>31 Tavistock Road (on lamp-post outside house)</i>	505731	180288	Roadside	Y	3	1	1.5	NO ₂	N
HILL14	<i>Harefield Hospital Hill End Road (lamp-post outside entrance)</i>	505299	190923	Background	N	0	5	1.5	NO ₂	N

London Borough of Hillingdon

Site ID 2020	Site Name	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	Tube co-located with an automatic monitor? (Y/N)
HILL15	Field End Road/Field End School S.Ruislip 3rd Lamp-post south of school entrance (outside AQMA)	511889	186563	Roadside	N	8	1	1.5	NO ₂	N
HILL16	49 Zealand Avenue Lamp Post	505920	177188	Roadside	Y	8	13	1.5	NO ₂	N
HILL17	49 Silverdale Gardens, Hayes Lamp Post (8)	510361	179820	Background	Y	9	14	1.5	NO ₂	N
HILL18	Blyth Road, Hayes Lamp Post (4)	509683	179486	Roadside	Y	6	2	1.5	NO ₂	N
HILL19	Side of 104 Yiewsley High Street (front of 1A Fairfield Road) Lamp Post (2)	506108	180493	Background	Y	9	37	1.5	NO ₂	N
HILL20	1 Porters Way (corner with Kingston Lane) Lamp Post (1)	506503	179510	Background	Y	12	9	1.5	NO ₂	N
HILL21	5-7 Mulberry Crescent, West Drayton Lamp Post (18)	507141	179628	Background	Y	10	2	1.5	NO ₂	N
HILL22	340 Long Lane, Uxbridge Lamp Post (71)	507649	184611	Roadside	Y	18	2	1.5	NO ₂	N
HILL23	198 Harefield Road, Uxbridge Lamp Post (2)	506143	185395	Background	Y	9	33	1.5	NO ₂	N
HILL24	59 Hillingdon Road, Uxbridge Lamp Post (56)	506035	183611	Roadside	Y	12	1.5	1.5	NO ₂	N
HILL25	10 West End Lane, Harlington Lamp Post (2)	508773	177352	Background	Y	11	33	1.5	NO ₂	N
HILL26	R/O 130 Cleave Avenue, Hayes Lamp Post (33)	509499	178370	Roadside	Y	18	27	1.5	NO ₂	N
HILL27	Botwell House RC Primary School (Side-fence)	509755	179934	Roadside	Y	5	12	1.5	NO ₂	N
HILL28	Blyth Road 2nd Tube, Hayes Lamp Post (17) (western most lamp post in front of 133 Enterprise House)	509328	179603	Roadside	Y	5	2	1.5	NO ₂	N
HILL29	Little Benty, Road name sign corner of The Brambles and Little Benty. UB7 7UJ	505906	178497	Background	Y	5	1.5	1.9	NO ₂	N
HILL30	Lamp-post down alley next to No 60a The Chase, Ickenham. Red	507612	185118	Background	Y	4	25	2.5	NO ₂	N

Site ID 2020	Site Name	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	Tube co-located with an automatic monitor? (Y/N)
	<i>garage door, set back from road. UB10 8ST</i>									
HILL31	<i>On white lamp-post at end of Dorchester Way that runs parallel with A312, side of houses</i>	511103	181097	Background	Y	18	10	2.2	NO ₂	N
HILL32	<i>Roadside lamp-post, outside Georgian Lodge flats, Field End Road, Eastcote. HA52QL.</i>	510664	188599	Background	N	8.9	0.6	2.0	NO ₂	N
HILL33	<i>Kerbside lamppost outside Roundabout House, 34 Pinner Road. HA6 1BZ</i>	510284	190524	Roadside	N	7.0	0.5	2.2	NO ₂	N
HILL34	<i>Roadside lamp-post, pavement outside 177/179 Pinner Road. HA6 1DB.</i>	509900	190648	Roadside	N	4	2	2.2	NO ₂	N
HILL35	<i>Grey Lamp-post, West End Road, to the south of Sidmouth Drive, outside Aroma House Chinese. HA4 6LR</i>	510055	186080	Roadside	N	7	0.4	2.3	NO ₂	N
HILL36	<i>Lamp-post outside Vodafone, 69 High Street Ruislip. HA4 8JB</i>	509275	187340	Roadside	N	4	3	2.4	NO ₂	N
HILL37	<i>2/6 High St. Ruislip Lamp-post with Parking and church sign. HA4 7AW</i>	509097	187597	Roadside	N	3	1	2.0	NO ₂	N
HILL38	<i>Blue street light neat speed camera markings to west of Oxford Ave, Near AQMS. UB3 5HU</i>	509525	176949	Roadside	Y	6	1.2	2.2	NO ₂	N
HILL39	<i>Pinglestone Close/Bath Road A4. On cycle lane sign post. Park up Pinglestone close. UB7 0DJ.</i>	506000	176969	Roadside	Y	10	1.5	2.2	NO ₂	N
HILL40	<i>On zone sign at corner of Sipson Close/Sipson Rd. UB7 0JX.</i>	507316	177576	Roadside	Y	4	1.8	1.9	NO ₂	N
HILL41	<i>On the north side of the A4 near the houses by the junction with Sipson Way</i>	507369	176966	Roadside	Y	6	0.7	2.0	NO ₂	N

London Borough of Hillingdon

Site ID 2020	Site Name	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	Tube co-located with an automatic monitor? (Y/N)
HILL42	<i>Telegraph pole next to big house/field on South corner of The Drive. UB10 8DA</i>	506192	185614	Roadside	Y	5	4.5	2.3	NO ₂	N
HILL43	<i>Lamp-post outside tattoo and Five star nail parlours, No 60, Victoria Road. HA4 0AH</i>	510134	187086	Roadside	Y	3.5	1.5	2.4	NO ₂	N
HILL44	<i>Hillingdon NorthWood Focus Area On a lamppost on Ducks Hill Road Corner of Rising Hill Close HA6 2NP</i>	508162	191784	Roadside	N	10	1.5	2.2	NO ₂	N

Table E. Details of Automatic Low-Cost Monitoring Sites in Hillingdon in 2022.

Site ID	Site Name	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
TAVIS (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})
HARRD 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})

(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 NO₂ concentrations measured at the automatic monitoring stations, 2009-2022, showing data for each site in the borough. Units: µg.m⁻³. No sites exceed the annual mean objective. Units: µg.m⁻³.
- Figure 6. Annual mean NO₂ concentrations measured at diffusion tube locations, 2014-2022, showing data for each site in the borough. Units: µg.m⁻³. Two sites exceed the NO₂ annual mean objective (HILL32 and HILL41). Units: µg.m⁻³.
- Figure 7. Annual mean PM₁₀ concentrations measured at the automatic monitoring stations, 2010-2022 (average across all sites in the borough). No sites exceed the annual mean objective. Units: µg.m⁻³.
- Figure 8. Annual mean PM_{2.5} concentrations measured at the automatic monitoring stations, 2011-2022 (average across all sites in the borough). No sites exceed the annual mean objective of 25µg.m⁻³, nor the WHO/London annual mean target of 10 µg.m⁻³.
- Figures 9. Hourly mean NO₂ concentrations measured at the low-cost sensor at Tavistock Road, 1st January to 31st December 2022. Units: µg.m⁻³
- Figures 19. Hourly mean NO₂ concentrations measured at the low-cost sensor at Harlington High Street, 1st January to 31st December 2022. Units: µg.m⁻³
- Figures 11. Hourly mean PM_{2.5} concentrations measured at the low-cost sensor at Tavistock Road, 1st January to 31st December 2022. Units: µg.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 2022. Units: µg.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).

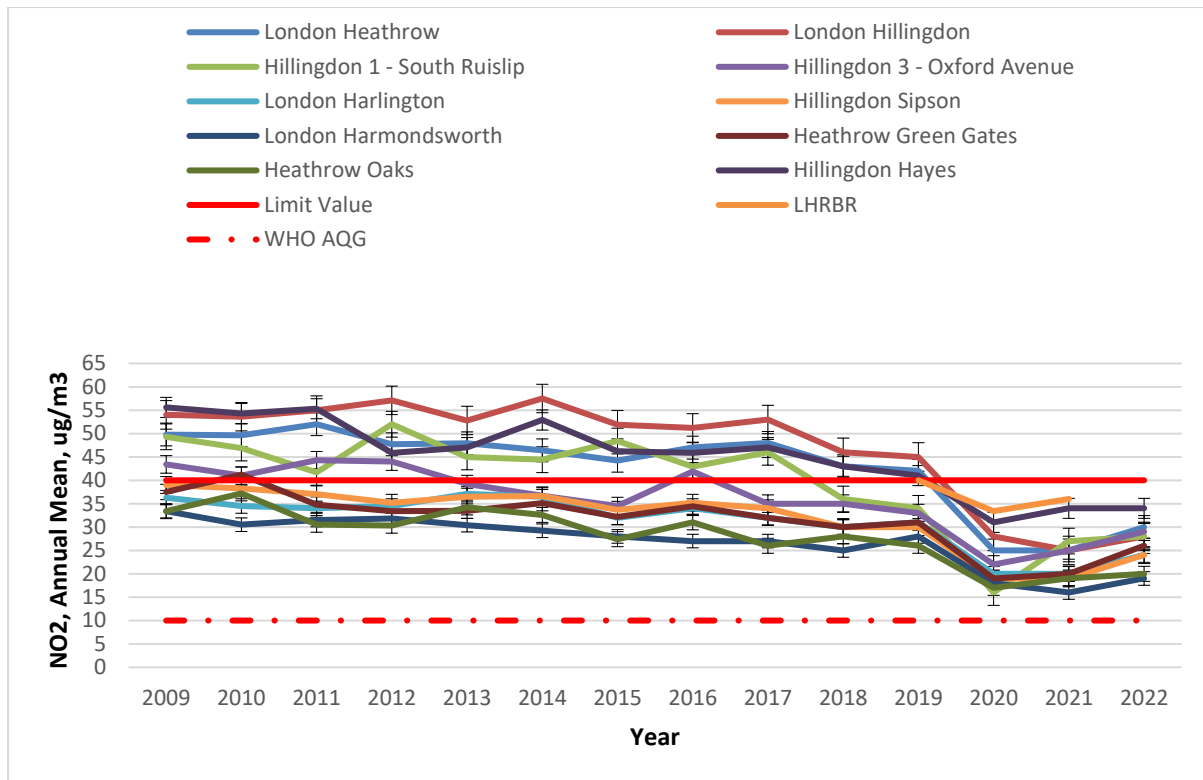


Figure 5. Annual mean NO₂ concentrations measured at the automatic monitoring stations, 2009-2022, showing data for each site in the borough. Units: µg.m⁻³.

Figure 5 and 6 indicate that NO₂ annual mean concentrations observed in 2022 have increased at the majority of the sites, with increases ranging from 1 to 8.0 µg/m³ across the borough. [Exact values for NO₂, PM_{2.5} and PM₁₀ are shown in Tables F to M below, that follow this series of graphs.]

From the continuous monitoring stations, it was observed that continuous monitoring site T55 (Heathrow Green Gates) registered the highest increase (6 µg.m⁻³) from 2021 to 2022 followed by continuous monitoring sites LHR2 (London Heathrow) and SIPS (Hillingdon Sipson) which registered an increase of 5 µg.m⁻³ from 2021 to 2022.

For the diffusion tubes, an increase of 8.0 µg.m⁻³ from 2021 to 2022 was noted at the diffusion tube site HILL39 located at Pinglestone Close/Bath Road A4; an increase of 7.2 µg.m⁻³ at the diffusion tube HILL41 located at A4 by junction with Sipson Way reaching 40.1 µg.m⁻³ in 2022; and an increase of 6.7 µg.m⁻³ at the diffusion tube HILL38 located at Oxford Ave, Near Oxford Avenue CM; all of the sites within the AQMA.

It is also noted site HILL032 outside the AQMA registered an annual mean in 2022 above 36 µg.m⁻³ (40.1 µg.m⁻³), registering an exceedance to the UK national annual mean objective for NO₂.

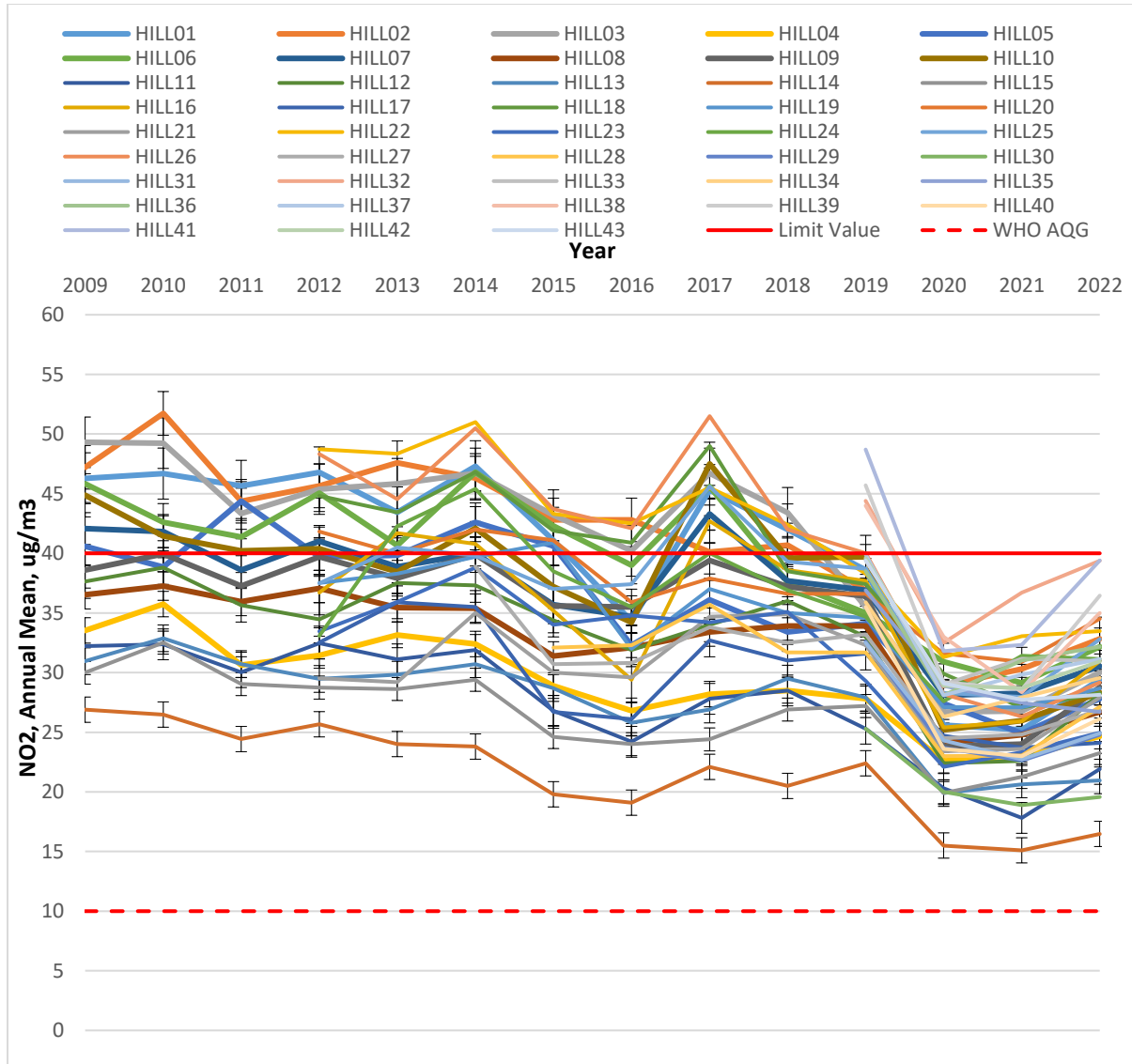


Figure 6. Annual mean NO₂ concentrations measured at the diffusion tube locations, 2009-2022, showing data for each site in the borough. Units: µg.m⁻³.

Regarding particulate matter concentrations (PM₁₀ and PM_{2.5}), with the exception of site HRL located in Harlington where no increase was observed for either fraction, increases of PM₁₀ ranging from 1 to 4 µg.m⁻³ (Figure 7) were observed across sites in 2022, with HIL5 located in Hayes showing the highest increase. It is noted that no continuous monitoring site from the standard LBH network exceeds the WHO/London Plan PM_{2.5} target value of 10 µg.m⁻³ across the borough (Figure 8). With the exception of HRL located in Harlington, all the sites registered an increase of PM_{2.5} concentrations in 2022 of 1 µg.m⁻³ in relation to 2021 levels.

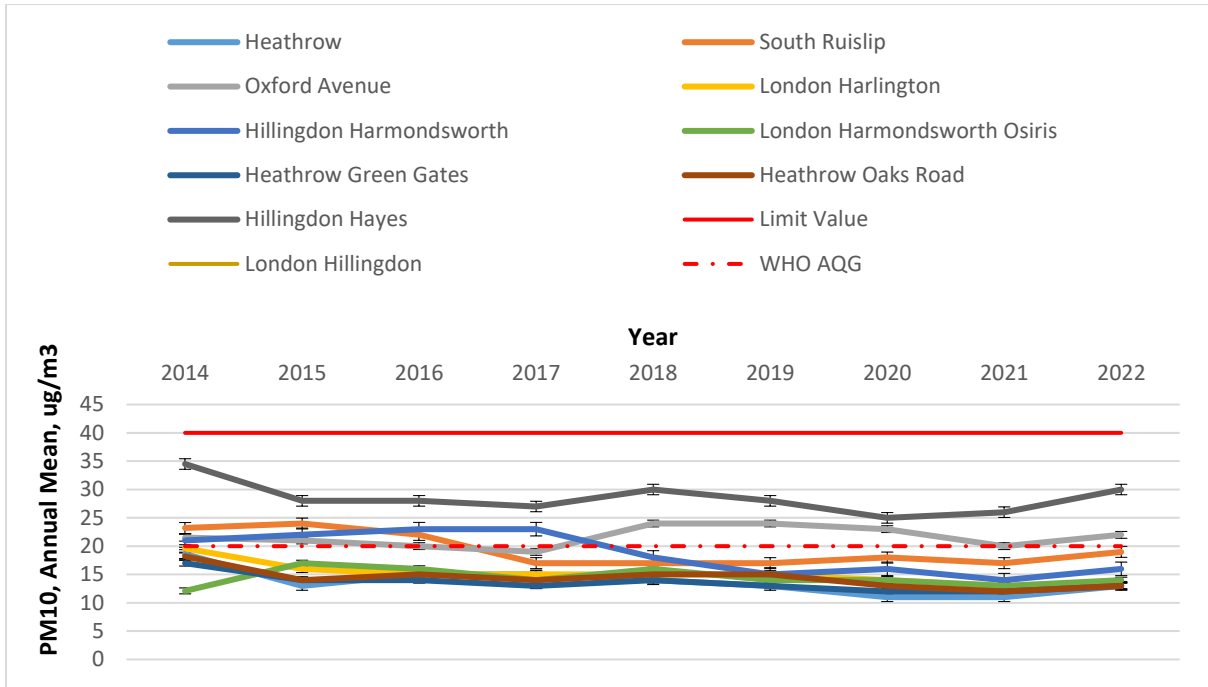


Figure 7. Annual mean PM₁₀ concentrations measured at the automatic monitoring stations, 2014-2022, showing data for each site in the borough. Units: $\mu\text{g.m}^{-3}$.

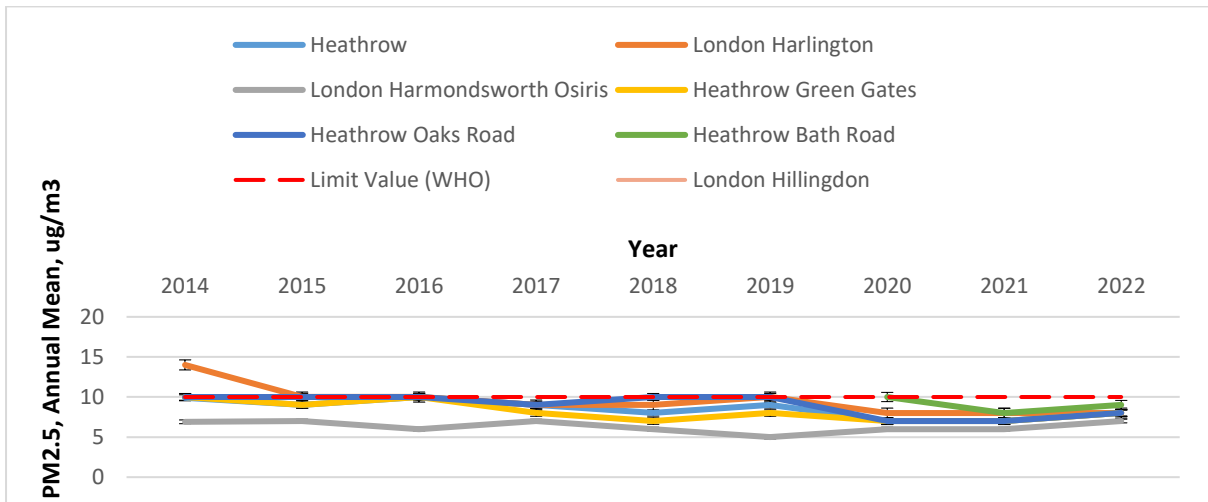


Figure 8. Annual mean PM_{2.5} concentrations measured at the automatic monitoring stations, 2014-2022, showing data for each site in the borough. Units: $\mu\text{g.m}^{-3}$.

Figures 9 and 11 indicate hourly mean NO₂ concentrations measured at the low-cost sensors at Tavistock Road and Harlington High Street, for the period from the 1st of January to the 31st December 2022. Both Figures indicate that whereas there are peaks of concentrations throughout the year, the annual mean value is below the national objective of 40 $\mu\text{g.m}^{-3}$ at each location (see also Table H).

Figures 10 and 12 present the hourly mean PM_{2.5} concentrations measured at the low-cost sensors at Tavistock Road and Harlington High Street, for the period from the 1st of January to the 31st December 2022. Both Figures indicate that there are peaks in concentration throughout the year. Results show that the annual mean with the new target of 10 µg.m⁻³ is being exceeded at each location (See Table M).

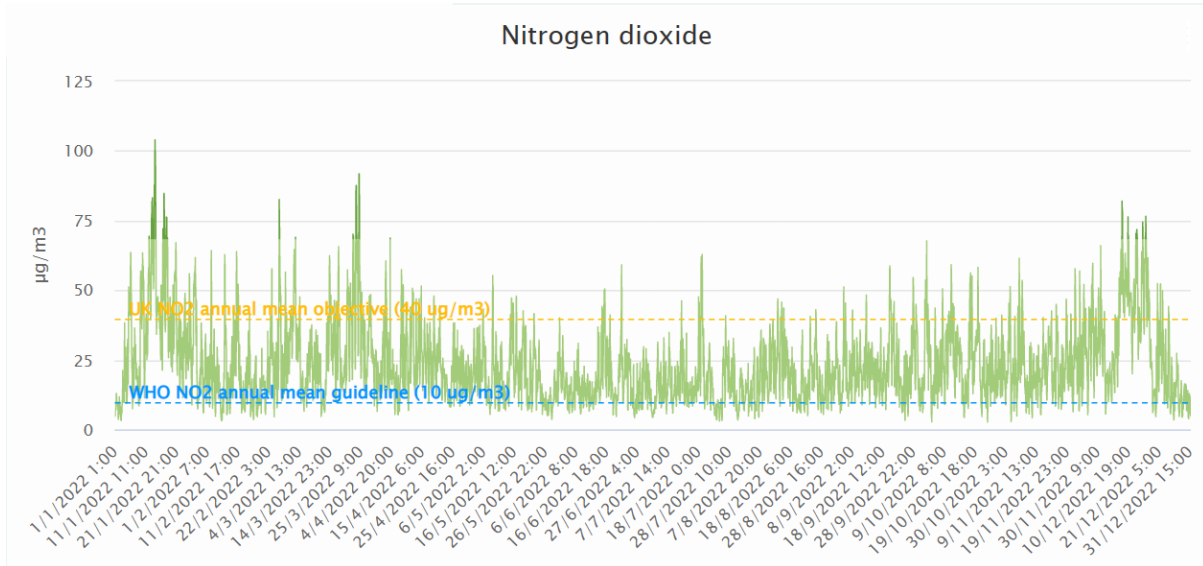


Figure 9. Hourly mean NO₂ concentrations measured at the low-cost sensor at Tavistock Road, 1st January to 31st December 2022. Units: µg.m⁻³.

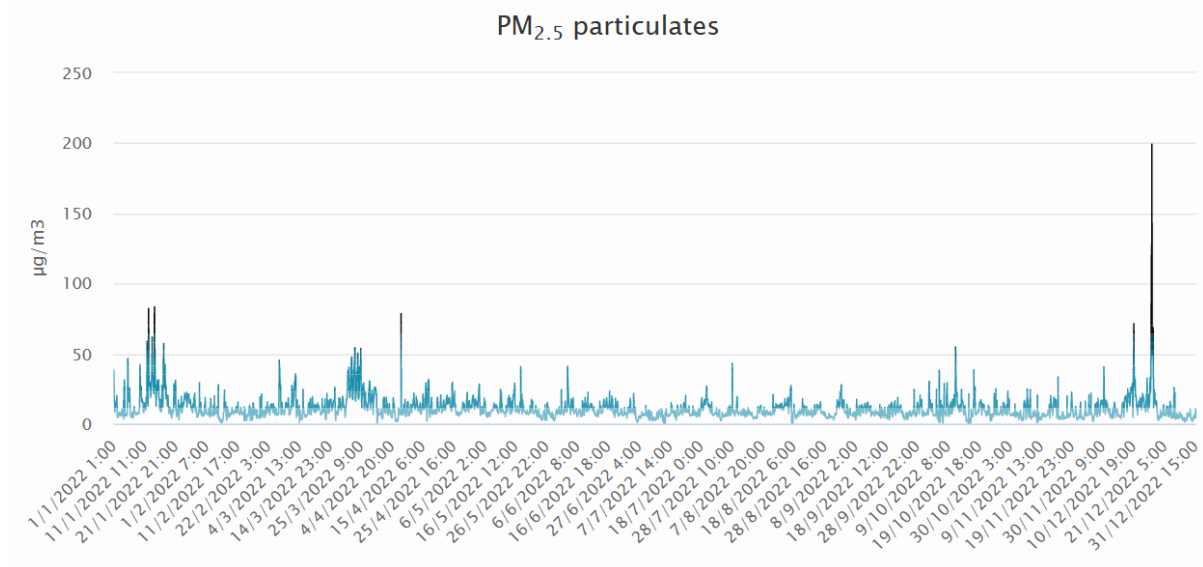


Figure 10. Hourly mean PM_{2.5} concentrations measured at the low-cost sensor at Tavistock Road, 1st January to 31st December 2022. Units: µg.m⁻³.

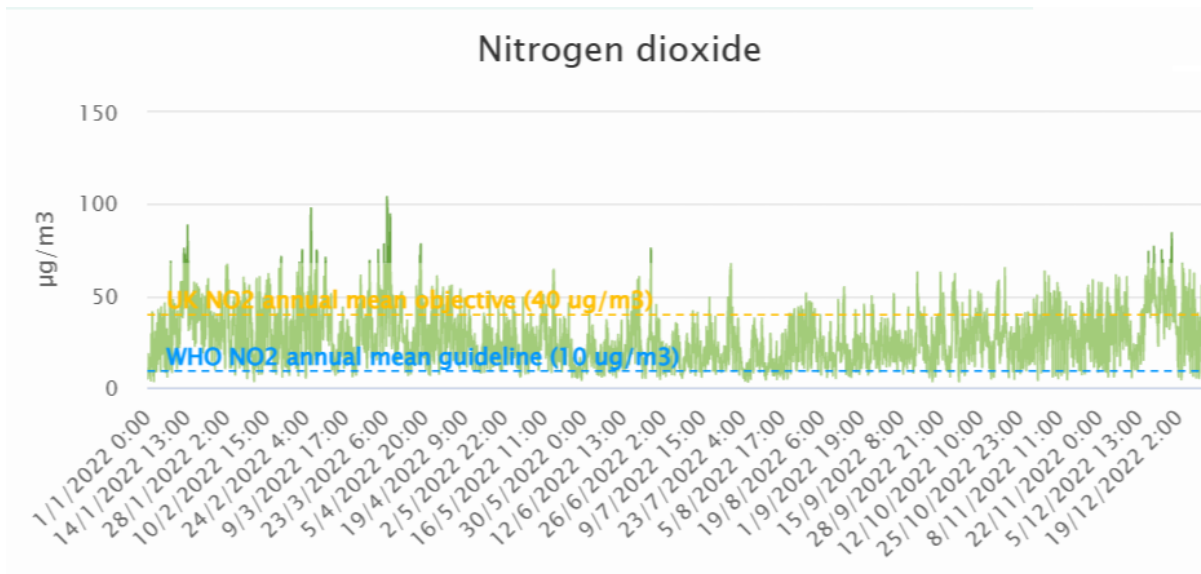


Figure 11. Hourly mean NO₂ concentrations measured at the low-cost sensor at Harlington High Street, 1st January to 31st December 2022. Units: µg.m⁻³.

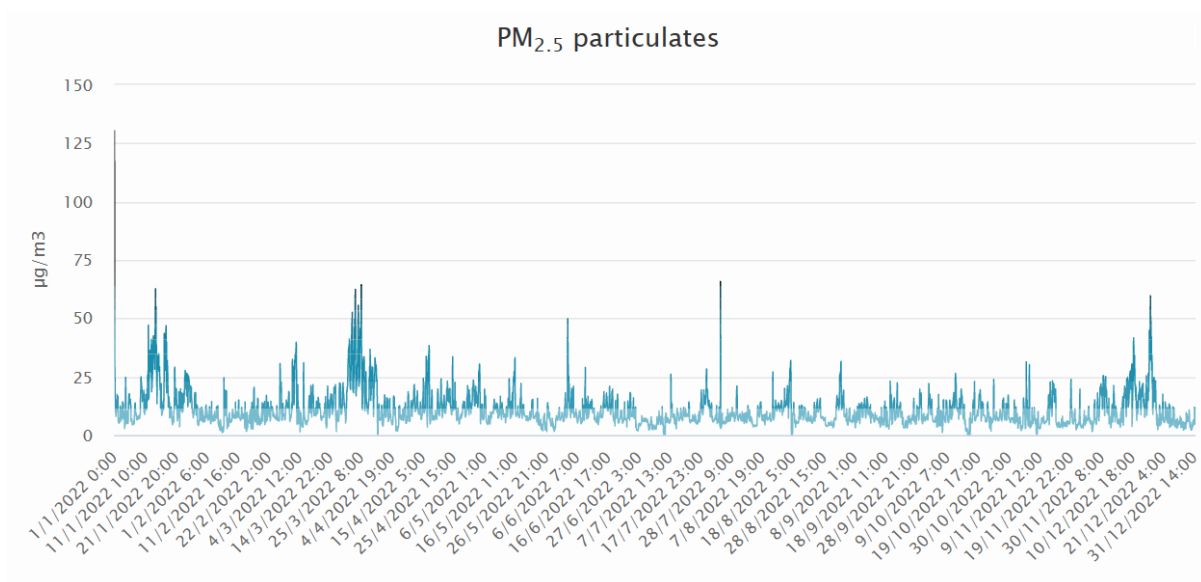


Figure 12. Hourly mean PM_{2.5} concentrations measured at the low-cost sensor at Harlington High Street, 1st January to 31st December 2022. Units: µg.m⁻³.

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

- Tables F. Annual Mean NO₂ Ratified Monitoring Concentrations (µg.m⁻³) at automatic monitoring sites.
- Tables G. Annual Mean NO₂ Ratified and Bias-adjusted Monitoring Concentrations (µg.m⁻³) at diffusion tube sites.
- Table I. NO₂ Automatic Monitor Results: Comparison with 1-hour Mean Objective.
- Table J. Annual Mean PM₁₀ Automatic Monitoring Results (µg.m⁻³).
- Table K. PM₁₀ Automatic Monitor Results: Comparison with 24-Hour Mean Objective.

- Table L. Annual Mean PM_{2.5} Automatic Monitoring Results ($\mu\text{g}\cdot\text{m}^{-3}$).

In addition, Tables H and M present data for 2021 and 2022 at two locations (Tavistock Road and Harlington High Street) where Low-Cost Sensors were deployed:

- Table H. Annual Mean NO₂ Monitoring Concentrations at Low-Cost Sensor sites ($\mu\text{g}\cdot\text{m}^{-3}$).
- Table M. Annual Mean PM_{2.5} Monitoring Concentrations at Low-Cost Sensor sites ($\mu\text{g}\cdot\text{m}^{-3}$).

Analysis of all Tables (F to M) indicates that, with exception of the Low-cost sensors at Tavistock Road and Harlington High Street that registered PM_{2.5} annual mean values slightly above $10 \mu\text{g}\cdot\text{m}^{-3}$, there are no other locations in the borough where the limit values and objectives and or targets for PM were exceeded in 2022 according to monitoring data. It is worth noting, however, that NO₂ annual mean concentrations of $36 \mu\text{g}\cdot\text{m}^{-3}$ and above, with two locations were exceedances to the annual mean objective were recorded, are of concern due to acknowledged inaccuracies in both monitoring and modelling approaches to assess air quality, with LBH continuing to focus efforts to improve air quality at such locations.

Irrespective of performance relative to the limit values, it is concerning that increased concentrations were recorded across the network, following the decline in concentrations that had been observed up to 2020. Reasons for this could lie in meteorological variation from year to year, an ageing vehicle fleet, reduced servicing of vehicles, and a return to pre-COVID levels of traffic. This will need to be kept under review.

Table F. Annual mean NO₂ ratified monitoring results (µg m⁻³) for the automatic monitoring sites in Hillingdon in 2022.

Site ID	Site Name	Valid data capture for monitoring period % ^a	Valid data capture, 2022, % ^b	Annual Mean Concentration (µg.m ⁻³)						
				2016	2017	2018	2019	2020	2021	2022
LHR2	London Heathrow	96.78	96.78	47.0	48	43	42	25	25	30
HIL	London Hillingdon	99.51	99.51	51.2	53	46	45	28	25	28
HI1	Hillingdon 1 - South Ruislip	98.96	98.96	42.9	46	36 ^d	34	16	27	28
HI3	Hillingdon 3 - Oxford Avenue	99.6	99.6	41.9	35	35	33	22	25	29
HRL	London Harlington	99.20	99.20	34.0	32	30	31	20	20	24
SIPS	Hillingdon Sipson	95.83	95.83	35.2	34	30	30	19	19	24
HIL1	London Harmondsworth	97.84	97.84	27.0	27	25	28	18	16	19
T55	Heathrow Green Gates	99.62	99.62	34.4	32	30	31	19	20	26
T54	Heathrow Oaks	98.31	98.31	31.0	26	28	26	17	19	20
HIL5	Hillingdon Hayes	99.69	99.69	45.9	47	43	41	31	34	34
LHRBR	London Heathrow Bath Road ^{c)}	48.16	48.16	-	-	-	-	44.5 (39.5)	34	36

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**.

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 2022.

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 2022)

Means for diffusion tubes have been corrected for bias.

Results have been distance corrected where applicable (no such cases are present in 2022).

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

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

Table G. Annual mean NO₂ ratified and bias-adjusted monitoring results (µg m⁻³) diffusion tubes for diffusion tubes in Hillingdon in 2022.

Site ID	Site Name	Valid data capture for monitoring period % ^a	Valid data capture, 2022, % ^b	Annual Mean Concentration (µg.m ⁻³) ^c						
				2016 ^c	2017 ^c	2018 ^c	2019 ^c	2020 ^c	2021 ^c	2022
HILL01	Co-located with London Hillingdon CM	100.0	100.0	34.3	45.3	42	38.6	25.6	25.7	29.4
HILL02	Uxbridge Day Nursery, Park Road	83.3	83.3	42.8	40.1	40.7	36.9	28.9	30.9	32.8
HILL03	Co-located with South Ruislip CM	100.0	100.0	40.2	46.7	43.4	35.5	26.7 ^d	27.3	30.0
HILL04	Hillingdon Primary School	100.0	100.0	26.8	28.2	28.5	27.8	22.6	23.3	24.7
HILL05	Colham Rd/Pield Heath Road opposite Hillingdon Hospital	100.0	100.0	32.3	36.1	33.4	34.1	27.4	25.4	27.8
HILL06	Warren Road Ickenham	100.0	100.0	39	45.6	37.6	35.0	30.9	29.7	32.2
HILL07	Harold Avenue, Hayes	100.0	100.0	34.7	43.3	37.7	36.9	28.1	28.8	30.5
HILL08	Phelps Way Hayes	100.0	100.0	32.1	33.4	33.9	33.9	24.1	25.3	26.7
HILL09	Cranford Lane Harlington	100.0	100.0	35.5	39.4	37.2	36.4	23.8	24.5	28.8
HILL10	Brendan Close Harlington	100.0	100.0	34.2	47.5	39.6	39.7	25.2	26.4	28.3
HILL11	Harmondsworth Green	83.3	83.3	24.2	27.8	28.5	25.3	20.3	18.2	21.9
HILL12	Heathrow Close Longford	100.0	100.0	31.9	34	36	33.0	22.4	23.0	28.2
HILL13	Tavistock Road	91.7	91.7	25.8	26.9	29.5	27.9	19.9	21.0	21.0
HILL14	Harefield Hospital Hill End Road (Outside AQMA)	100.0	100.0	19.1	22.1	20.5	22.4	15.5	15.4	16.5
HILL15	Field End School (Outside AQMA)	100.0	100.0	24	24.4	26.9	27.2	19.9	21.6	23.3
HILL16	Zealand Avenue, Sipson	100.0	100.0	29.4	42.7	38.6	37.7	25.4	26.4	31.0
HILL17	Silverdale Gardens, Hayes	100.0	100.0	26.1	32.7	31	31.6	24.7	24.2	24.1
HILL18	Blyth Road, Hayes	91.7	91.7	40.9	49	38.5	37.4	29.9	27.6	28.3
HILL19	Yiewsley High Street	100.0	100.0	32	37	35	34.6	27.1	27.6	28.7
HILL20	Porters Way, West Drayton	100.0	100.0	35.9	37.9	36.6	36.6	31.6	31.5	34.5
HILL21	Mulberry Crescent, West Drayton	100.0	100.0	29.6	34.7	34.9	32.3	23.4	24.1	27.9
HILL22	Long Lane, Uxbridge	100.0	100.0	42.5	45.5	42.4	38.3	31.3	33.7	33.5

HILL23	Harefield Road, Uxbridge	91.7	91.7	34.8	34.2	35.1	29.3	22.1	23.8	25.0
HILL24	Hillingdon Road, Uxbridge	100.0	100.0	35.5	40	36.9	34.7	27.6	32.0	31.1
HILL25	West End Lane, Harlington	100.0	100.0	37.4	45.6	39.3	38.7	28.3	28.5	32.8
HILL26	R/O Cleave Avenue, Hayes	100.0	100.0	42.1	51.5	42	40.0	28.2	26.8	29.2
HILL27	Botwell House Primary School	100.0	100.0	30.8	33.8	32.5	33.2	24.5	25.3	26.8
HILL28	Blyth Road, Hayes	83.3	83.3	32.3	35.7	31.7	31.7	23.0	23.5	27.1
HILL29	Little Benty, Road, West Drayton	100.0	100.0	-	-	-	32.6	23.7	23.0	25.2
HILL30	The Chase, Ickenham	91.7	91.7	-	-	-	25.3	20.0	19.2	19.9
HILL31	Dorchester Way, Hayes	100.0	100.0	-	-	-	32.5	24.3	23.2	25.3
HILL32	Field End Road, Eastcote. (Outside AQMA)	100.0	100.0	-	-	-	44.4	32.5	37.4	40.1 (40.1)
HILL33	34 Pinner Road	100.0	100.0	-	-	-	39.5	29.0	31.8	31.5
HILL34	177/179 Pinner Road	100.0	100.0	-	-	-	35.9	26.3	28.4	30.1
HILL35	West End Road, Ruislip (Outside AQMA)	100.0	100.0	-	-	-	36.9	28.9	28.0	27.2
HILL36	High Street Ruislip (Outside AQMA)	91.7	91.7	-	-	-	38.5	28.1	31.6	32.7
HILL37	2/6 High St. Ruislip (Outside AQMA)	91.7	91.7	-	-	-	39.9	28.1	30.4	31.7
HILL38	Oxford Ave, Near Oxford Avenue CM	100.0	100.0	-	-	-	44.0	33.0	28.9	35.6
HILL39	Pinglestone Close/Bath Road A4	100.0	100.0	-	-	-	45.7	29.2	29.1	37.1
HILL40	Sipson Close/Sipson Rd.	91.7	91.7	-	-	-	35.5	23.6	23.4	26.6
HILL41	A4 by junction with Sipson Way	100.0	100.0	-	-	-	48.7	31.8	32.9	40.1 (40.0)
HILL42	The Drive, Ickenham	91.7	91.7	-	-	-	39.6	28.9	29.3	31.5
HILL43	Victoria Road, Ruislip (Outside AQMA)	100	100	-	-	-	39.4	29.1	28.2	28.6
HILL44	Hillingdon NorthWood Focus Area (Outside AQMA)	100	100	-	-	-	-	-	27.0	26.1

Notes:

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

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 2022)

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

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

^c Means were “annualised” in accordance with LLAQM Technical Guidance, when valid data capture is less than 75%. (no such cases are present in 2022)

^d This is a triplicate measurement.

Two diffusion tube sites shown in Table G (HILL32 and HILL41) recorded concentrations of 40.1 ug.m⁻³. These are referred to as exceedances. The borough’s transport team will be notified that these sites need further assessment.

Table H. Low-Cost Sensors: Annual mean NO₂ ratified monitoring results (µg.m⁻³) for 2022.

Site ID	Site Name	Valid data capture for monitoring period % ^a	Valid data capture, 2022, % ^b	Annual Mean Concentration (µg.m ⁻³)	
				2021	2022
TAVIS	in front of 69 Tavistock Rd, West Drayton UB7 7QT	99.7	99.7	24.1	23.1
HARRD	485A High Street, Harlington, UB3 5DL	98.3	98.3	-	26.7

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 I. NO₂ automatic monitoring results for Hillingdon in 2022: Comparison with 1-hour mean objective, showing the number of 1-hour means where NO₂ > 200 µg.m⁻³.

Site ID	Site Name	Valid data capture for monitoring period % ^a	Valid data capture 2022 % ^b	Number of Hourly Means > 200 µg.m ⁻³						
				2016	2017	2018	2019	2020	2021	2022
LHR2	London Heathrow	97.9	97.9	8	12	0	1	0	0	0
HIL	London Hillingdon	99.76	99.76	2	0	0	0	0	0	0
HI1	Hillingdon 1 - South Ruislip	91.83	91.83	2	2	0	0	0	0	0
HI3	Hillingdon 3 - Oxford Avenue	97.16	97.16	0	1	0	0	0	0	0
HRL	London Harlington	99.6	99.6	0	0	0	0	0	0	0
SIPS	Hillingdon Sipson	91.64	91.64	0	0	0	0	0	0	0
HIL1	London Harmondsworth	98.53	98.53	0	0	0	0	0	0	0
T55	Heathrow Green Gates	95.03	95.03	0	0	0	0	0	0	0

Site ID	Site Name	Valid data capture for monitoring period % ^a	Valid data capture 2022 % ^b	Number of Hourly Means > 200 µg.m ⁻³						
				2016	2017	2018	2019	2020	2021	2022
<i>T54</i>	<i>Heathrow Oaks</i>	<i>99.57</i>	<i>99.57</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>HIL5</i>	<i>Hillingdon Hayes</i>	<i>99.05</i>	<i>99.05</i>	<i>1</i>	<i>12</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>LHRBR</i>	<i>Heathrow Bath Road</i>	<i>95.14</i>	<i>95.14</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>0</i>	<i>0</i>	<i>0</i>

Notes: Exceedance of the NO₂ short term AQO of 200 µg m⁻³ over the permitted 18 days per year or where the 99.8th percentile exceeds 200 µg m⁻³ are shown in **bold** (no instances). Where valid data are available for less than 85% of a full year, the 99.8th 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 J. Annual Mean PM₁₀ Automatic Monitoring Results (µg.m⁻³).

Site ID	Site name	Valid data capture for monitoring period % ^a	Valid data capture 2022 % ^b	Annual Mean Concentration (µgm ⁻³)						
				2016	2017	2018	2019	2020	2021	2022
LHR2	Heathrow	96.59	96.59	15	15	14	13	11	11	13
HIL	London Hillingdon	65.47	65.47	N/A	N/A	N/A	N/A	N/A	N/A	14
HI1	South Ruislip	95.03	95.03	22	17	17	17	18	17	19
HI3	Oxford Avenue	97.92	97.92	20	19	24	24	23	20	22
HRL	London Harlington	99.35	99.35	15	15	15	15	14	13	13
HIL1	Hillingdon Harmondsworth	99.68	99.68	23	23	18	15	16	14	16
HIL4	London Harmondsworth Osiris	90.38	90.38	16	14	16	14	15	13	14
T55	Heathrow Green Gates	99.89	99.89	14	13	14	13	12	12	13
T54	Heathrow Oaks Road	99.84	99.84	15	14	15	15	13	12	13
HIL5	Hillingdon Hayes	96.83	96.83	28	27	30	28	25	26	30
LHRBR	Heathrow Bath Road	47.91	47.91	-	-	-	-	14	14	16

Notes:

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

Exceedance of the PM₁₀ annual mean AQO of 40 µg m⁻³ are shown in **bold** (no instances).

Means should be “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 K. PM₁₀ Automatic Monitoring Results: Comparison with 24-Hour Mean Objective, Number of PM₁₀ 24-Hour Means > 50 µg m⁻³.

Site ID	Site name	Valid data capture for monitoring period % ^a	Valid data capture 2022 % ^b	Number of Daily Means > 50 µg m ⁻³						
				2016	2017	2018	2019	2020	2021	2022
LHR2	Heathrow	98.55	98.55	3	7	1	6	0	0	2
HIL	London Hillingdon	65.47	65.47	N/A	N/A	N/A	N/A	N/A	N/A	0
HI1	South Ruislip	88.36	88.36	9	6	1	3	1	0	4
HI3	Oxford Avenue	94.52	94.52	11	4	2	4	6	0	1
HRL	London Harlington	99.24	99.24	5	3	1	6	1	0	2
HIL1	Hillingdon Harmondsworth	95.79	95.79	4	6	1	0	0	0	0
HIL4	London Harmondsworth Osiris	84.3	84.3	0	1	0	1	0	0	0
T55	Heathrow Green Gates	96.06	96.06	3	3	1	4	0	0	2
T54	Heathrow Oaks Road	98.16	98.16	2	4	1	4	0	0	2
HIL5	Hillingdon Hayes	91.62	91.62	32	26	22	25	16	25	23
LHRBR	Heathrow Bath Road	94.76	94.76	-	-	-	-	0	0	4

Notes:

Exceedance of the PM₁₀ short term AQO of 50 µg m⁻³ over the permitted 35 days per year or where the 90.4th percentile exceeds 50 µg m⁻³ are shown in **bold**. Where the period of valid data is less than 85% of a full year, the 90.4th percentile is shown in brackets after the number of exceedances.

^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. Annual Mean PM_{2.5} Automatic Monitoring Results (µg.m⁻³).

Site ID	Site Name	Valid data capture for monitoring period % ^a	Valid data capture 2022 % ^b	Annual Mean Concentration (µg.m ⁻³)						
				2016	2017	2018	2019	2020	2021	2022
LHR2	Heathrow	99.84	99.84	10	9	8	9	7	7	8
HIL	London Hillingdon	65.47	65.47	N/A	N/A	N/A	N/A	N/A	N/A	7
HRL	London Harlington	98.83	98.83	10	9	9	10	8	8	8
HIL4	London Harmondsworth Osiris	55.77	55.77	6	7	6	5	7	6	7
T55	Heathrow Green Gates	99.93	99.93	10	8	7	8	7	7	8
T54	Heathrow Oaks Road	99.51	99.51	10	9	10	10	7	7	8
LHRBR	Heathrow Bath Road	22.65	22.65	-	-	-	-	11	8	9

Notes:

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

Exceedance of the PM_{2.5} annual mean AQO of 25 µg.m⁻³ are shown in **bold**.

Means should be “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 M. Low-Cost Sensors: Annual mean PM_{2.5} ratified monitoring results (µg m⁻³) for 2022.

Site ID	Site Name	Valid data capture for monitoring period % ^a	Valid data capture, 2022, % ^b	Annual Mean Concentration (µg.m ⁻³)	
				2021	2022
TAVIS	in front of 69 Tavistock Rd, West Drayton UB7 7QT	99.7	99.7	<u>12.2</u>	<u>10.6</u>
HARRD	485A High Street, Harlington, UB3 5DL	98.3	98.3	-	<u>10.5</u>

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.

Means should be “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%)

2.5 HS2 Monitoring Data

Construction work on HS2 has continued in 2022 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 NO₂ 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 N and bias adjusted (using 2022 national bias adjustment for 20% TEA in water for roadside locations, 0.83, Gradko) monitoring results for 2022 are presented in Table O.

Table N. Details of HS2 Diffusion Tubes in Hillingdon in 2022.

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 O. Diffusion tube results for NO₂ from the HS2 study in 2022, bias adjusted. Units: ug.m⁻³.

Site ID	Site location	Location type	2018	2019	2020	2021	2022
HS2-000020BNT	Lamp post on Pembroke Road	Background	25.3	23.4	20.3	23.4	20.8
HS2-000020BNU	Cowley Road sign post at junction with Hillingdon Road	Roadside	45.8	41.1	33.7	38.7	37.4
HS2-000020BNV	High Street sign post at junction with Pembroke Road	Roadside	43	37.7	30.5	33.3	32.4
HS2-000020BNW	Signpost on A4020 Uxbridge Road at junction with Long Lane	Roadside	46.4	40.9	31.9	37.8	35.7
HS2-000020BP8	Triplicate site at South Ruislip roadside automatic monitoring station	Roadside	37.8	36.4	27.5	30.6	28.2
HS2-000020BPK	Lamp post in crescent off Swakeleys Road	Roadside	35.8	34.9	27.8	31.5	28.2
HS2-000020BPL	Warren Road sign post on corner of Swakeleys Road and Warren Road	Roadside	41.3	37.6	31.4	32.4	30.7
HS2-000020BPN	Lamp post on B467	Roadside	31	31	25	29.7	29.1
HS2-000020BQH	Lamp post on High Road Ickenham	Roadside	42	38	30	35.1	36.5
HS2-000020BQN	Lamp post on Park Road	Roadside	50	45	33	37.8	34.9
HS2-000020BQP	Sign post on Long Lane	Roadside	42	41	31	33.3	34.0

Analysis of results indicates three locations (HS2-000020BNU, Cowley Road signpost at junction with Hillingdon Road; HS2-000020BNW, Signpost on A4020 Uxbridge Road at junction with Long Lane, and HS2-000020BQH, Lamp post on High Road Ickenham) register annual mean values equal or above 36 µg.m⁻³ (highlighted in bold on Table L); these are highlighted in red in Figure 13. Only HS2-000020BQH is a location predicted to be impacted by the HS2 scheme.

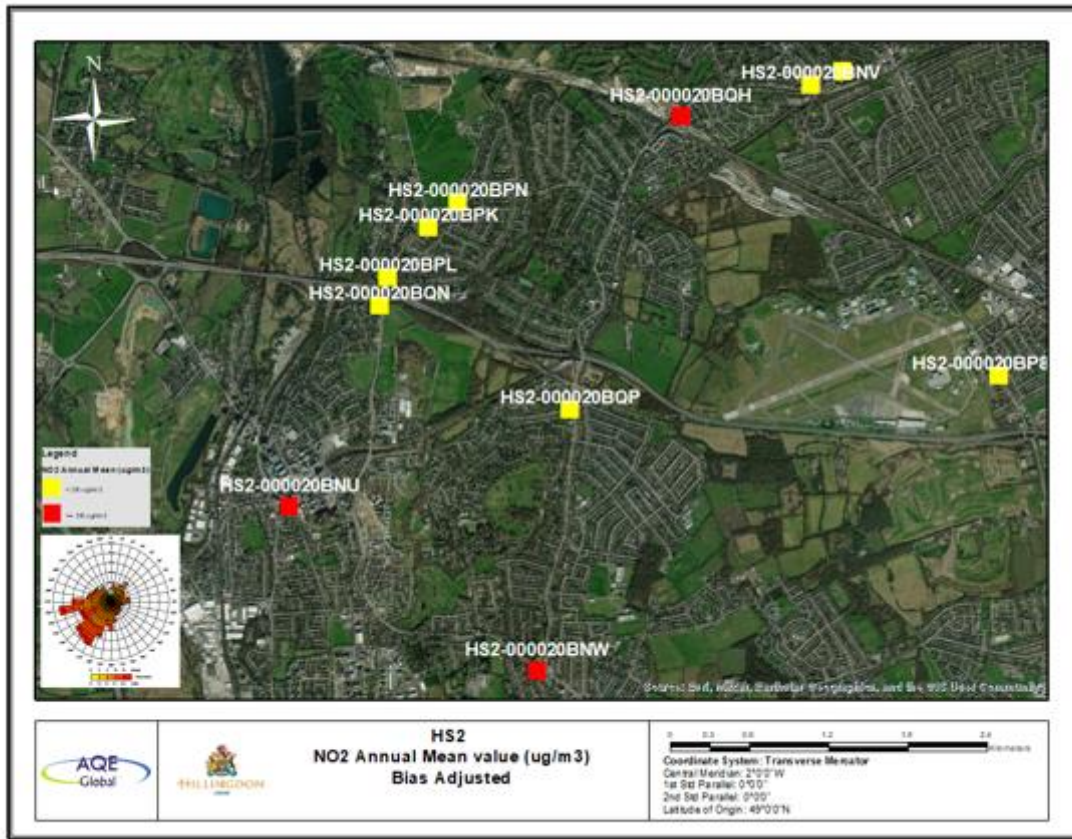


Figure 13. Annual mean NO₂ concentrations measured at HS2 diffusion tube locations, 2022, showing data for each site in the borough. Units: $\mu\text{g}\cdot\text{m}^{-3}$.

Yellow symbols identify sites where concentrations are below $36 \mu\text{g}\cdot\text{m}^{-3}$ whilst red symbols denote sites above this concentration and (allowing for uncertainty in measurement) may exceed limit values.

2.6 Further monitoring information

Further monitoring information is provided in Appendix D showing a statistical analysis on a monthly basis for NO₂ and PM₁₀ across the continuous monitoring sites. Hillingdon Hayes, presented the highest maximum values and upper quartile ranges throughout 2022, clearly depicted by the PM₁₀ data (Figures D25 to D26). Results highlight a need to pay particular attention to the Hayes area in future air quality work in the borough.

3 Actions to Improve Air Quality

3.1 ASR Highlights

3.1.1 Idling Vehicles

The Council continues to take an active participation in the issue of idling vehicles. In the calendar year 2022 there were 1,253 fines for idling vehicles were issued across the borough. This is an increase from 521 reported last year.

3.1.2 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. 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.

3.1.3 Schools and play areas

A number of activities are being carried out with schools:

Green infrastructure projects at schools

The pollution barrier project at schools was completed in 2022/2023. This has created green barriers at over 49 schools across the borough. In addition, 40 trees have been planted in local schools and the concept of the introduction of Nectar Cafes is being trialled using plants that are beneficial to insects and other wildlife. In addition to providing added opportunities for wildlife they will introduce the concept of quiet green zones within school playing areas.

Air quality raising awareness package for schools

Following the success of the air quality awareness workshops an additional 18 schools have participated in the scheme. Two schools had to cancel due to unforeseen circumstances but will be offered the opportunity in 2023/2024.

The aim of the workshops is to:

- Raise awareness of the potential consequences of poor air quality on health and well-being;
- Identify the causes of poor air quality;
- Understand ways pupils can reduce their negative impact on air quality;
- Motivate pupils to improve air quality and reduce their own exposure by walking, cycling or using public transport, especially for the daily journey to school;
- Investigate the positive benefits of using sustainable travel;
- Inspire pupils to motivate your entire school to make a positive change on air quality.

Across the borough, the workshops reached approximately 1,316 pupils. The feedback has been very positive, with all participating schools recommending the workshops.

Sustainable travel to school

The school travel team continue to work with schools across the borough. There are now 21 Gold, 5 Silver and 9 Bronze schools accredited under the STARS programme in the borough. Along with a number of others actively engaged with the Council, activities revolving around sustainable travel issues are in place across 47 schools. There is an increasing number interested specifically in air quality issues.

There is one school street currently operating in the borough. There are a further 5 schools where consultation on the implementation of school streets has been completed. These are currently paused awaiting approval for implementation. The Council is receiving further expressions of interest from schools seeking information on the concept of school streets.

In the reporting year, 216 new school cycle/scooter parking spaces were provided. In addition, 12,734 children received pedestrian training and 1,133 received bikeability training.

School superzone project

The Public Health team has been awarded funding for the school superzone project. Whilst aimed primarily at tackling obesity, this will tackle issues such as improving air quality including a specific focus on AirText and No idling and improving sustainable travel to school. It is due to start in September 2023. Key recommendations from the project will be used as a template to be applied at other schools if the funding is available.

Pollution barriers at other sensitive locations

The project to extend the concept of using green infrastructure to protect public exposure to pollution has been implemented at eleven amenity playing areas across the borough. The designs were tailored to each site and a combination of hedging and trees were used to maximise the benefits. Across these and other schemes, a total of 17,295 trees have been planted across the borough.

3.1.4 Healthy Streets Improvements

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. Two schemes were taken forward on busy shopping streets in the reporting year.

3.1.5 Healthy Streets Project

Funding has been released to audit borough roads, especially those in AQ Focus Areas, to determine the current healthy streets index score and identify plans for improvement. Prioritisation of implementation plans will be given for roads in sensitive areas such as those in air quality focus areas that are near to sensitive locations such as schools, hospitals, care homes and residential areas.

3.1.6 TfL Green and Healthy Streets Fund bid – North Hyde Road Focus Area

Hillingdon were awarded funds from the TfL Green and Healthy Streets Fund to help towards the implementation of works in Hayes, which is one of the key Air Quality Focus Areas.

The North Hyde Road Air Quality Focus Area Study identified several initiatives for a programme of work aimed at improving air quality in the area. The measures included installation of green infrastructure, cycling and walking infrastructure, rain gardens at key flooding areas, protecting public exposure to air pollution. The first phase of actions is being taken forward.

3.1.7 Harlington Air Quality Focus Area Study

The bid for National Highways funds for the Harlington Cycle Lane has been successful. The Council is currently awaiting release of the funds to allow for the detailed design work to enable the project to be implemented. The location has the benefit of providing a sustainable means of transport for airport workers as well as for the community providing a link between Crossrail at Hayes and Harlington station and the airport.

3.1.8 Improving walking and cycling

With TfL LIP funds the Council is developing a Cycle Wayfinding Strategy to improve signage for cyclists in the borough. Specific infrastructure projects have been taken forward to improve footpaths, cycle parking and local accessibility schemes. Funding has been released for the Green Cycle Routes project which will look to scope for 5 or 6 green cycle routes through the borough providing a low pollution option for cyclists.

3.1.9 AirText

In June 2022 Hillingdon worked with other North West London air quality and national health colleagues to roll out a campaign to all GPs across the region alerting them to the availability of AirText for their vulnerable patients and included an animated video on the impacts of air pollution on health plus an introductory leaflet on the harmful impacts on health from air pollution.

3.2 Specific questions raised by GLA

3.2.1 London Borough of Hillingdon Fleet

GLA asked for details of zero emission and zero emission capable vehicles in the borough's fleet. There are 291 vehicles in the Council fleet. This includes 3 fully electric pool cars and 5 self-charging hybrid pool cars. 5 fully electric small size vans have been ordered and delivery is expected at the end of July 2023. Going forward there will be two tenders for all purchases of vehicles, one for fully electric options and the other for diesel powered.

The vehicle replacement programme for 2022/2023 consisted of two 3.5t tippers and four 3.5 t Luton Vans, all Euro VI, which replaced vehicles that had been on hire.

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. –

3.2.2 NRMM Enforcement Project

GLA asked boroughs to confirm their continued support to the NRMM (non-road mobile machinery) Enforcement project in 2022 – 23. 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 project.

3.2.3 Air Quality Alerts

GLA asked whether boroughs support airTEXT (<https://www.airtext.info/>) or other direct alerts service. Hillingdon has been a member of the airTEXT consortium since its inception and will continue to support the project.

3.3 Challenges

The observation of increased concentrations of both PM and NO₂ in Hillingdon in 2022 demonstrates that year-on-year improvements in air quality cannot be taken for granted. It is necessary to pay careful attention to air quality in the borough in the coming year to better understand the reasons for this increase. The scale of increase in some areas brings into question the view that they could simply be a bounce-back after COVID.

Defra has proposed a new PM_{2.5} target, though this is not as strict as 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). Although monitoring suggests compliance with this across the borough there is little leeway at those sites between the new target and current levels. A further increase in concentrations of a similar magnitude to that seen in 2022 could be very problematic. The Mayor of London has produced bespoke reports for each borough aimed at providing air quality information for Public Health professionals. The report includes information on air pollution levels including the health impacts and the mortality burden of PM_{2.5}. Information is provided at a ward level plus at schools and other vulnerable receptors. Whilst there are no schools, or other identified establishments such as care homes and hospitals, in areas exceeding nitrogen dioxide above 40ug.m⁻³ (the current limit) there are several establishments (9 out of 15 care homes, 3 out of 8 hospitals and medical centres, and 58 out of 113 schools) identified as exceeding the PM_{2.5} target set for compliance in 2030. This needs to be accounted for in the revision of the AQAP scheduled for 2024.

The fact that the proposed UK limit value for PM_{2.5} is higher than the WHO Guideline suggest that it will remain of public concern for some time to come. Pressure for further reductions in NO₂ exposure may also build.

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. Whilst there is little current CHP use in the borough, this also needs to be kept under review. Similarly, biomass burning both in industrial and domestic premises.

The current AQAP expires in 2024, and a new one will be required for the period 2024-2029. This will require significant resource from the Council. The development of an efficient plan will require liaison across the Council, particularly with those working on transport and climate, to exploit the synergies that are present between policy in these different areas.

3.4 Opportunities

The new AQAP, scheduled to run from 2024 to 2029, provides opportunity to consider additional measures targeted at the areas of highest concentration in the borough. Close focus needs to be paid to the developing air quality situation in Hillingdon over the next year given the observed increases in concentrations reported here.

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.

Using tools such as the Mayor's Air Quality Positive guidance provides opportunity to build clean by design into the start of the process. As an example, the Uxbridge Masterplan opportunity not only for Uxbridge but for the other Focus Areas in the borough.

Attention needs to be given to tools and other systems being developed outside of the borough as they may provide opportunity for the introduction of cost-effective methods for air quality improvement. As an example, the TAPAS network⁵ (Tackling Air Pollution At School) is in the process of publishing web-based guidance called ActNow, to assist schools take the first steps in understanding air quality around and within school premises, and introduce them to low cost ways of reducing the exposure of children and staff.

3.5 Progress against each measure

Table P provides a full listing of the measures in Hillingdon's 2019 Action Plan and progress against them so far, with actions highlighted for the reporting year in bold.

Actions can be described as:

- Complete

⁵ <https://tapasnetwork.co.uk>

- Ongoing (actions for which management measures and budget are in place, but which are continual – air quality monitoring being a good example)
- In progress
- Planning stage
- Not started

Table P. Delivery of Air Quality Action Plan Measures. Progress in 2022/2023 identified in bold.

	Action	Progress	Further information
1a	Maintaining and where possible expanding monitoring network	<p>Ongoing. Current automatic network is maintained, additional automatic monitor brought into the network November 2019 by Heathrow Airport Ltd, located on the Bath Road, data will be available for 2020 reporting. Full review of diffusion tube monitoring network to ensure appropriate coverage across the borough including in AQ Focus Areas. New monitoring network in place July 2019. New automatic station on Bath Road in place, however, interruption of power supply due to Covid restrictions has paused the use of the monitoring station. Diffusion tube network all in place, full set of results for 2020.</p> <p>The Council has been provided with two Breathe London sensors. The locations had to be approved by the GLA and have a specific air quality focus. One is located in Tavistock Road in West Drayton. This road leads into the West Drayton/Yiewsley AQ Focus Area and is subject to numerous resident concerns in terms of pollution caused by the nature of, and frequency of, the traffic using the road associated with commercial operations in the local area. The second is located in the Harlington Air Quality Focus Area. This is a key route for traffic between the M4 and the A4 and Heathrow Airport.</p>	<p>Output//target/KPI - 2019 review of monitoring complete.</p> <p>The Breathe London project gives the opportunity for individuals, community groups, schools etc to “buy in” to the network and obtain their own low costs sensors. This project is currently in its 3rd round of projects bid for by local communities.</p>

	Action	Progress	Further information
		<p>2022/2023 The Council continues to support the air quality monitoring network.</p>	
1b	Fulfilling other statutory duties including regulation of industrial sources	<p>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.</p> <p><i>2021/2022</i> Regulation of industrial processes fully up to date.</p> <p>2022/2023 Regulation of industrial processes fully up to date.</p>	
2	Ensuring emissions from construction are minimised	<p>Ongoing via planning, 100% of all planning applications in 2019/2020 included the construction dust condition.</p> <p><i>2020/2021</i> Two complaints arising from commercial construction sites, resolved following site visits. 44 investigations of dust and emissions, all resolved.</p> <p><i>2021/2022</i> Eighteen complaints arising from commercial operations.</p> <p>2022/2023 Ten commercial dust complaints were made by residents. However, it was not possible to identify if they were specific to construction sites.</p>	

	Action	Progress	Further information
3	<p>Ensuring enforcement of Non-Road Mobile Machinery (NRMM) air quality policies (addresses emissions from e.g. building sites regarding cranes, generators, etc.)</p>	<p>Ongoing, via planning, 100% of all planning applications in 2019/2020 included the NRMM condition; Audits undertaken by Cleaner Construction for London on behalf of the Council (MAQF project).</p> <p><i>2019</i> 34 site audits undertaken of which 10 were self compliant, 15 worked towards and achieved compliance and 6 sites failed and were reported non compliant. Of the 6 non-compliant the reason was failure to register on the NRMM website, the remaining 2 did not adhere to the timescale for removal of non-compliant equipment.</p> <p><i>2020</i> NRMM report highlights that 16 site audits were undertaken. Of these only 1 was registered as non-compliant. The non compliance was due to an admin issue, lack of registration on the NRMM data base, the plant present on-site was all compliant.</p> <p><i>2021</i> NRMM report highlights that 19 audits were undertaken. Of these 4 were registered as non-compliant, with lack of active engagement following the audit the main reason for being registered as non-compliant.</p> <p>2022/2023 NRMM report highlights that 16 audits were undertaken. Of these 4 were registered as non-compliant. In 3 of these cases this was down to problems registering on the NRMM</p>	<p>Audits undertaken</p> <p>The Council continue to support Cleaner Construction for London in 2022/2023.</p>

	Action	Progress	Further information
		site. The 4 th non-compliant case was not registered but also had non-compliant equipment onsite. This was reported to LBH Planning Enforcement team for formal letter to the construction company.	
4	Reducing emissions from CHP	Ongoing and enforced by planning condition where applicable.	There is very little CHP in Hillingdon.
5	Enforce Air Quality Neutral (AQN) policy with more stringent application of mitigation required in the Hillingdon Focus Areas	<p>Local Plan part 2 adopted January 2020, the air quality policy states developments must be "at least air quality neutral" (AQN); Ongoing action via planning. AQN assessments requested on 100% of all planning applications in 2019/2020; Pollution damage cost calculations have been performed where appropriate and s106 was sought and secured where relevant, S106 ring fenced in the legal documentation as "towards initiatives to improve air quality in the Authority's area".</p> <p>AQN assessments have been requested on 100% of all relevant applications, 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.</p> <p>2022/2023 The AQN guidance has now been released.</p> <p>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.</p>	<p>See Table K and Appendix C for more detail on planning applications</p> <p>The new London Plan has acknowledged that in certain areas AQN is not sufficient.</p> <p>The AQ Neutral guidance has been released for consultation, currently awaiting final publication. The West London AQ Cluster Group has responded seeking consideration of <u>location</u> to be included as an important criteria for seeking zero emissions.</p> <p>The Council 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.</p>

	Action	Progress	Further information
		<p>Diesel generators when attached to development such as data centres can be a significant source of pollution and with the lifetime of the generator sets can remain active for around 25-30 years. LBH will continue to seek mitigation from this source and use the damage costs approach to gain an S106 obligation if mitigation provided by the developer is insufficient. This approach has been subject to a recent Planning Inquiry and accepted by the Inspector.</p>	
6	Ensuring adequate, appropriate, and well-located green space and infrastructure is included in new developments.	<p>Ongoing Via 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.</p>	<p>Specific planning condition to be used seeking a green infrastructure scheme designed to protect public exposure.</p> <p>Consideration is given to a 5-10% reduction in the associated pollution damage cost where bespoke pollution green infrastructure schemes are presented.</p>
7	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	<p>Awareness campaign enhanced by specific information in the Hillingdon People magazine (Sept/Oct 2019). This included information on what it means to live in a smoke control zone, the smoke control area regulations and signposting to information on compliant fuels and appliance. The magazine has a circulation of 113,000 individual households with an additional 4,000 for distribution via libraries, leisure centres and other Council establishments.</p> <p>The Council offers every resident a free garden waste collection service, this aims to reduce the need for garden bonfires. In 2019</p>	<p>The advice has been flagged regularly since the Covid 19 lockdown using the Council's social media updates to ask residents to avoid using wood burning stoves or lighting bonfires especially in these current times.</p> <p>There were 255 investigations undertaken including smoke/odour/fumes and bonfire emissions, unfortunately the data capture does not allow for further breakdown. Over 77% of these have been resolved, the remainder are awaiting further details.</p>

	Action	Progress	Further information
		<p>825 tonnes of garden and kitchen waste were collected. Construction sites are regulated via the planning regime which ensures bonfires on sites are not permitted.</p> <p><i>2020/2021</i> The Council has continued to use social media throughout the pandemic in regards to the use of wood burning stoves and bonfires; Hillingdon is a member of the GLA Wood Burning working group. The Group will consider the use of comms material to alert businesses and also the training of enforcement officers. There were 382 investigations undertaken including smoke/odour/fumes and bonfires. 100% have been investigated and resolved.</p> <p><i>2021/2022</i> Article in Hillingdon people magazine in conjunction with Public Health, along with information of the change in legislation in regard to appliances and fuel. There were 89 investigations undertaken including smoke/odour/fumes and bonfires, all have been resolved.</p> <p><i>2022/2023</i> There were 324 complaints arising from smoke/bonfires, in addition there were a further 46 complaints of dust emissions. Whilst the level of complaints is high, residents are now demonstrably aware of the reporting mechanism. The council has</p>	

	Action	Progress	Further information
		banned bonfires on all council allotment sites.	
8	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.	<p>A total of 210 boilers were replaced in 2019/20 financial year.</p> <p>An additional 14 boilers were replaced across 6 communal locations; 706 fire doors were replaced; All relevant developments are subject to a condition securing the installation of energy sources which are compliant with the Mayor's Sustainable Design and Construction SPG.</p> <p><i>2020/2021</i> The scheme addressed 24 communal boilers and 266 domestic boilers.</p> <p><i>2021/2022</i> A total of 258 domestic boilers were replaced and 5 major communal boiler plant rooms refurbished.</p> <p>In addition, the Council were awarded £3.5m under the Green Homes Grant to help with energy efficient measures in residential homes. Over 1,000 energy saving improvements have been put in place.</p> <p>2022/2023 A total of 696 boilers were replaced, 4 at Corporate sites, the remainder domestic.</p>	<p>All new boilers conform to the GLA requirements in terms of emissions.</p> <p>The implementation of the Climate Strategy will ensure continued reductions in emissions from these sources are prioritised.</p>
9	Master planning and redevelopment areas aligned with Air Quality Positive and Healthy Streets approaches	<p>Healthy Streets approaches are included in all relevant LIP projects; Relevant planning applications, especially in Air Quality Focus Areas, are requested to have an air quality positive approach.</p>	<p>The early release of Air Quality Positive guidance would help local authorities enforce this more consistently.</p>

	Action	Progress	Further information
		<p><i>2020/2021</i> This is anticipated for release in 2021. The London plan indicates its use for larger Masterplan developments. The Council will continue to apply an air quality positive approach to all relevant developments within Air Quality Focus Areas.</p> <p><i>2021/2022</i> The AQ Positive guidance has been released for consultation, currently awaiting final publication. The West London AQ Cluster Group has responded seeking consideration of <u>location</u> to be included as an important criteria for seeking an AQ Positive approach, not just the size of the development.</p> <p>The Council will continue to apply an air quality positive approach to all relevant developments within sensitive locations such as Air Quality Focus Areas, close to vulnerable receptors such as schools, care homes, hospitals etc.</p> <p><i>2022/2023</i> The AQ Positive has now been published. The Council will continue to apply an air quality positive approach to all relevant developments within sensitive locations such as Air Quality Focus Areas, close to vulnerable receptors such as schools, care homes, hospitals etc.</p>	
10	Public Health department taking shared responsibility for borough air quality issues and implementation of Air Quality Action Plans	<p>Air quality and health have been incorporated into the Hillingdon Improvement Programme for regular updates on actions.</p> <p><i>2020/21</i></p>	Hillingdon Asthma Friendly Schools update- given the current COVID 19 situation this will need to be reported next year.

	Action	Progress	Further information
		<p>There was an internal PH/AQ meeting following the report on the inquest into the death of Ella Adoo-Kissi-Debrah. Council staff also attended the GLA Workshop into the implications of her death, held on 18/03/21.</p> <p><i>2021/2022</i> The GLA Air Quality for Public Health document has been disseminated to the Public Health Director and to the Corporate Director. A briefing note is under discussion as to the next steps forward.</p> <p>2022/2023 Briefing notes have been disseminated, including the PM_{2.5} specific data, to care homes, rest homes and schools.</p> <p>Improving air quality is a key objective in the Schools Superzone project which is being taken forward by public health and the school travel team.</p>	
11a	Development of promotional tool for use at business engagement opportunities to raise awareness of initiatives to increase active travel and improve air quality	<p><i>2021/2022</i> The MAQF bid for the west London Cluster group to develop a promotional tool for business engagement was unsuccessful;</p> <p>2022/2023 See 11b) for discussion of Hillingdon-specific grant for local businesses which includes schemes addressing reducing emissions as one of the criteria for seeking funding.</p>	
11b	If MAQF bid unsuccessful, seek funding for development of Hillingdon-specific promotional tool and business engagement action plan	The funding for a Hillingdon specific business engagement tool will be considered in 2020/2021.	

	Action	Progress	Further information
		<p>All council town centre redevelopment schemes include consultation with local businesses, this will be investigated as a means of promoting the use of low and zero emission technologies.</p> <p>The Council has introduced a Targeted Problem Solving Group working with partners including the Police, Fire Brigade, TfL, Housing associations and a range of Council departments. There is a rolling programme of events at community hubs utilising supermarkets and community halls to engage with residents and local businesses.</p> <p>Information on air quality such as no idling and airtext has been included in the programme for dissemination at these events. Going forward, the Programme will incorporate a 'health focus' by engaging with medical centres and PH teams.</p> <p><i>2020/2021</i> Programme paused due to COVID-19.</p> <p><i>2021/2022</i> Due to the financial implications of the COVID restrictions and the impact on local businesses, the Council implemented a grant scheme. One of the target objectives for a successful application included: Green economy (working towards achieving climate change objectives) and encouraging businesses to engage and potentially support a range of 'green initiatives, which create business growth and employment.</p>	<p>The Targeted Problem Solving events engaged directly with 2258 people in the programme 2019/2020</p>

	Action	Progress	Further information
12	Supporting a direct alerts service such as AirText and promotion and dissemination of high pollution alert services	<p>Raising awareness of AirTEXT was enhanced by a specific campaign in the Hillingdon People magazine. The magazine has a circulation of 113,000 individual households with an additional 4,000 for distribution via libraries, leisure centres and other Council establishments.</p> <p>The data below is for the 8 month period April 2019 - November 2019. There are currently 176 members signed up in Hillingdon a total of 3551 alerts were sent out, the majority of these via email and text. There has been an increase of 12 new subscribers in this eight month period, an increase of around 7%. 178 subscribers in total in 2020, 5 more since the end of 2019. Total of 17 days of pollution alerts in the year which required 3,673 alerts to be sent out to Hillingdon subscribers.</p> <p>Ella Aloo-Kissi-Debrah inquest has highlighted the requirement for there to be provision of appropriate data to the general public, in particular, those vulnerable to the impacts of air pollution.</p> <p>Mayor of London alerts on pollution incidences are sent to schools, GPs and care homes.</p> <p><i>2021/2022</i></p> <p>There are currently 204 active subscribers in Hillingdon, an increase of 26 from the previous year. There was a total of 15 days of alerts which led to the provision of 2140 alerts.</p> <p>2022/2023</p> <p>An increase in 5 subscribers to 209 active subscribers.</p>	<p>The Action Plan target is for a 10% increase in members there has been a 7% increase in an eight month period which would roughly equate to a 10% increase if pro-rated for a year.</p>

	Action	Progress	Further information
		Airtex information, a video and air pollution and respiratory health booklet were prepared by air quality and public health officers In North West London. The resources were sent to all GPs in the North West Area.	
13	Encourage schools to join the TfL STARS accredited travel planning programme	<p>All schools were alerted to the No Idling webinars; 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. A total of 63 schools have received walking maps for the school and local area, the maps are displayed at each school entrance, with 11 schools expressing an interest for follow up workshops.</p> <p>The bikeability projects were all put on hold but have re-started April 19th with 22 schools booked in for training by the end of July. To coincide with Earth Day and the consultation on the Hillingdon Draft Climate Action Plan, a climate change competition was launched to all schools.</p> <p>Launch of the Big Pedal – schools compete to see who can record the greatest numbers of pupils, staff and parents making active journeys to school. To date 12 schools have signed up.</p> <p><i>2021/2022</i> There are 16 Gold, 4 Silver and 4 Bronze accredited schools in the borough. In addition 23 schools are actively engaged in the STARS scheme, it is anticipated that at least 7 will</p>	

	Action	Progress	Further information
		<p>attain a minimum of Bronze accreditation this year.</p> <p>This year, in terms of promoting active travel, 8,849 pupils at Key Stages 1 and 2 have received pedestrian training and 1,203 of Year 6 pupils have received bikeability cycle training.</p> <p>All schools now have Walking Maps at school entrances and new footpaths are put in place where possible to encourage active travel.</p> <p>Hillingdon schools participated in the Sustrans Big Walk and Wheel campaign (21st March-1st April 2022).</p> <p>2022/2023 There are now 21 Gold, 5 Silver and 9 Bronze accredited schools in the borough. A number of others are actively engaged with the Council and there are a number of activities being held in terms of sustainable travel and an increasing number interested specifically in air quality issues.</p>	
14	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	<p><i>2019/2020</i></p> <p>The target to identify a further five schools for pollution exposure reduction measures in terms of pollution barriers was met. The remainder of schools in the borough with playing areas close to busy roads have been identified and a programme of implementation of green barrier will be rolled out over the next 2 years.</p> <p>A trial has been undertaken of the delivery of an air quality and active travel education</p>	<p>Some of these have been completed, others have been impacted by lockdown and will be prioritised once lifted.</p> <p>The mayor's green infrastructure to protect people guidance has been used in determining species choice and appropriate planting schemes.</p>

	Action	Progress	Further information
		<p>package. A further 10 schools were identified to receive this within this school year, however delivery has been impacted by lockdown and school closures;</p> <p><i>2020/2021</i> The provision of pollution barriers at all relevant schools is nearing completion. Since the commencement of works there has been over 1800 hedges planted, 70 trees and over 500m of privacy screening across multiple schools. All schools were alerted to the No Idling webinars made available by the MAQF Project Officer.</p> <p><i>2021/2022</i> The final phase of the Green Barriers at Schools project is in progress. By the end of 2022 all relevant schools ie those with play areas open to emissions from nearby roads will have been provided with pollution barriers.</p> <p>A further four schools participated in the Mayors' No Idling project with children participating in workshops and outside school events.</p> <p>Funds have been secured for a programme of air quality awareness education workshops for 20 schools. These will be undertaken in the Summer Term.</p> <p>2022/2023 The pollution barrier project has been completed, this has improved the school environment at 49 schools.</p>	

	Action	Progress	Further information
		<p>An additional 40 trees have been planted in school grounds.</p> <p>A further 20 schools have been funded for air quality awareness education workshops.</p> <p>A school superzone fund has been received for Minet school, improving air quality is a key objective.</p> <p>Active travel at all schools is recorded under Action measure 13</p>	
15	Council procurement policies to promote use of cleaner vehicle technologies via contract tendering process	<p>All council contracts stipulate FORS registered and a minimum of EuroV1/6. The specific inclusion of low/zero emissions technologies will be investigated in 2020/2021</p> <p><i>2021/2022</i> All fleet vehicle replacement tenders will seek two tenders one for diesel - fuelled and one for electric.</p> <p>2022/2023 Further to the above, the Climate Change Action Plan now has an objective to replace all diesel-powered vehicles 3.5t or less before 2030.</p>	
16	Inclusion of opportunities in new developments and current town centre and transport improvement workstreams to reduce emissions from deliveries to local businesses and residents	<p>See 11b</p> <p>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 CO2, NOx and PM emissions plus a policy to actively reduce fuel</p>	The requirement for delivery and servicing plans to aim for achievement of gold award within a agreed timescale will be considered for developments in Air Quality Focus Areas.

	Action	Progress	Further information
		consumption and minimise their environmental impact.	
17	Reducing emissions from council fleets	<p>The council fleet replacement programme included the upgrade of 77 specialist vehicles to Euro V1. These all meet the ULEZ standard.</p> <p>Permission is currently being sought for the purchase of eight pool cars which will be low/zero emission technology.</p> <p>Electric equipment for the green spaces teams is being trialled, estimations of the fuel savings and emission benefits in terms of local air quality are being calculated for use in the business case for procurement if the equipment proves reliable.</p> <p>The main fleet replacement programme was paused in 2020/2021, due to restart in 2021/2022. However, the following vehicles were purchased in 2020/2021</p> <p>3 x fully electric pool cars 5 self charging hybrid pool cars.</p> <p><i>2021/2022</i> Additional 5 x fully electric vans. There will be two tenders for all purchases of vehicles going forward, one for fully electric options and the other for diesel powered.</p> <p>2022/2023 Climate Change Action Plan has an objective to replace all diesel-powered vehicles 3.5t or less before 2030.</p> <p>5 Council vehicles have been replaced with cleaner vehicles this financial year.</p>	

	Action	Progress	Further information
18	Green Infrastructure	<p>The Council tree planting scheme has been enhanced with the tree scheme from the Mayor of London (77 trees) and Trees for Cities (5,000 trees), plus a Council-led 5,000 free trees for residents and community groups.</p> <p><i>2020/2021</i> Amenity areas such as parks, where they are well-used and close to busy roads, are being investigated for the inclusion of hedging to act as a pollution barrier. The first project has been taken forward in Ruislip. A total of 6,250 trees were planted.</p> <p><i>2021/2022</i> A total of 11, 655 trees were planted in this across the borough.</p> <p>The protection of public exposure work as carried out in the schools project has been extended to include public recreational spaces. An initial eleven amenity areas and childrens' playgrounds in close proximity to busy roads have been approved for additional green infrastructure for implementation in 2022/2023</p> <p>2022/2023 Completion of the protection of public exposure project at 11 amenity playing areas in the borough. The designs were tailored to each site and a combination of hedging and trees were used to maximise the benefits.</p> <p>Nectar Cafes are being trialled at a number of schools; these give children outdoor</p>	<p>In 2021 the Council will develop a Tree Strategy for the borough. It is anticipated this will include 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.</p>

	Action	Progress	Further information
		<p>space which encourages wildlife and can act as outdoor learning zones.</p> <p>A total of 17,295 trees were planted across the borough.</p>	
19	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	<p>The first two Air Quality Focus Area (Hayes and Long Lane) studies have been completed. The recommendations are being considered for implementation in a phased approach starting in 2020/2021 providing funding is available.</p> <p>The Covid 19 pandemic and the pause in release of LIP funds has delayed the rollout of the implementation of several schemes. The West Drayton/Yiewsley Focus Area study has been completed, the Harlington Focus Area study has been scoped and due for completion on the release of funding.</p> <p><i>2021/2022</i></p> <p>The Harlington Road Air Quality Focus Area Study has been completed. Measures for implementation will be considered in 2022/2023.</p> <p>See 26) if the bid to the Green and Healthy Streets Fund is successful this will help implement actions from the North Hyde Road AQ Focus Area study</p> <p>2022/2023</p> <p>The TfL bid to Green and Healthy Streets Fund was successful. The Hayes Focus Area North Hyde Road study actions will be prioritised for implementation. The detailed design is currently underway for</p>	<p>Whilst the potential solutions have been identified, substantial funding will be required to see the projects through to full implementation. A phased approach will be taken starting with recommendations for the areas within the Focus Areas where the pollution levels are the highest.</p>

	Action	Progress	Further information
		<p>completion of one phase, TfL funds will be supplemented with AQ S106 funds.</p> <p>Long Lane Focus Area study – key junction in study identified for improvement, actions being implemented via TfL LIP funds.</p>	
20	<p>Ensuring that Transport and Air Quality policies and projects are integrated via the implementation of the Healthy Streets in LIP projects</p>	<p>The Oak Farm residential area has been subject to a successful, residents- led Healthy Streets Transport Study. The outcome is a series of recommendations which would allow the Oak Farm area to be characterised by the ten Healthy Streets indicators. Implementation will be taken forward in phases via the LIP. Implementation of this action in 2020/2021 has been impacted by COVID restrictions.</p> <p><i>2021/2022</i></p> <p>Funding has been allocated for a project to audit Hillingdon owned roads in terms of the Healthy Streets Index. This will identify actions for implementation using areas of poor air quality as a priority criteria for action.</p> <p>2022/2023</p> <p>The Healthy Streets study is currently being scoped, it is anticipated there will be a costed implementation plan in 2023/2024. Priority in terms of timescales will be given to streets in poor air quality areas.</p> <p>Town Centre improvement projects include an assessment of the Healthy Streets criteria for improvements within the project.</p>	<p>The Oak Farm area is in close proximity to the A40/Long Lane Air Quality Focus Area; The recommendations outlined for this Focus Area in action 19 will further enhance this residential area.</p>

	Action	Progress	Further information
21	Discouraging unnecessary idling by taxis and other vehicles	<p><u>MAQF No idling project</u> Two events were successfully held in Hillingdon. They involved over 600 children and engaged with 77 drivers. <u>Hillingdon specific actions</u> No Idling signage is in place at every school in the borough and in identified hotspots. Camera enforcement is in place on the School Keep Clear zigzag lines, 2,781 fines were issued from May 2019-31st January 2020 across the schools in the borough. The Council has continued with enforcement of idling vehicles across the borough, the total number of fines issued was 1,029.</p> <p><i>2021/2022</i> Four additional schools have participated in No idling workshops and events;</p> <p>The Council has continued with the enforcement of idling vehicles across the borough, the total number of fines issued was 521.</p> <p><i>Calendar year 2022</i> 1,253 FPNs issued to motorists who failed to turn off their idling engines.</p>	Five schools have been identified for 2020/2021, arrangements are currently postponed until lockdown restrictions are lifted.
22	Regular temporary car free days	<p>The council is trialling a school street scheme following concerns over road safety issues in a congested area near the school. This started in January 2020 but is temporarily postponed due to lockdown.</p> <p><i>2021/2022</i></p>	

	Action	Progress	Further information
		<p>The first school street in Hillingdon is now up and running, with a further five schools currently under consultation for a school street initiative to be implemented in 2022.</p> <p>2022/2023 Interest is growing in terms of more schools approaching the Council for information on school streets. 5 further school streets have now completed the consultation process, implementation is currently paused.</p>	
23	Using parking policy to reduce pollution emissions	<p>Investigation of this issue has been postponed until 2020/2021.</p> <p>2022/2023 No further action.</p>	
24a	Installation of Ultra-low Emissions Vehicle (ULEV) infrastructure (electric vehicle charging points, rapid electric charging points and hydrogen refuelling stations)	<p>The Council is currently undergoing procurement processes for a new service provider for the EV network. When complete, all of the Council network will be audited. With the introduction of EV pool cars additional infrastructure will be considered for the staff council car parks.</p> <p><i>2020/2021</i> The Council has started the process to procure a contract for the review of all EVCP in council car parks and take forward a pilot project to look at on-street residential charging.</p> <p><i>2021/2022</i> The Council has an EV strategy in place with short, medium and long term recommendations to increase EV awareness throughout the borough and increase the provision of infrastructure.</p>	Waiting for info on the rapid charger

	Action	Progress	Further information
		<p>2022/2023 A Council run project, funded by the Heritage Lottery fund is targeted at improving Cranford park. This includes accessibility for sustainable travel. Funding was released to enhance the EV provision within the car park.</p>	
25a	Provision of infrastructure to support walking and cycling	<p>Taken forward by the LIP programmes including the Grand Union Canal Quietways link between Hayes and Cranford Park. This will give residents in Hayes a pedestrian/cycle route choice to access Cranford Park.</p> <p><i>2020/2021</i> In terms of schemes, continued implementation of the Canal Towpath upgrade, there is now over 3km of towpath Quietway standard. Using emergency Active travel fund: Provision of access to the canal at Dawley Road; Cycle lanes on Park Road, Uxbridge and High Street, Ickenham / Long Lane down to Hillingdon Station. With the partial LIP funds made available:</p> <ul style="list-style-type: none"> • Consolidated the disjointed cycle provision on the A4020 Uxbridge Road • Cycling parking provision at Deansfield Primary School and Holy Trinity Primary School. • Upgrade to four footpaths in key locations <p>Provision of walking maps project to schools in the borough, current number of schools engaged 66.</p>	○

	Action	Progress	Further information
		<p>2021/2022 Harlington Road Air Quality Focus Area study will help to provide the evidence base for a funding bid for the provision of increased cycling infrastructure through Harlington High Street, linking Heathrow Airport with the Crossrail station at Hayes and Harlington. Details on bid expected in 2022.</p> <p>The Grand Union Canal towpath between Cowley Mill Road and Rockingham Road has been resurfaced to Quietways standard.</p> <p>2022/2023 Funds for canal improvements this financial year had to be re-allocated. Funds will be sought in 2023/2024 including for access points and wayfinding.</p> <p>The Harlington cycle way is currently waiting for the detailed design stage; funds are required to be released by National Highways to take this forward.</p> <p>TfL LIP funding has been used to develop a Cycle Wayfinding Strategy</p> <p>A project to scope a series of green routes for cycling across the borough has been taken forward.</p>	
25b	Air Quality Focus Area studies, Healthy Neighbourhoods schemes, Town Centre schemes will all include the identification of opportunities for increased walking and cycling	Four schemes in Hayes End, Uxbridge, Hayes and Springfield Road have been completed in 2019/2020. All schemes have prioritised the requirement for increased walking and cycling alongside improvements to public realm.	

	Action	Progress	Further information
		<p>The Ruislip Healthy Neighbourhood bid is currently being evaluated by TfL. Majority of action paused in 2020/2021 by COVID-19 pandemic and withdrawal of LIP funding. Harlington Focus Area study scoped for completion next year.</p> <p><i>2021/2022</i> Eight town centre schemes have been progressed, each have included the addition of screening planting and additional trees creating a healthier environment for pedestrians and other users See also 25b) and 28)</p> <p>2022/2023 Two schemes have been taken forward on busy shopping parades which have included planting taking into account the requirement for protecting public exposure. See also 19, 25a) and 28).</p>	
26	Continue to work in partnership with TfL to prioritise actions required to improve local air quality in Hillingdon	<p>There have been successful joint operations with TfL in regard to no idling, especially around Heathrow Villages. The Council enforcement officers issue fines for no idling offences and the TfL staff audit the paperwork to ensure the minicab is properly licensed. The Council will engage with TfL in regard to the implementation of recommendations of the Air Quality Focus Area studies as both are impacted by access to and the operation of TfL roads eg the Hayes Bypass for North Hyde Road and the A40 for Long Lane.</p> <p><i>2021/2022</i></p>	

	Action	Progress	Further information
		<p>Air quality was brought to the attention of the TfL Commissioner in a meeting with the borough Leader. Partnership working was requested for the AQFAs in the borough where the operation of the TfL road network impacts on specific roads and or junctions.</p> <p>In addition, as highlighted in the Mayor’s Air Quality in London 2016-2020 report, the impact of Low Emission Bus routes has a significant impact on air quality. At Putney High Street, annual mean NO₂ concentrations have reduced by 45% and exceedances of the hourly mean limit have reduced by 99% since 2016. Potential bus routes for Hillingdon include:</p> <ul style="list-style-type: none"> • A4 Bath Road; • Hayes Town Centre; • Uxbridge Road – continuation of the current Low Emission Route through to Uxbridge <p><i>2021/2022</i> A bid has been submitted to the TfL Green and Healthy Streets Fund. This is for the installation of green infrastructure, cycling and walking infrastructure in North Hyde Road in Hayes. The interventions for implementation were identified in the Hayes Air Quality Focus Areas study. If successful this will help implement improvement measures in one of the borough’s poorest air quality areas.</p> <p><i>2022/2023</i> The Green and Healthy Streets Fund bid was successful, implementation on</p>	

	Action	Progress	Further information
		<p>improvements to North Hyde Road are now underway.</p> <p>TfL LIP budget has taken forward a number of schemes in regard to walking and cycling infrastructure improvements.</p>	
27	<p>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</p>	<p>Air quality meetings currently paused due to COVID-19 pandemic</p> <p><i>2021/2022</i> The Heathrow Air Quality meetings have been re-instated, the first was held in February 2022.</p> <p>2022/2023 Heathrow AQ Working Group re-established, TORs established and working plan in progress. Update from the group will be reported to CISHA.</p>	
28	<p>Continue to work in partnership with Highways England to ensure effective mitigation of arising air quality impacts on the local communities</p>	<p>Regular updates are provided in regard to the progress of the M4 Smart Motorway scheme. The Council has offered access to the data from air quality monitoring undertaken by the Council in close proximity to the M4. This will help the HE evaluate the project in regard to the impacts on air quality.</p> <p>Response to DEFRA Call for Evidence in 2020/2021 that HE should be defined as Air Quality Partners.</p> <p><i>2021/2022</i> The Council, in conjunction with other parties, is seeking to put forward a joint bid to National Highways for improvements to cycle lanes around Heathrow. The Hillingdon portion,</p>	

	Action	Progress	Further information
		<p>approx £250k, would implement a cycle lane from the Bath Road, through Harlington High Street, to Hayes railway station and beyond.</p> <p>2022/2023 Awaiting release of funds from National Highways to take forward to detailed design stage.</p>	
29	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	<p>Monitoring sites for dust around construction sites in Hillingdon are being installed. Progress and monitoring data will be updated via the ASR system.</p> <p><i>2021/2022</i> Air quality monitoring by HS2 included in the monitoring section of this report.</p> <p><i>2021/2022</i> HS2 has continued with air quality monitoring in the borough. The Hillingdon HS2 annual air quality report is not yet ready for publication.</p> <p>2022/2023 HS2 has continued with air quality monitoring in the borough The full ratified report is not yet ready for publication.</p>	
30	Continue to work in partnership with neighbouring authorities to ensure collaboration on air quality where it will benefit the local communities	<p>The West London cluster group was unsuccessful in its bid to the MAQF in regard to the development of a business engagement tool.</p> <p>The group will continue to meet periodically to take forward joint actions and share best practice.</p> <p>Regular Teams meetings are scheduled for 2021/2022.</p>	

	Action	Progress	Further information
		<p><i>2021/2022</i> Quarterly meetings are in place, the group has taken forward joint responses to consultations such as the recent AQ Neutral and AQ Positive consultations plus the Defra Environmental Targets consultation.</p> <p>2022/2023 Quarterly meetings are in place along with member attendance at the London AQ Steering Group. A specific meeting has been facilitated by Hillingdon to discuss the implementation of AQN.</p>	

4 Planning Update and Other New Sources of Emissions

4.1 Planning update

4.1.1 Clean by design, 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. The number of planning apps and the improvements requested are in Table P and Appendix C.

London Plan's Policy SI1 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 measures 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 NO_x 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 NO₂ 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/m³ 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 NO₂ (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 received for data centres of considerable size (both within the borough and within neighbouring boroughs for which LBH was consulted on); with one having been approved.

It is important to mention that LBH considers PM_{2.5} emissions, in addition to NO_x 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 NO_x into the atmosphere on an annual basis. Given the sheer number of backup generators required in a couple of submitted planning applications, the total NO_x and PM_{2.5} emissions per area are significant and 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 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.

It is important to mention that the way the LBH planning system deals with data centre applications has been tested at two Public Inquiries which have taken place since the 2022 ASR with the conditions and damage cost calculations required by the borough accepted by the Inspectorate as valid and required.

Table Q. Planning requirements met by planning applications in London Borough of Hillingdon in 2022/2023.

Condition	Number
Number of planning applications where an air quality impact assessment was reviewed for air quality impacts	36
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	35
Number of developments where the AQ Neutral building and/or transport assessments not meeting the benchmark and so required to include additional mitigation	24
Number of planning applications with S106 agreements including other requirements to improve air quality	35
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.	35 conditions included. 31 registered and compliant ⁶ 4 unregistered/uncompliant and being chased.

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.

⁶ 16 up and running construction sites were checked for compliance in 2022/2023.

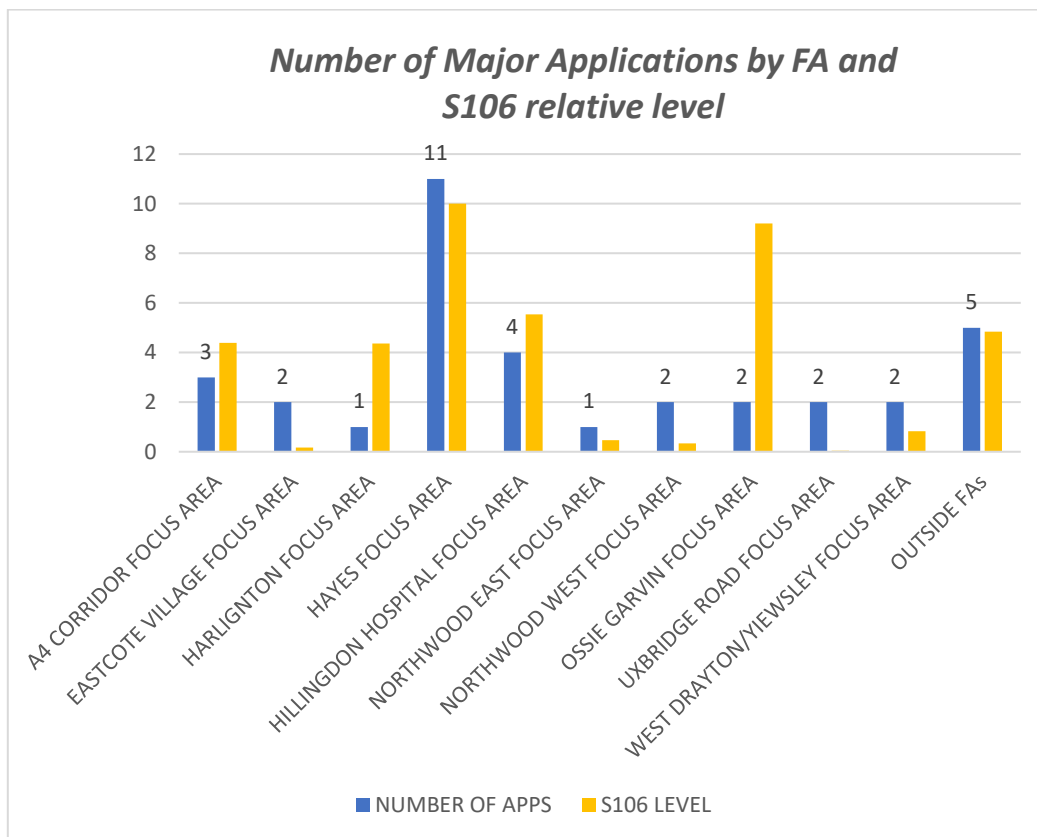


Figure 14. Number of Planning Applications per Focus Area and relative S106 contribution level to mitigate / offset pollutant emissions.

Figure 14 summarises the number of major planning applications per LBH Focus Area. It clearly depicts Hayes as the most fast-growing area with the highest pollutant (NOx and PM2.5) emission level being mitigated and or offset via a S106 approach. Hillingdon Hospital Focus Area has also presented a high development rate which is due to the plans for the Hillingdon Hospital area. Whereas Ossie Garvin Focus Area only presented 2 major applications during the 2022/2023 reporting year, the level of mitigation was relatively high due to the unsustainable development proposals received in the area and hence an elevated level of mitigation required to offset/minimise emissions within the FA. The out of borough application consultation is not mapped here for the level of mitigation required due to the extremely high level of emission reduction required per year which was presented during the subsequent Public Inquiry. During the Public Inquiry the Inspector accepted the fact that an extremely high level of air pollutant emissions released on an annual basis into the atmosphere (NOx and PM) (with SCR retrofitted) amounted to a total annual emission value of 44.594541 tonnes of NOx per year which is equivalent to additional 47, 075 vehicles onto the road network, calculated as per Defra’s Emission Factor Toolkit v11 for 2023 vehicle emissions for the outer London area fleet composition. These total annual pollutant emissions would translate into an air quality initial contribution to both Councils (London Borough of Hillingdon and Buckinghamshire) of £10,322,130 (excluding PM_{2.5} mitigation) to mitigate the effects of pollution across the AQMA by offsetting emissions.

Appendix A Details of Monitoring Site QA/QC

A.1 Automatic Monitoring Sites

Automatic monitors within Hillingdon are operated as part of the borough 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.

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 50% Triethanolamine (TEA) in acetone 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 NO₂ tube analysis and the annual Field Inter-Comparison Exercise. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO₂ 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. 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 AR037	AIR PT AR039	AIR PT AR040	AIR PT AR042	AIR PT AR043	AIR PT AR045	AIR PT AR046	AIR PT AR049	AIR PT AR050
Round conducted in the period	May – June 2020	July – August 2020	September – October 2020	January – February 2021	May – June 2021	July – August 2021	September – October 2021	January – February 2022	May – June 2022
Gradko International	NR [2]	NR [2]	75 %	25 %	100 %	100 %	100 %	100 %	100 % [1]

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

[2] Round was cancelled due to pandemic.

Diffusion Tube Local Bias Adjustment Factors

There is a set of triplicate diffusion tubes co-located with the HI1 (Hillingdon 1 - South Ruislip) automatic monitoring station. Details of the sites are presented in Table A2 below. A local bias adjustment factor of 0.92 has been calculated from the Precision and Bias

Adjustment spreadsheet (v04)⁷; the outputs from the spreadsheet are shown in Table A3 below.

To derive the local adjustment bias adjustment factor, triplicate diffusion tubes HILL03 results were compared with the reference method (chemiluminescence) in a co-location study with continuous monitor HI1 (Hillingdon 1 - South Ruislip, roadside site).

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 $\mu\text{g m}^{-3}$ and includes 95% confidence intervals. Details of the sites and calculations undertaken are presented in Tables A2 and A3 below.

Table A2. Details of the co-location sites and annual means ($\mu\text{g m}^{-3}$) for each site for 2022.

Name and Annual Mean ($\mu\text{g m}^{-3}$) Continuous Monitor	Type	Reference Method	Name and Annual Mean ($\mu\text{g m}^{-3}$) Diffusion Tube(s)
HI1, Hillingdon 1 - South Ruislip (28.0)	Roadside	Chemiluminescence	HILL03 (30.0)
HI3, Hillingdon 3 - Oxford Avenue (29.0)	Background	Chemiluminescence	HILL01 (28.9)

⁷ <https://laqm.defra.gov.uk/air-quality/air-quality-assessment/local-bias/>

Table A3. Local Bias Adjustment Factor Calculation for 2022 - HILL03 & HI1.

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	04/01/2022	31/01/2022	33.97	37.86	35.12	36	2.0	6	5.0	39.9	91.8	Good	Good
2	31/01/2022	02/03/2022	24.29	23.77	24.67	24	0.5	2	1.1	22.7	91.8	Good	Good
3	02/03/2022	28/03/2022	38.90	38.23	40.55	39	1.2	3	3.0	37.7	91.8	Good	Good
4	28/03/2022	03/05/2022	27.71	25.50	25.24	26	1.4	5	3.4	26.6	91.8	Good	Good
5	03/05/2022	07/06/2022	21.70	23.46	23.62	23	1.1	5	2.6	21.6	91.8	Good	Good
6	07/06/2022	06/07/2022	20.80	22.14	23.17	22	1.2	5	3.0	19.5	91.8	Good	Good
7	06/07/2022	02/08/2022	27.14	27.50	26.80	27	0.4	1	0.9	19.7	91.8	Good	Good
8	02/08/2022	30/08/2022	30.20	30.08	28.05	29	1.2	4	3.0	21.1	91.8	Good	Good
9	30/08/2022	27/09/2022	30.45	29.24	28.50	29	1.0	3	2.4	26.0	91.8	Good	Good
10	27/09/2022	01/11/2022	32.74	32.28	32.01	32	0.4	1	0.9	30.8	91.8	Good	Good
11	01/11/2022	28/11/2022	36.41	33.02	33.04	34	2.0	6	4.9	29.9	91.8	Good	Good
12	28/11/2022	03/01/2023	37.38	36.83	38.16	37	0.7	2	1.7	37.1	91.8	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
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(Check average CV & DC from Accuracy calculations)

Site Name/ ID:	HILL03
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Accuracy (with 95% confidence interval) without periods with CV larger than 20%	Precision 12 out of 12 periods have a CV smaller than 20%
Bias calculated using 12 periods of data	WITH ALL DATA
Bias factor A 0.92 (0.85 - 1.01)	Bias factor A 0.92 (0.85 - 1.01)
Bias B 8% (-1% - 18%)	Bias B 8% (-1% - 18%)
Diffusion Tubes Mean: 30 μgm^{-3}	Diffusion Tubes Mean: 30 μgm^{-3}
Mean CV (Precision): 4	Mean CV (Precision): 4
Automatic Mean: 28 μgm^{-3}	Automatic Mean: 28 μgm^{-3}
Data Capture for periods used: 92%	Data Capture for periods used: 92%
Adjusted Tubes Mean: 28 (26 - 30) μgm^{-3}	Adjusted Tubes Mean: 28 (26 - 30) μgm^{-3}

Jaume Targa, for AEA
Version 04 - February 2011

Diffusion Tube National Bias Adjustment Factors

The diffusion tubes for the year 2022 were supplied by Gradko International, the tubes were prepared using the 50% Triethanolamine (TEA) in acetone preparation method. The national bias adjustment for Gradko is 0.82 (based on 14 studies, version 03/23) as derived from the national bias adjustment calculator (National Diffusion Tube Bias Adjustment Factor Spreadsheet, version 03/23 published in March 2023)⁸. All local Authority collocation studies were 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%).

Discussion of choice of Factor to use

The diffusion tube data has 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) provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. 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 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 fact where available and relevant to diffusion tube sites.

⁸ <https://laqm.defra.gov.uk/air-quality/air-quality-assessment/national-bias/>

The local bias adjustment factor of 0.92 derived from the co-location study at the HI1 automatic monitoring location has been used to adjust the data. The automatic monitor and co-located diffusion tubes recorded a high data capture (12 months of data capture) within 2022 and were deemed of having good precision.

The national bias adjustment factor for Gradko in 2022 (as per March 2023 issue, spreadsheet version number: 03/23), obtained from the overall national bias adjustment spreadsheet⁹ (based on 14 studies) is 0.82. However, during 2022, LBH has achieved a good data capture and data precision for its co-located diffusion tubes which allowed a suitable calculation of a local adjustment factor of 0.92. Given that the local adjustment factor is preferred due to a better representation of local conditions, and given it is more conservative than the national bias adjustment, it has been applied to the collected diffusion tube monitoring data in 2022.

The derived local bias adjustment factor is more conservative than the national bias adjustment. A summary of historical bias adjustments applied in previous years is presented in Table A4 below.

Table A4. 2022 Bias Adjustment Factor and Historical Comparison.

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
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

⁹ <https://laqm.defra.gov.uk/air-quality/air-quality-assessment/national-bias/>

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.

Appendix B Full Monthly Diffusion Tube Results for 2022

Table B1. NO₂ Diffusion Tube Results 2022 – London Borough of Hillingdon.

Site ID	Valid data capture for monitoring period % ^a	Valid data capture 2022 % ^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			
HILL01	100.0	100.0	34.25	29.66	46.06	24.00	23.78	24.37	25.68	26.74	30.96	40.98	40.05	37.28	32.0	29.4	
HILL02	83.3	83.3	39.11	28.09	43.37	32.55	28.01	32.18	33.37	38.43	40.83	37.43	36.44	38.31	35.7	32.8	
HILL03	100.0	100.0	33.97	24.29	38.90	27.71	21.70	20.80	27.14	30.20	30.45	32.74	36.41	37.38	30.1	28	
HILL03	100.0	100.0	37.86	23.77	38.23	25.50	23.46	22.14	27.50	30.08	29.24	32.28	33.02	36.83	30.0	28	
HILL03	100.0	100.0	35.12	24.67	40.55	25.24	23.62	23.17	26.80	28.05	28.50	32.01	33.04	38.16	29.9	28	
HILL04	100.0	100.0	34.14	18.88	35.15	24.14	21.36	20.00	22.07	26.67	29.14	28.63	29.47	32.15	26.8	24.7	
HILL05	100.0	100.0	35.63	30.52	36.16	20.69	25.10	25.00	24.57	25.73	31.14	35.56	37.22	35.58	30.2	27.8	
HILL06	100.0	100.0	42.78	36.79	35.87	26.98	27.12	30.84	28.94	28.52	Missing	40.57	46.05	40.26	35.0	32.2	
HILL07	100.0	100.0	43.27	30.80	40.81	24.21	25.22	25.68	27.17	27.87	32.31	36.71	40.81	43.41	33.2	30.5	
HILL08	100.0	100.0	35.46	28.66	34.78	23.52	21.56	20.47	19.88	22.95	26.94	36.21	37.55	40.24	29.0	26.7	
HILL09	83.3	83.3	40.68	28.23	30.89	23.46	23.37	25.06	23.63	24.88	31.92	38.30	43.39	41.42	31.3	28.8	
HILL10	100.0	100.0	38.60	36.94	35.57	23.19	24.45	27.05	26.64	25.45	30.90	39.10	Missing	Missing	30.8	28.3	
HILL11	91.7	91.7	29.64	20.60	30.30	19.11	16.95	16.59	20.47	21.27	26.15	30.18	Missing	30.88	23.8	21.9	
HILL12	100.0	100.0	38.13	28.78	39.71	23.06	23.13	23.47	26.80	27.11	31.61	36.67	35.79	34.00	30.7	28.2	
HILL13	100.0	100.0	8.60	20.56	32.44	19.94	17.79	17.20	18.51	21.03	26.39	30.71	29.99	30.34	22.8	21.0	
HILL14	100.0	100.0	26.03	13.89	25.93	13.85	12.40	10.38	12.51	13.51	18.43	21.36	20.83	25.81	17.9	16.5	
HILL15	100.0	100.0	36.80	20.39	33.69	21.64	17.44	16.19	22.19	21.13	25.25	26.98	28.54	33.09	25.3	23.3	
HILL16	91.7	91.7	40.79	Missing	36.34	24.86	26.36	27.81	28.73	28.54	35.67	39.56	41.26	40.39	33.7	31.0	
HILL17	100.0	100.0	37.99	Missing	33.65	20.56	16.87	16.36	18.20	20.02	23.83	30.89	35.94	33.98	26.2	24.1	
HILL18	100.0	100.0	38.56	28.63	36.56	24.27	25.01	25.78	23.28	24.86	28.91	37.55	38.45	37.22	30.8	28.3	
HILL19	100.0	100.0	40.39	29.14	35.10	23.43	22.26	20.39	28.32	27.37	35.52	35.27	39.25	37.36	31.1	28.7	
HILL20	100.0	100.0	47.03	36.60	44.63	27.30	29.38	34.70	31.45	29.83	36.14	43.29	46.61	43.16	37.5	34.5	
HILL21	91.7	91.7	36.82	27.88	39.07	23.09	18.73	22.48	23.96	25.72	28.92	38.43	42.36	36.47	30.3	27.9	
HILL22	100.0	100.0	44.99	33.48	42.91	33.03	31.42	29.44	34.33	23.73	41.54	38.05	39.28	44.53	36.4	33.5	
HILL23	100.0	100.0	35.16	Missing	36.43	23.35	20.75	18.92	22.08	33.39	29.12	26.32	21.53	31.31	27.1	25.0	
HILL24	100.0	100.0	44.25	28.05	42.97	25.75	26.52	26.00	30.32	27.37	41.34	38.98	28.88	45.58	33.8	31.1	
HILL25	100.0	100.0	43.46	34.00	36.40	31.01	26.27	29.03	25.20	26.25	35.48	42.97	48.82	49.10	35.7	32.8	
HILL26	83.3	83.3	37.48	31.16	33.27	23.79	24.47	25.68	Missing	26.41	29.40	35.91	39.47	41.82	31.7	29.2	

Site ID	Valid data capture for monitoring period % ^a	Valid data capture 2022 % ^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		
HILL27	100.0	100.0	36.75	25.78	37.56	25.83	21.64	19.70	21.60	22.03	29.14	34.13	35.74	40.32	29.2	26.8
HILL28	91.7	91.7	39.24	27.46	34.40	22.76	21.65	20.58	21.25	37.71	26.80	30.42	35.06	36.63	29.5	27.1
HILL29	100.0	100.0	31.17	25.99	35.83	21.12	20.29	19.76	21.40	21.46	26.52	33.14	34.76	37.47	27.4	25.2
HILL30	100.0	100.0	28.71	Missing	31.16	17.15	16.99	15.40	16.41	17.51	20.52	25.39	27.35	Missing	21.7	19.9
HILL31	100.0	100.0	35.01	26.89	34.33	21.36	17.05	21.23	21.27	22.08	24.86	31.79	38.90	35.72	27.5	25.3
HILL32	100.0	100.0	52.53	40.76	51.05	39.05	34.95	36.12	42.70	42.42	48.20	44.93	43.38	46.63	43.6	40.1
HILL33	100.0	100.0	45.46	32.56	41.10	28.00	28.14	29.63	30.66	28.23	36.83	29.70	38.50	42.12	34.2	31.5
HILL34	91.7	91.7	48.81	31.61	43.64	25.72	24.37	24.12	25.67	21.76	32.78	34.15	37.22	42.22	32.7	30.1
HILL35	91.7	91.7	41.47	24.84	43.26	24.73	23.00	18.84	22.10	21.66	25.57	30.68	38.07	40.19	29.5	27.2
HILL36	100.0	100.0	44.61	29.41	48.77	31.75	27.80	24.87	32.25	37.06	38.12	37.39	39.28	Missing	35.6	32.7
HILL37	100.0	100.0	43.25	32.58	41.43	30.50	28.65	29.38	31.72	31.26	Missing	37.97	Missing	37.74	34.4	31.7
HILL38	91.7	91.7	52.70	38.41	47.27	31.58	33.78	28.66	30.34	31.51	35.18	41.02	46.75	47.15	38.7	35.6
HILL39	100.0	100.0	51.32	36.65	51.46	31.20	31.71	31.97	35.57	33.52	38.94	46.61	48.91	46.01	40.3	37.1
HILL40	91.7	91.7	37.77	27.14	39.65	24.76	20.79	22.52	<0.59	27.56	29.18	38.67	37.26	40.82	28.9	26.6
HILL41	100	100	48.20	41.28	56.09	33.43	32.60	36.99	39.41	38.51	44.43	49.88	52.24	49.97	43.6	40.1
HILL42	100	100	38.77	35.54	45.66	27.69	24.34	28.51	28.60	28.38	33.37	38.82	43.23	37.71	34.2	31.5
HILL43	100.0	100.0	38.75	30.38	39.18	24.64	24.05	25.84	26.73	24.88	30.14	31.79	36.56	40.48	31.1	28.6
HILL44	83.3	83.3	35.57	21.50	34.60	28.03	25.09	23.13	26.20	29.38	31.22	26.52	26.46	33.25	28.4	26.1

Notes

Concentrations are presented as µg m⁻³.

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

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.

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 0.92 was applied to the data

Appendix C Details of major planning applications evaluated for Air Quality for 2022/2023 by Focus Area

Table C1. Detailed list of planning applications evaluated for air quality in London Borough of Hillingdon.

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome	Neutral
A4 CORRIDOR FOCUS AREA				
Planning Ref	43794/APP/2021/3685			NO
AXIS HOUSE 242 BATH ROAD SIPSON Erection of a hotel and associated access, parking, landscaping and refuse storage. Further Details: Erection of a 157 bedroom hotel of varying height up to 7 storeys, with 23 parking spaces, access from Egerton Way, landscaping and refuse storage	The proposed development is located within the LBH Air Quality Management area (AQMA) and within the A4 Corridor LBH Focus Area (FA) bringing additional traffic emissions which will add to current poor air quality	The development is not Air Quality Neutral and further action is required to reduce emissions. The level of mitigation required to the proposed development for traffic emissions is £130,583	Therefore, a section 106 agreement with the LAP of £130,583 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. Two Air Quality conditions were required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.	
Planning Ref	41632/APP/2022/2301			NO
HEATHROW FLIGHTPATH NCP CAR PARK BATH ROAD SIPSON UB7 0DU Demolition of existing car park and redevelopment for industrial (Use Class B2); storage or distribution (Use Class B8); and/or light industrial (Use Class E(g)(iii)) purposes, with ancillary office space, landscaping, car parking,	The proposed development is located within the LBH Air Quality Management area (AQMA) and within the A4 Corridor LBH Focus Area (FA) bringing additional traffic emissions which will add to current poor air quality	The development is not Air Quality Neutral and further action is required to reduce emissions. The level of mitigation required to the proposed development for traffic emissions is £ 417,930	Therefore, a section 106 agreement with the LAP of £417,930 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. Two Air Quality conditions were required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.	

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome	Neutral
servicing and access arrangements				
Planning Ref	43794/APP/2022/2500			NO
AXIS HOUSE, 242 BATH ROAD SIPSON Change of use of parking spaces from residential use to a paying public car park.	The proposed development is located within the LBH Air Quality Management area (AQMA) and within the A4 Corridor LBH Focus Area (FA) bringing additional traffic emissions which will add to current poor air quality.	Insufficient information to ascertain compliance with the London Plan and LBH local policies and the Air Quality Local Action Plan	Refusal.	
A40 SWAKELEYS ROAD FOCUS AREA				
No MAJOR applications DURING 2022/2023 reporting year				
A40 / LONG LANE FOCUS AREA				
No MAJOR applications DURING 2022/2023 reporting year				
A40/SOUTH RUISLIP FOCUS AREA				
No MAJOR applications DURING 2022/2023 reporting year				
EASTCOTE VILLAGE FOCUS AREA				
Planning Ref	2145/APP/2022/3534			YES
GRANGEWOOD SCHOOL FORE STREET EASTCOTE PINNER	The proposed development is located within the LBH Air Quality Management area	The development is Air Quality Neutral and Air Quality Positive.	Two Air Quality conditions were required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.	

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome	Neutral
Demolition of existing school building and construction of part one storey, part two storey Special Education Needs and Disability School (SEND) (Use Class F), together with associated landscaping, play space, access, refuse and recycling storage, car and cycle parking and associated works.	(AQMA), and within 522m from Eastcote Village Focus Area bringing additional traffic emissions which will add to current poor air quality			
Planning Ref	51321/APP/2023/24			NO
HAYDON HOUSE, 296 JOEL STREET EASTCOTE PINNER Demolition of the existing building and construction of a four-storey building, comprising 13 residential units, including associated landscape works, provision of bicycle and bin storage and car parking space. (following the approved change of use ref. 51321/APP/2022/1861).	The proposed development is located outside the LBH Air Quality Management Area and within the LBH Eastcote Village Focus Area bringing additional traffic emissions which will add to current poor air quality	The proposed development is not Air Quality Neutral. Further, according to LBH Local Action Plan, proposed development within Focus Areas (or with impacts on FAs) needs to be Air Quality positive and further action is required to reduce total emissions produced by its operation. The level of mitigation required to the proposed development for traffic emissions is £20,988	Therefore, a section 106 agreement with the LAP of £20,988 is to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. Two Air Quality conditions were required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.	
HARLINGTON FOCUS AREA				
Planning Ref	19758/APP/2021/4628			NO
The Elms 371A HIGH STREET HARLINGTON Demolition of existing buildings and structures and redevelopment of the site to provide 2,116 sqm of flexible Class E(g)(iii), B2 and B8 use floorspace, along with associated access, servicing areas, car parking and soft	The proposed development is located within the LBH Air Quality Management area (AQMA), and within the Harlington LBH Focus Area (FA) bringing Additional traffic emissions which will add to current poor air quality	The development is not Air Quality Neutral and further action is required to reduce emissions. The level of mitigation required to the proposed development for traffic emissions is £546,344.	Therefore, a section 106 agreement with the LAP of £546,344 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. Two Air Quality conditions were required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.	

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome	Neutral
landscaping (amended plans received 02.09.22)				
HAYES FOCUS AREA				
Planning Ref	1331/APP/2022/2553			NO
Canteen Building, Former Nestle Factory site NESTLES AVENUE HAYES UB3 4RF Demolition and redevelopment of the former canteen building to provide a new healthcare facility (Class E(e)), nursery (Class E(f)) and residential building (Block H) (Class C3) with a commercial unit at ground floor (Class E), including associated landscaping, access, car parking and other engineering works	The proposed development is located within the LBH Air Quality Management area (AQMA) and within Hayes Focus Area (FA), bringing additional traffic emissions which will add to current poor air quality. The Application Site is located approximately 500 metres to the south-east of Hayes Town Centre, bounded to the north by the Great Western Railway Line and Grand Union Canal and to the south by Nestles Avenue	The development is not Air Quality Neutral and further action is required to reduce emissions. The level of mitigation required to the proposed development for traffic emissions is £17,542.	Therefore, a section 106 agreement with the LAP of £17,542 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. Two Air Quality conditions were required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.	
Planning Ref	8294/APP/2022/2576			NO
FORMER EMI SITE DAWLEY ROAD HAYES UB3 1HH Demolition of the single storey building and glazed link, in connection with the formation of a service yard and alterations to the warehouse building, including the insertion of loading bays and formation of parking for HGV's and cars	The proposed development is located within the LBH Air Quality Management area (AQMA) and within Hayes Focus Area (FA), bringing additional traffic emissions which will add to current poor air quality.	The development is not Air Quality Neutral and further action is required to reduce emissions. The level of mitigation required to the proposed development for traffic emissions is £181,393.	Therefore, a section 106 agreement with the LAP of £181,393 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. Two Air Quality conditions were required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.	
Planning Ref	77241/APP/2022/1407			NO
Unit 3 Clayfield Way West Drayton UB11 1FH Full planning application for	The proposed development is located within the LBH Air Quality Management Area	The development is not Air Quality Neutral and further action is required to reduce emissions.	Therefore, a section 106 agreement with the LAP of £101,806 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures that offset emissions and or reduce human exposure to pollution levels.	

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome	Neutral
<p>proposed attached tiered gantry structure to Unit 3 (LON 7) to provide plant and 4 no. generators</p>	<p>(AQMA) and in close proximity to the most sensitive Air Quality Focus Area (AQFA) within the borough - the Hayes Focus Area (approx. 750m) - which is an area of known poor air quality and high human exposure. Whereas the area surrounding the site is predominantly a range of large industrial buildings, to the east there are predominantly 2 storey semi-detached and terraced residential properties</p>	<p>The level of mitigation required to the proposed development for traffic emissions is £101,806</p>	<p>Four Air Quality conditions were required as below: A-Backup Generator Annual Emission Caps The emergency backup generators hereby approved shall be of the same emission levels or cleaner, as described in Table 5.2 Input Data for Calculation of Development Related Emissions of the Air Quality Report submitted to support the planning Application. The maximum total annual emissions (tonnes/year) for oxides of nitrogen (NOx) of 0.31 tonnes/year and of particulate matter of diameter 2.5 microns (PM2.5) of 0.005 tonnes/year as a result of the operation of the 4 backup generators are not to be exceeded as agreed with the Council and as set out in the Emission Reduction and Management Plan in year one (1) which shall be submitted to and approved by the Council.</p> <p>REASON As the application site is within an Air Quality Management Area, within a LBH Air Quality Focus Area and in close proximity to sensitive receptors, and to reduce the impact on air quality in accordance with Policy EM8 of the Hillingdon Local Plan: Part1 (2012), Policy DME1 14 of the Hillingdon Local Plan: Part 2 (2020), the London Borough of Hillingdon Air Quality Action Plan 2019-2023, Policy SI 1 of the London Plan (2021), and Paragraphs 174(e), 186 and 188 of the National Planning Policy Framework (2021).</p> <p>B-Emission Reduction and Management Plan Prior to operation of the development, or each development phase, an Emission Reduction and Management Plan (ERMP) for the development, shall be submitted to and approved in writing by the Local Planning Authority. This shall outline and commit to a programme for carrying out a viability study to review emissions performance and alternative options for the diesel backup units, with clear time scales, to be submitted no later than year 21. The viability study shall be based on the BAT (best available technology) principle giving weigh to sustainability principles and aligned with the objectives of the borough on improving air quality. This shall include but is not limited to the following: (i)A review of options for reducing NOx and PM2.5 emissions impacts for the National Grid power failures; (ii)A review of options for reducing NOx and PM2.5 emissions for the Testing regimes; (iii) A review of options for reducing NOx and PM2.5emissions by improved SCR systems /alternative retrofitting systems (iv)A review of options for reducing NOx and PM2.5 emissions by alternative fuels</p>	

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome	Neutral
			<p>(v) A feasibility study including benefit analysis for potential upgrades of the backup generators or other changes to infrastructure (e.g. SCR), type of fuel, generator type and operational regimes on site that could reduce emissions over time; alternative emergency backup solutions are to be also evaluated, e.g. fuel cells, etc.</p> <p>(vi) Use of the above information to propose appropriate changes in the generators type, selection of generators or other potential options for decreasing emissions over time no later than year 21; and</p> <p>(vii) Proposal of an appropriate timescale for improvements. Thereafter the development shall be implemented and operated in accordance with these details.</p> <p>REASON</p> <p>As the application site is within an Air Quality Management Area, within a LBH Air Quality Focus Area and in close proximity to sensitive receptors, and to reduce the impact on air quality in accordance with Policy EM8 of the Hillingdon Local Plan: Part1 (2012), Policy DME1 14 of the Hillingdon Local Plan: Part 2 (2020), the London Borough of Hillingdon Air Quality Action Plan 2019-2023, Policy SI 1 of the London Plan (2021), and Paragraphs 174(e), 186 and 188 of the National Planning Policy Framework (2021).</p> <p>C-Pollutant Emission Monitoring Plan</p> <p>Prior to operation of the development, a schedule for the testing of NOx and PM 2.5 emissions of the proposed standby generators for the development, shall be submitted to and approved in writing by the Local Planning Authority. This shall start from year 3 of the proposed development and run throughout the lifetime of the proposed generators in accordance with the agreed schedule. The monitoring of emissions must include all backup generators and allow a frequency that will enable the calculation of total annual emissions per engine for each year stipulated in the Plan.</p> <p>REASON</p> <p>As the application site is within an Air Quality Management Area, within a LBH Air Quality Focus Area and in close proximity to sensitive receptors, and to reduce the impact on air quality in accordance with Policy EM8 of the Hillingdon Local Plan: Part 2 (2020), the London Borough of Hillingdon Air Quality Action Plan 2019-2023, Policy SI 1 of the London Plan (2021), and Paragraphs 174(e), 186 and 188 of the National Planning Policy Framework (2021).</p> <p>D-Implementation of Selective Catalytic Reduction equipment (SCR)</p>	

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome	Neutral
			<p>Prior to operation of the development, evidence that the backup generators are to be fitted with selective catalytic reduction (SCR) technology achieving at least 95% reduction in relation to the values reported in the air quality report submitted to support the planning application is to be submitted to and approved in writing by the Local Planning Authority. Evidence is to include, but is not restricted to, a written warranty and supporting documentation by the equipment manufacturers that this NOx emission concentration is to be achieved, within 20 minutes of generator start-up.</p> <p>Thereafter the development shall be implemented and operated in accordance with these details.</p> <p>REASON As the application site is within an Air Quality Management Area, within a LBH Air Quality Focus Area and in close proximity to sensitive receptors, and to reduce the impact on air quality in accordance with Policy EM8 of the Hillingdon Local Plan: Part1 (2012), Policy DME1 14 of the Hillingdon Local Plan: Part 2 (2020), the London Borough of Hillingdon Air Quality Action Plan 2019-2023, Policy SI 1 of the London Plan (2021), and Paragraphs 174(e), 186 and 188 of the National Planning Policy Framework (2021).</p>	
Planning Ref	18399/APP/2022/411			NO
<p>UNIT D PROLOGIS PARK STOCKLEY ROAD WEST DRAYTON UB7 9FN Installation of plant and equipment to unit DC6 including external plant equipment, external louvres and associated security fencing and landscaping, to facilitate use of the building as a data centre</p>	<p>The proposed development is located in close proximity to one Air Quality Focus Area (AQFA), namely Hayes Focus Area (approx. 750 m) Which is An area of known poor air Quality and high human exposure. Whereas the area surrounding the site is predominantly a range of large industrial buildings, to the east there are predominantly small 2 storey semi-detached and terraced residential properties, and</p>	<p>The development is not Air Quality Neutral and further action is required to reduce emissions.</p> <p>The level of mitigation required to the proposed development for operational emissions is £226,258</p>	<p>Therefore, a section 106 agreement with the LAP of £226,258 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures that offset emissions and or reduce human exposure to pollution levels.</p> <p>Air Quality conditions were required as below: A-Backup Generator Annual Emission Caps The emergency backup generators hereby approved shall be of the same emission levels as per described in the Air Quality Report submitted to support the planning application with emission rates per backup generator not exceeding 0.066933 Tonnes of NOx/year and 0.001103 PM2.5 tonnes per year. The maximum total annual emissions (tonnes/year) for oxides of nitrogen (NOx) and particulate matter of diameter 2.5 microns (PM2.5) as a result of the operation of the Development are not to be exceeded (total per year for 16 gen sets of 1.070928 tonnes/year for oxides of nitrogen (NOx) and 0.017648 for particulate matter of diameter 2.5 microns (PM2.5))as agreed with the Council and as set out in the Emission Reduction Plan in year one (1) which shall be submitted to and approved by the Council.</p> <p>REASON</p>	

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome	Neutral
	<p>to the South of the site there are a multitude of Semi-detached and terraced properties, as well as 'St Andrew's Park', the site of the former RAF Uxbridge</p>		<p>As the application site is within an Air Quality Management Area, within a LBH Air Quality Focus Area and in close proximity to sensitive receptors, and to reduce the impact on air quality in accordance with Policy EM8 of the Hillingdon Local Plan: Part1 (2012), Policy DME1 14 of the Hillingdon Local Plan: Part 2 (2020), the London Borough of Hillingdon Air Quality Action Plan 2019-2023, Policy SI 1 of the London Plan (2021), and Paragraphs 174(e), 186 and 188 of the National Planning Policy Framework (2021).</p> <p>B-Operating Regime for the Emergency Generators Prior to operation of the development, a formal declaration by the operator, supported by a manufacturer report describing the testing regime and annual hours required for the development, or each development phase, is to be submitted to and approved in writing by the Local Planning Authority. The number of testing hours is to not exceed 6 hours per year. The operating times should not be during school hours and the testing of the backup generators should be phased so to avoid simultaneous testing of more than 2 units at a time. Thereafter the development shall be implemented and operated in accordance with these details. REASON As the application site is within an Air Quality Management Area, within a LBH Air Quality Focus Area and in close proximity to sensitive receptors, and to reduce the impact on air quality in accordance with Policy EM8 of the Hillingdon Local Plan: Part1 (2012), Policy DME1 14 of the Hillingdon Local Plan: Part 2 (2020), the London Borough of Hillingdon Air Quality Action Plan 2019-2023, Policy SI 1 of the London Plan (2021), and Paragraphs 174(e), 186 and 188 of the National Planning Policy Framework (2021).</p> <p>C-Emission Reduction and Management Plan Prior to operation of the development, or each development phase, an Emission Reduction and Management Plan (ERMP) for the development, shall be submitted to and approved in writing by the Local Planning Authority. This shall outline and commit to a programme for replacing the diesel backup units with cleaner units, with clear time scales. This shall include but is not limited to the following: (i) A review of options for reducing NOx and PM2.5 emissions impacts for the National Grid power failures; (ii) A feasibility study including benefit analysis for potential upgrades of the backup generators or other changes to infrastructure (e.g. SCR), type of fuel, generator type and operational regimes on site that could reduce emissions over time;</p>	

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome	Neutral
			<p>(iii) Use of the above information to propose appropriate changes in the generators type, selection of generators or other potential options for decreasing emissions over time; and</p> <p>(iv) Proposal of an appropriate timescale for improvements.</p> <p>Thereafter the development shall be implemented and operated in accordance with these details.</p> <p>REASON: As the application site is within an Air Quality Management Area, within a LBH Air Quality Focus Area and in close proximity to sensitive receptors, and to reduce the impact on air quality in accordance with Policy EM8 of the Hillingdon Local Plan: Part1 (2012), Policy DME1 14 of the Hillingdon Local Plan: Part 2 (2020), the London Borough of Hillingdon Air Quality Action Plan 2019-2023, Policy SI 1 of the London Plan (2021), and Paragraphs 174(e), 186 and 188 of the National Planning Policy Framework (2021).</p> <p>D-Pollutant Emission Monitoring Plan</p> <p>Prior to operation of the development, a schedule for the testing of NOx and PM2.5 emissions of the proposed standby generators for the development, shall be submitted to and approved in writing by the Local Planning Authority. This shall start from year 3 of the proposed development and run through out the lifetime of the proposed generators in accordance to the agreed schedule.</p> <p>The monitoring of emissions must include all backup generators and allow a frequency that will enable the calculation of total annual emissions per engine for each year stipulated in the Plan.</p> <p>REASON</p> <p>As the application site is within an Air Quality Management Area, within a LBH Air Quality Focus Area and in close proximity to sensitive receptors, and to reduce the impact on air quality in accordance with Policy EM8 of the Hillingdon Local Plan: Part1 (2012), Policy DME1 14 of the Hillingdon Local Plan: Part 2 (2020), the London Borough of Hillingdon Air Quality Action Plan 2019-2023, Policy SI 1 of the London Plan (2021), and Paragraphs 174(e), 186 and 188 of the National Planning Policy Framework (2021).</p> <p>E-Implementations of Selective Catalytic Reduction equipment (SCR)</p> <p>Prior to operation of the development, evidence that the backup generators are to be fitted with selective catalytic reduction (SCR) technology, is to be submitted to and approved in writing by the Local Planning Authority. Evidence is to include, but is not restricted to, a written warranty and supporting documentation by the equipment manufacturers that the NOx emission concentration to be</p>	

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome	Neutral
			<p>achieved equals the information on the Air Quality report submitted to support the planning application, within 20 minutes of generator start-up. Thereafter the development shall be implemented and operated in accordance with these details.</p> <p>REASON</p> <p>As the application site is within an Air Quality Management Area, within a LBH Air Quality Focus Area and in close proximity to sensitive receptors, and to reduce the impact on air quality in accordance with Policy EM8 of the Hillingdon Local Plan: Part1 (2012), Policy DME1 14 of the Hillingdon Local Plan: Part 2 (2020), the London Borough of Hillingdon Air Quality Action Plan 2019-2023, Policy SI 1 of the London Plan (2021), and Paragraphs 174(e), 186 and 188 of the National Planning Policy Framework (2021).</p> <p><i>Air Quality S106 Head of Term</i> <i>Air Quality Contribution: A financial contribution shall be paid to the Council to address air quality impacts arising from the development; The damage cost value due is to be calculated using Defra's damage cost calculator toolkit and follow the required LBH standard practice, to be specified in agreement with the Air Quality Office</i></p>	
Planning Ref	36678/APP/2021/3370			YES
<p>3 VIVEASH CLOSE HAYES UB3 4RY Redevelopment of the site to erect a part 10 storey and part 11 storey residential led development comprising 128 flats and a 122 sqm commercial space / residents lounge (Class E) with associated access (including Public Access Improvements) and landscaping works following demolition of existing light industrial building</p>	<p>The proposed development is located within the LBH Air Quality Management area (AQMA) and within HayesFocus Area (FA), bringing additional traffic emissions which will add to current poor air quality.</p>	<p>The development is Air Quality Neutral.</p> <p>However, according to LBH, proposed development within Focus Areas needs to be Air Quality positive and further action is required to reduce total emissions produced by its operation. Therefore, the total emissions associated with these activities needs to be mitigated</p> <p>The level of mitigation required to the proposed development for traffic emissions is £7,637.</p>	<p>Therefore, a section 106 agreement with the LAP of £7,637 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. Two Air Quality conditions were required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.</p>	
Planning Ref	1331/APP/2022/2553			NO

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome	Neutral
<p>Canteen Building, Former Nestle Factory site NESTLES AVENUE HAYES UB3 4RF</p> <p>Demolition and redevelopment of the former canteen building to provide a new healthcare facility (Class E(e)), nursery (Class E(f)) and residential building (Block H) (Class C3) with a commercial unit at ground floor (Class E), including associated landscaping, access, car parking and other engineering works</p>	<p>The proposed development is located within the LBH Air Quality Management area (AQMA) and within Hayes Focus Area (FA), bringing additional traffic emissions which will add to current poor air quality. The Application Site is located at the Former Nestle Factory, Nestles Avenue, Hayes, UB3 4RF, in the southern part of London Borough of Hillingdon (LBH), West London. The area occupied by the Canteen building and the proposed Block H, is located towards the south of the site.</p>	<p>The development is not Air Quality Neutral and further action is required to reduce emissions.</p> <p>In addition, the proposal needs to be Air Quality positive and further action is required to reduce the total emissions produced by its operation, associated with 112,417 trips per annum</p> <p>The level of mitigation required to the proposed development for traffic emissions is £22,394.</p>	<p>Therefore, a section 106 agreement with the LAP of £22,394 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. Two Air Quality conditions were required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.</p>	
Planning Ref	12795/APP/2021/1584	NO		
<p>MURRAY ENGINEERING (HAYES) LTD SILVERDALE ROAD HAYES UB3 3BN</p> <p>Demolition of a 2-storey building (Use Class E (g)/ former B1 (C)) and the erection of a 6 storey mixed-used building and a basement comprising 684 sqm of Class E space at ground and basement levels and 22 residential units above including car parking, cycle parking, refuse with associated works</p>	<p>The proposed development is located within the LBH Air Quality Management area (AQMA) and within Hayes Focus Area (FA), bringing additional traffic emissions which will add to current poor air quality.</p>	<p>The development is not Air Quality Neutral and further action is required to reduce emissions.</p> <p>In addition, the proposal needs to be Air Quality positive and further action is required to reduce the total emissions produced by its operation.</p> <p>The level of mitigation required to the proposed development for traffic emissions is £13,578.</p>	<p>Therefore, a section 106 agreement with the LAP of £13,578 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. Two Air Quality conditions were required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.</p>	
Planning Ref	21432/APP/2021/4649	YES		

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome	Neutral
<p>THE FORMER VICTORIA PUB AND REAR GARAGE COURT AREAS ACCESSED FROM SANDOW CRESCENT 32 NORTH HYDE ROAD HAYES UB3 4NE Demolition of existing buildings and erection of 2 blocks of flats comprising 38 units (7 x studio, 6 x 1-bed, 14 x 2-bed and 11 x 3-bed) with 2 disabled parking spaces and vehicular access off North Hyde Road and rear garage court areas accessed from Sandow Crescent.</p>	<p>The proposed development is located within the LBH Air Quality Management area (AQMA) and within Hayes Focus Area (FA), bringing additional traffic emissions which will add to current poor air quality. The Application Site is located approximately 500 metres to the south-east of Hayes Town Centre, bounded to the north by the Great Western Railway Line and Grand Union Canal and to the south by Nestles Avenue</p>	<p>The development is not Air Quality Positive and further action is required to reduce total emissions. The level of mitigation required to the proposed development for traffic emissions is £33,509</p>	<p>Therefore, a section 106 agreement with the LAP of £33,509 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. Two Air Quality conditions were required to manage construction emissions as required by the Mayor of London.</p>	
<p>Planning Ref</p>	<p>77241/APP/2022/1407</p>			<p>NO</p>
<p>Unit 3 Clayfield Way West Drayton UB11 1FH Full planning application for proposed attached tiered gantry structure to Unit 3 (LON 7) to provide plant and 4 no. generators</p>	<p>The proposed development is located within the LBH Air Quality Management area (AQMA) and within Hayes Focus Area (FA), bringing additional traffic emissions which will add to current poor air quality. The Application Site is located approximately 500 metres to the south-east of Hayes Town Centre, bounded to the north by the Great Western Railway Line and Grand Union Canal and to the south by Nestles Avenue</p>	<p>The development is not Air Quality Neutral and not Air Quality Positive and further action is required to reduce total emissions. The level of mitigation required to the proposed development for operational emissions is £118,377. A financial contribution shall be paid to the Council to address air quality impacts arising from the development, amounting to a sum of £118,377 (at the central present value (damage cost 1) and rising up to at least £411,691 (damage cost 2) or above depending on the air pollutant emissions monitoring</p>	<p>Therefore, a section 106 agreement with the LAP of £118,377 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures to offset emissions and or reduce human exposure to pollution levels. Air Quality conditions were required to manage construction emissions as required by the Mayor of London and manage operational emissions as agreed with LBH. A - Backup Generator Annual Emission Caps The emergency backup generators hereby approved shall be of the same emission levels or cleaner, as described in Table 2 Generator Process Conditions of the Air Quality Report addendum submitted to support the planning application (Appendix B) and reproduced below (Table 1). The maximum total annual emissions (tonnes/year) for oxides of nitrogen (NOx) of 0.461 tonnes/year and of particulate matter of diameter 2.5 microns (PM2.5) of 0.016 tonnes/year as a result of the operation of the 4 backup generators are not to be exceeded as agreed with the Council and as set out in the Emission Reduction and Management Plan in year one (1) which shall be submitted to and approved by the Council. REASON</p>	

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome	Neutral
		<p>results in year 2 and subsequent years, in accordance with an emission monitoring schedule as defined in Condition Pollutant Emission Monitoring Plan.</p> <p>At each monitoring year scheduled in the Pollutant Emission Monitoring Plan (Condition C), the collected emission monitoring data shall be submitted to the LA to verify the generators' emission performance and compare real world annual emissions with the annual emissions on which the damage cost was calculated. Any shortfall against the assumed emission performance assumed (damage cost (1)) shall be calculated and submitted to the LPA no later than end of first month of year of monitoring +1. Should the total annual emissions for NOx and or PM2.5 be higher than the accounted for in the damage cost calculations, the LA will be entitled to require further payment to action the London Borough of Hillingdon's Local Air Quality Action Plan to further protect residents from exposure to local pollution levels</p>	<p>As the application site is within an Air Quality Management Area, within a LBH Air Quality Focus Area and in close proximity to sensitive receptors, and to reduce the impact on air quality in accordance with Policy EM8 of the Hillingdon Local Plan: Part 1 (2012), Policy DMEI 14 of the Hillingdon Local Plan: Part 2 (2020), the London Borough of Hillingdon Air Quality Action Plan 2019-2023, Policy SI 1 of the London Plan (2021), and Paragraphs 174(e), 186 and 188 of the National Planning Policy Framework (2021).</p> <p>B - Emission Reduction and Management Plan Prior to operation of the development, or each development phase, an Emission Reduction and Management Plan (ERMP) for the development, shall be submitted to and approved in writing by the Local Planning Authority. This shall outline and commit to a programme for carrying out a viability study to review emissions performance and alternative options for the diesel backup units, with clear time scales, to be submitted no later than year 21. The viability study shall be based on the BAT (best available technology) principle giving weigh to sustainability principles and aligned with the objectives of the Borough on improving air quality. This shall include but is not limited to the following:</p> <ul style="list-style-type: none"> (i) A review of options for reducing NOx and PM2.5 emissions impacts for the National Grid power failures; (ii) A review of options for reducing NOx and PM2.5 emissions for the testing and maintenance regimes; (iii) A review of options for reducing NOx and PM2.5 emissions by improved SCR systems /alternative retrofitting systems (iv) A review of options for reducing NOx and PM2.5 emissions by alternative fuels/technologies (v) A feasibility study including benefit analysis for potential upgrades of the backup generators or other changes to infrastructure (e.g. SCR), type of fuel, generator type and operational regimes on site that could reduce emissions over time; alternative emergency backup solutions are to be also evaluated, e.g. fuel cells , etc. (vi) Use of the above information to propose appropriate changes in the generators type, selection of generators or other potential options for decreasing emissions over time no later than year 21; and (vii) Proposal of an appropriate timescale for improvements. <p>Thereafter the development shall be implemented and operated in accordance with these details.</p> <p>REASON</p>	

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			<p>As the application site is within an Air Quality Management Area, within a LBH Air Quality Focus Area and in close proximity to sensitive receptors, and to reduce the impact on air quality in accordance with Policy EM8 of the Hillingdon Local Plan: Part 1 (2012), Policy DMEI 14 of the Hillingdon Local Plan: Part 2 (2020), the London Borough of Hillingdon Air Quality Action Plan 2019-2023, Policy SI 1 of the London Plan (2021), and Paragraphs 174(e), 186 and 188 of the National Planning Policy Framework (2021).</p> <p>C - Pollutant Emission Monitoring Plan Prior to operation of the development, a schedule for the testing of NOx and PM2.5 emissions of the proposed standby generators for the development, shall be submitted to and approved in writing by the Local Planning Authority. This shall start from year 3 of the proposed development and run throughout the lifetime of the proposed generators in accordance with the agreed schedule. The monitoring of emissions must include all backup generators and allow a frequency that will enable the calculation of total annual emissions per engine for each year stipulated in the Plan.</p> <p>REASON As the application site is within an Air Quality Management Area, within a LBH Air Quality Focus Area and in close proximity to sensitive receptors, and to reduce the impact on air quality in accordance with Policy EM8 of the Hillingdon Local Plan: Part 1 (2012), Policy DMEI 14 of the Hillingdon Local Plan: Part 2 (2020), the London Borough of Hillingdon Air Quality Action Plan 2019-2023, Policy SI 1 of the London Plan (2021), and Paragraphs 174(e), 186 and 188 of the National Planning Policy Framework (2021).</p> <p>D – Implementations of Selective Catalytic Reduction equipment (SCR) Prior to operation of the development, evidence that the backup generators are to be fitted with selective catalytic reduction (SCR) technology achieving at least 86% reduction in relation to the values reported in the air quality report submitted to support the planning application is to be submitted to and approved in writing by the Local Planning Authority. Evidence is to include, but is not restricted to, a written warranty and supporting documentation by the equipment manufacturers that this NOx emission concentration is to be achieved, within 20 minutes of generator start-up.</p> <p>Thereafter the development shall be implemented and operated in accordance with these details.</p> <p>REASON</p>	

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			As the application site is within an Air Quality Management Area, within a LBH Air Quality Focus Area and in close proximity to sensitive receptors, and to reduce the impact on air quality in accordance with Policy EM8 of the Hillingdon Local Plan: Part 1 (2012), Policy DMEI 14 of the Hillingdon Local Plan: Part 2 (2020), the London Borough of Hillingdon Air Quality Action Plan 2019-2023, Policy SI 1 of the London Plan (2021), and Paragraphs 174(e), 186 and 188 of the National Planning Policy Framework (2021).	
Planning Ref	49467/APP/2022/2801			YES
HURGARD HOUSE, WESTMOUNT CENTRE UXBRIDGE ROAD HAYES UB4 0HD Partial demolition and extension to existing building to provide additional self-storage floorspace (Use Class B8) with associated new car and cycle parking, refuse storage, landscaping and other associated works ancillary to the development.	The proposed development is located within the Hayes Focus Area, bringing additional traffic emissions which will add to current likely exceedances and contribute to poor local air quality. As per the London Plan, developments need to be neutral as minimum and positive in Focus Areas, contributing to the reduction of emissions in these sensitive areas.	According to LBH Local Action Plan, proposed development within Focus Areas (or with impacts on FAs) needs to be Air Quality positive and further action is required to reduce total emissions produced by its operation. The development is not Air Quality Positive and further action is required to reduce total emissions. The level of mitigation required to the proposed development for traffic emissions is £55,035	Therefore, a section 106 agreement with the LAP of £55,035 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. Two Air Quality conditions were required to manage construction emissions as required by the Mayor of London.	
Planning Ref	18399/APP/2022/411			NO
UNIT D PROLOGIS PARK STOCKLEY ROAD WEST DRAYTON UB7 9FN Installation of plant and equipment to unit DC6 including external plant equipment, external louvres and associated security fencing and landscaping, to facilitate use of the building as a data centre.	The proposed development is located in close proximity to one Air Quality Focus Area (AQFA), namely Hayes Focus Area (approx. 750m) which is an area of known poor air quality and high human exposure. Whereas the area surrounding the site is predominantly a range of large industrial buildings, to the east there are	The proposed development is not air quality neutral and not air quality positive. Therefore, additional mitigation is required. To ascertain the level of mitigation necessary, total emissions have been calculated for NOx and PM2.5 in association with both the emergency backup generators proposed and traffic associated with the operation of the proposed development. The total level of emissions	Therefore, a section 106 agreement with the LAP of £473,510 was required to be paid for Hillingdon to deliver its air quality local action plan and or offset emissions and or reduce human exposure to pollution levels. Air Quality conditions were required to manage operational emissions as agreed with LBH and develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London. Condition 12 – Maintenance and Testing Regime Prior to the first use of the site as a data centre, a formal declaration by the site owner/occupier, supported by the Environment Agency permit and manufacturer report describing the testing and maintenance regime and annual hours of use of the backup generators shall be submitted to, and approved in writing by the Local Planning Authority. The number of testing and maintenance hours is not to	

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	<p>predominantly small 2 storey semi-detached and terraced residential properties, and to the South of the site there are a multitude of Semi-detached and terraced properties, as well as 'St Andrew's Park', the site of the former RAF Uxbridge.</p>	<p>into the atmosphere were monetised using Defra's damage cost tool as per LBH standard practice. A section 106 agreement with the LAP is to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures that reduce local emissions and or reduce human exposure to pollution levels. The level of mitigation required to the proposed development for traffic emissions is £473,510.</p>	<p>exceed 27 hours per year, shall not be during school hours and the testing of the backup generators shall be phased so to avoid simultaneous testing of more than two units at a time.</p> <p>Thereafter the development shall be implemented and operated in accordance with these details.</p> <p>REASON To reduce the impact on air quality within an Air Quality Management Area, in close proximity to sensitive receptors, in accordance with Policy EM8 of the Hillingdon Local Plan: Part 1 (2012), Policy DMEI 14 of the Hillingdon Local Plan: Part 2 (2020), the London Borough of Hillingdon Air Quality Action Plan 2019-2023, and Policy SI 1 of the London Plan (2021).</p> <p>Condition 13 - Emission Reduction and Management Plan Prior to the first use of the site as a data centre, an Emission Reduction and Management Plan shall be submitted to and approved in writing by the Local Planning Authority. This shall outline and commit to a programme for replacing the diesel backup units with cleaner/less polluting units, within clear timescales. This shall include (but not necessarily be limited to) the following:</p> <ul style="list-style-type: none"> (i) A review of options for reducing NOx and PM2.5 emissions impacts for the National Grid power failures. (ii) A feasibility study including benefit analysis for potential upgrades of the backup generators or other changes to infrastructure (e.g. SCR), type of fuel, generator type and operational regimes on site that could reduce emissions over time. The cost benefit analysis shall include all impacts (monetised and non-monetised) on environment (built and natural) and human health. (iii) Use of the above information to propose appropriate changes in the generators type, selection of generators or other potential options for decreasing emissions over time; and (iv) Proposal of an appropriate timescale for improvements. Thereafter the development shall be implemented and operated in accordance with these details. <p>REASON To reduce the impact on air quality within an Air Quality Management Area, in close proximity to sensitive receptors, in accordance with Policy EM8 of the Hillingdon Local Plan: Part 1 (2012), Policy DMEI 14 of the Hillingdon Local Plan: Part 2 (2020), the London Borough of Hillingdon Air Quality Action Plan 2019-2023, and Policy SI 1 of the London Plan (2021).</p>	

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			<p>Condition 14 - Pollutant Emission Monitoring Plan Prior to the first use of the site as a data centre, a schedule for the monitoring and testing of NOx and PM2.5 emissions of the proposed standby generators for the development, shall be submitted to, and approved in writing by, the Local Planning Authority.</p> <p>The monitoring of emissions must include all backup generators and allow a frequency that will enable the calculation of total annual emissions per engine for each year stipulated in the Plan. This shall start from year 3 of the proposed development and run throughout the lifetime of the proposed generators in accordance with the agreed schedule.</p> <p>REASON To reduce the impact on air quality within an Air Quality Management Area, in close proximity to sensitive receptors, in accordance with Policy EM8 of the Hillingdon Local Plan: Part 1 (2012), Policy DMEI 14 of the Hillingdon Local Plan: Part 2 (2020), the London Borough of Hillingdon Air Quality Action Plan 2019-2023, and Policy SI 1 of the London Plan (2021).</p> <p>Condition 15 - Implementation of Selective Catalytic Reduction equipment (SCR) Prior to operation of the development, evidence that the backup generators are to be fitted with selective catalytic reduction (SCR) technology achieving at least 86% reduction in relation to the values reported in the air quality report submitted to support the planning application (V10 March 2022) supplemented by air quality addendum (Virtus DC6_AQA Addendum 2_Rev0_20221129, November 2022). Evidence is to include, but is not restricted to, a written warranty and supporting documentation by the equipment manufacturers that this NOx emission concentration is to be achieved, within 20 minutes of generator start-up.</p> <p>Thereafter the development shall be implemented and operated in accordance with these details.</p> <p>REASON To reduce the impact on air quality within an Air Quality Management Area, in close proximity to sensitive receptors, in accordance with Policy EM8 of the Hillingdon Local Plan: Part 1 (2012), Policy DMEI 14 of the Hillingdon Local Plan: Part 2 (2020), the London Borough of Hillingdon Air Quality Action Plan 2019-2023, and Policy SI 1 of the London Plan (2021).</p>	

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			<p>Condition 16 – Pollutant Emission Caps One year after the first use of the site as a data centre, and in accordance with the Emission Reduction and Management Plan (Condition 13), details of the emergency backup generators shall be submitted to, and approved in writing by, the Local Planning Authority. The details shall demonstrate that the backup generators are of the same emission levels as described in the Air Quality Report Addendum (Addendum 2_Rev0_20221129, November 2022) with emission rates per backup generator not exceeding 0.115191696 Tonnes of NOx/year and 0.0038764 PM2.5 tonnes per year. The maximum total annual emissions (tonnes/year) for oxides of nitrogen (NOx) and particulate matter of diameter 2.5 microns (PM2.5) as a result of the operation of the Development are not to be exceeded (total per year for 16 gen sets of 1.843 tonnes/year for oxides of nitrogen (NOx) and 0.062 for particulate matter of diameter 2.5 microns (PM2.5)) as agreed with the Council and as set out in the Emission Reduction Plan in year one (1) which shall be submitted to and approved by the Council.</p> <p>REASON To reduce the impact on air quality within an Air Quality Management Area, in close proximity to sensitive receptors, in accordance with Policy EM8 of the Hillingdon Local Plan: Part 1 (2012), Policy DMEI 14 of the Hillingdon Local Plan: Part 2 (2020), the London Borough of Hillingdon Air Quality Action Plan 2019-2023, and Policy SI 1 of the London Plan (2021).</p> <p>Condition 17 Testing of the standby generators shall occur no more than once per calendar month, between 08:00 and 18:00 hours Monday to Friday, and over a total period each month of no more than two hours.</p> <p>REASON To safeguard the amenity of the occupants of the neighbouring residential and commercial premises in accordance with Policy EM8 of the Hillingdon Local Plan: Part One (2012) and Policy D14 of the London Plan (2021).</p> <p>Heads of Terms i. A minimum Air Quality damage cost of £473,510, potentially rising up to £1,646,763 or more , depending on the air pollutant emissions monitoring results in year two and subsequent years, in accordance with an emission monitoring schedule as defined in Condition 14 (Pollutant Emission Monitoring Plan);</p>	

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HILLINGDON HOSPITAL FOCUS AREA				
Planning Ref	4058/APP/2022/1788			YES
<p>HILLINGDON HOSPITAL PIELD HEATH ROAD HILLINGDON UB8 3NN Hybrid planning application for: FULL application seeking planning permission for demolition of existing buildings (excluding the Tudor Centre and the Old Creche) and redevelopment of the site to provide the new Hillingdon Hospital (Use Class C2), multi-storey car park and mobility hub, vehicle access, highways works, associated plant, generators, substation, new internal roads, landscaping and public open space, utilities, servicing area, surface car park/ expansion space, and other works incidental to the proposed development; and Outline planning application (all matters reserved, except for access) for the demolition of buildings and structures on the remaining site (excluding the Grade II Listed Furze) for a mixed-use development comprising residential (Class C3) and supporting Commercial, Business and Service uses (Class E), new pedestrian and vehicular access; public realm, amenity</p>	<p>The proposed development is located within the LBH Air Quality Management area (AQMA), and within Hillingdon Hospital Focus Area, originating air pollutant emissions which will add to current poor air quality in the area. Proposals are required to improve air quality within Focus Area</p>	<p>The level of mitigation required to the outline phase of the proposed development for traffic emissions is £121,554.</p>	<p>Therefore, a section 106 agreement with the LAP of £121,554 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. Two Air Quality conditions were required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.</p>	

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space, car and cycling parking. Details: Comprising a maximum height of 8 storeys, 79,594sqm of Hospital Building (GIA) plus 23,034sqm of Multi-Storey Car Park, 327 residential units and 800sqm of commercial floorspace				
Planning Ref	76760/APP/2022/1889			YES
14-18 Pield Heath Road & 2 Pield Heath Avenue PIELD HEATH AVENUE UXBRIDGE UB8 3NF Demolition of three dwellings and one Bed and Breakfast, and the subsequent erection of a care home. Detailed Description: Demolition of three dwellings (Nos. 14 and 16 Pield Heath Road and 2 Pield Heath Avenue) and one Bed and Breakfast (No. 18 Pield Heath Road), and the subsequent erection of a part two, part three storey (plus basement) 60-bed care home, with 14 car parking spaces, landscaping and external amenity space	The proposed development is located within the LBH Air Quality Management area (AQMA), and within the catchment area of two LBH Focus Areas (FAs), Namely Hillingdon Hospital FA (distance 345m) and the Uxbridge Road Focus Area (distance 452m), originating air pollutant emissions which will add to current poor air quality in the area. Proposals are required to improve air quality within Focus Area	The proposed development is Air Quality Neutral However, according to LBH, proposed development within Focus Areas (or with impacts on FAs) needs to be Air Quality positive and further action is required to reduce total emissions produced by its operation. Therefore, the total emissions associated with these activities needs to be mitigated. The level of mitigation required to the proposed development for traffic emissions is £71,173	Therefore, a section 106 agreement with the LAP of £71,173 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. Two Air Quality conditions were required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.	
Planning Ref	3348/APP/2023/138			YES
MEADOW HIGH SCHOOL ROYAL LANE HILLINGDON Erection of a two-storey academic building (Use Class F1), demolition of existing temporary modular structures and partial demolition of existing main teaching building to facilitate connections to the main school, redevelopment of	The proposed development is located within the LBH Air Quality Management area (AQMA), and in the catchment area of the LBH Focus Area Hillingdon Hospital Focus Area (approximately 320m away). Proposals are	Using the information provided in the TA, the proposed development is air quality neutral and air quality positive, with only 12% of trips being made by car. Therefore, no additional mitigation needs to be provided and there are no air quality concerns in regard to the proposed development.	Two Air Quality conditions were required to manage construction emissions as required by the Mayor of London.	

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome	Neutral
external hard and soft landscaped areas and associated works	required to improve air quality within Focus Area			
Planning Ref	45818/APP/2023/598			NO
BEACHES YARD HORTON ROAD YIEWSLEY Redevelopment of the site to provide a flexible warehouse facility (Use Class B2/B8) and ancillary office space, with associated HGV loading and servicing bay, car and cycle parking, access arrangements, landscaping and infrastructure.	The proposed development is located within the LBH Air Quality Management Area and 818m from the Hillingdon Hospital Focus Area, 881m from the West Drayton Focus Area and 1,810m from the Hayes Focus Area bringing additional traffic emissions which will add to current likely exceedances	The proposed development is not Air Quality Neutral, Further, according to LBH Local Action Plan, proposed development within Focus Areas (or with impacts on FAs) needs to be Air Quality positive and further action is required to reduce total emissions produced by its operation. Therefore, the total emissions associated with these activities needs to be mitigated. The level of mitigation required to the proposed development for traffic emissions is £499,604	Therefore, a section 106 agreement with the LAP of £499,604 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. Two Air Quality conditions were required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.	
M4 CORRIDOR FOCUS AREA				
No MAJOR applications DURING 2022/2023 reporting year				
NORTHWOOD EAST FOCUS AREA				
Planning Ref	46639/APP/2022/60			NO
NORTHWOOD POLICE STATION, 2 MURRAY ROAD NORTHWOOD Change of use from former Police Station (sui generis) to mixed use place	The proposed development is located outside the LBH Air Quality Management area (AQMA), and in the catchment of two LBH	The development is not Air Quality Neutral and not Air Quality positive and further action is required to reduce total emissions.	Therefore, a section 106 agreement with the LAP of £58,424 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. One Air Quality condition was required to develop and implement a Low Emission Strategy.	

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome	Neutral
of worship (Class F.1) and community centre (Class F.2), along with minor alterations to car park layout.	Focus Areas (namely Northwood West Focus Area and Northwood East Focus Area).	The level of mitigation required to the proposed development for traffic emissions is £58,424.		
NORTHWOOD WEST FOCUS AREA				
Planning Ref	10112/APP/2022/1474			NO
LAND TO THE EAST OF LONDON SCHOOL OF THEOLOGY GREEN LANE NORTHWOOD HA6 2UW Erection of a residential building comprising 13 flats with associated parking, cycle storage, motorcycle parking, disabled parking and bin storage following demolition of existing residential block and pair of semi-detached houses,	The proposed development is located within the LBH Air Quality Management area (AQMA) and within the LBH Northwood West Focus Area (FA) catchment area bringing additional traffic emissions which will add to current poor air quality	The development is not Air Quality Neutral and further action is required to reduce emissions. The level of mitigation required to the proposed development for traffic emissions is £31,669.	Therefore, a section 106 agreement with the LAP of £31,669 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. One Air Quality condition was required to manage construction emissions as required by the Mayor of London.	
Planning Ref	924/APP/2022/3603			YES
DENVILLE HALL DUCKS HILL ROAD NORTHWOOD Demolition of no. 48 and no. 60 Ducks Hill Road, garage and wooden storage unit and the erection of three new buildings comprising of 12 assisted-living units (Class C2), proposed ancillary communal space, including cafe and restaurant, external connecting link building, landscaping and external works.	The proposed development is located outside the LBH Air Quality Management Area but within the LBH Northwood West Focus Area bringing additional traffic emissions which will add to current poor air quality. As per the London Plan, developments need to be neutral as minimum and positive in Focus Areas, contributing to the reduction of emissions in these sensitive areas.	The proposed development is air quality neutral for C2 use and not air quality positive. According to LBH Local Action Plan, proposed development within Focus Areas (or with impacts on FAs) needs to be Air Quality positive and further action is required to reduce total emissions produced by its operation. Therefore, the total emissions associated with these activities needs to be mitigated. The level of mitigation required to the proposed development for traffic emissions is £9,784	Therefore, a section 106 agreement with the LAP of £9,784 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. One Air Quality condition was required to manage construction emissions as required by the Mayor of London.	
OSSIE GARVIN FOCUS AREA				

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome	Neutral
Planning Ref	1911/APP/2022/1853			NO
HAYES BRIDGE RETAIL PARK UXBRIDGE ROAD HAYES Demolition of existing buildings and erection of a single commercial building for employment purposes Class E(g)iii, B2 and B8, along with ancillary offices, gatehouse, associated infrastructure including; service yard, car parking, drainage and hard and soft landscaping	The proposed development is located within the LBH Air Quality Management area (AQMA), and Within the Ossie Garvin LBH Focus Area (FA) bringing additional traffic emissions which will add to current poor air quality	The development is not Air Quality Neutral and further action is required to reduce emissions. The level of mitigation required to the proposed development for traffic emissions is £1,151,574	Therefore, a section 106 agreement with the LAP of £1,151,574 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. Two Air Quality conditions were required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.	
Planning Ref	4482/APP/2022/213			NO
152-154 UXBRIDGE ROAD HAYES UB4 0JH Erection of three storey mixed use retail and 9 residential apartments with ancillary parking, amendments to dropped kerbs, refuse and bicycle storage, following the demolition of existing buildings.	The proposed development is located within the LBH Air Quality Management area (AQMA), and Within the Ossie Garvin LBH Focus Area (FA) bringing additional traffic emissions which will add to current poor air quality	The development is not Air Quality Neutral and further action is required to reduce emissions. The level of mitigation required to the proposed development for traffic emissions is £546,34	Therefore, a section 106 agreement with the LAP of £546,34 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. Two Air Quality conditions were required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.	
RUISLIP TOWN CENTRE FOCUS AREA				
No MAJOR applications DURING 2022/2023 reporting year				
SIPSON FOCUS AREA				
No MAJOR applications DURING 2022/2023 reporting year				

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome	Neutral
UXBRIDGE FOCUS AREA				
No MAJOR applications DURING 2022/2023 reporting year				
UXBRIDGE ROAD FOCUS AREA				
Planning Ref	76328/APP/2021/1362			YES
1032-1052 UXBRIDGE ROAD HAYES UB4 0RJ Retention of existing ground floor retail units and the erection of 2 additional storeys to provide 9 residential units (6 x 1-bed and 8 x 2-bed) (Use Class C3), with private outdoor amenity space, car and cycle parking and associated works.	The proposed development is located within the LBH Air Quality Management area (AQMA), and within the Uxbridge Road Focus Area (FA) bringing additional traffic emissions which will add to current poor air quality	According to LBH Local Action Plan, proposed development within Focus Areas (or with impacts on FAs) needs to be Air Quality positive and further action is required to reduce total emissions produced by its operation. Therefore, the total emissions associated with these activities needs to be mitigated. The level of mitigation required to the proposed development for traffic emissions is £4,549	Therefore, a section 106 agreement with the LAP of £4,549 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. Two Air Quality conditions were required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.	
Planning Ref	74992/APP/2022/2660			YES
EDEN HOUSE 814D UXBRIDGE ROAD HAYES UB4 0RS Erection of one additional storey above the existing mixed-use building to create 3 no. 1-bed residential apartments and changes to third floor fenestration.	The proposed development is located within the LBH Air Quality Management Area and the Hillingdon Uxbridge Road Focus Area. As per the London Plan, developments need to be neutral as minimum and positive in Focus Areas, contributing to the reduction of emissions in these sensitive areas.	According to LBH Local Action Plan, proposed development within Focus Areas (or with impacts on FAs) needs to be Air Quality positive and further action is required to reduce total emissions produced by its operation. Therefore, the total emissions associated with these activities needs to be mitigated.	Therefore, a section 106 agreement with the LAP of £507 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. Two Air Quality conditions were required to manage construction emissions as required by the Mayor of London.	

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome	Neutral
		The level of mitigation required to the proposed development for traffic emissions is £507		
WEST DRAYTON/YIEWSLEY FOCUS AREA				
Planning Ref	24843/APP/2022/2403			NO
COMAG TAVISTOCK ROAD YIEWSLEY UB7 7QE Erection of building comprising 105 residential dwellings (Use Class C3) and 107sq.m (GIA) Community Hub (flexible Use Class E/F.1/F.2), ranging from two to seven storeys together with associated accesses, car parking, cycle parking and hard and soft landscaping	The proposed development is located within the LBH Air Quality Management area (AQMA), and within The West Drayton/Yiewsley LBH Focus Area (FA) bringing additional traffic emissions which will add to current poor air quality	The development is not Air Quality Positive and further action is required to reduce total emissions. The level of mitigation required to the proposed development for traffic emissions is £95,008	Therefore, a section 106 agreement with the LAP of £95,008 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. Two Air Quality conditions were required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.	
Planning Ref	72906/APP/2022/2555			NO
Unit 6 & 7 Orbital Industrial Estate HORTON ROAD YIEWSLEY Change of use of Units 6 and 7 from Class E(g)(iii) to flexible Use Classes E(g)(ii-iii)/B2/B8	The proposed development is located within the LBH Air Quality Management area (AQMA), and 370m from the West Drayton/Yiewsley Focus area bringing Additional traffic emissions which will add to current poor air quality	The development is not Air Quality Neutral. Further, according to LBH Local Action Plan, proposed development within Focus Areas (or with impacts on FAs) needs to be Air Quality positive and further action is required to reduce total emissions produced by its operation. Therefore, the total emissions associated with these activities needs to be mitigated. The level of mitigation required to the proposed development for traffic emissions is £8,330	Therefore, a section 106 agreement with the LAP of £8,330 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. Two Air Quality conditions were required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.	
OUTSIDE FOCUS AREAS				
Planning Ref	17709/APP/2022/1387			YES

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome	Neutral
<p>HAREFIELD ACADEMY NORTHWOOD WAY HAREFIELD Change of use of former residential school (Use Class C2) to education facility (Use Class F.1), two storey extension to provide additional teaching space, construction of a Multi-Use Games Area, revised vehicular access, landscaping, car and cycle parking, and associated works</p>	<p>The proposed development is located Outside the LBH Air Quality Management area (AQMA) which is approximately 3.8 km away, and outside any LBH Focus Area (FA), With current good air quality being reported in the catchment area of the site</p>	<p>The proposed development is considered Air Quality Neutral and is in conformity with current national, regional and local policy and legislation</p>	<p>One Air Quality condition was required to manage construction emissions as required by the Mayor of London</p>	
Planning Ref	35376/APP/2020/3275			NO
<p>SPRINGWELL FACTORY SPRINGWELL LANE HAREFIELD WD3 8UX Redevelopment of the site to provide 40 residential units with associated car parking and landscaping (Outline application with all matters reserved).</p>	<p>The proposed development is located outside the LBH Air Quality Management area (AQMA) and Outside LBH Focus Areas, in the far north of the borough</p>	<p>As per the London Plan and LBH Local Action Plan 2019-2024, developments need to be air quality neutral as minimum. The development is not Air Quality Neutral and further action is required to reduce emissions. The level of mitigation required to the proposed development for traffic emissions is £34,153.</p>	<p>Therefore, a section 106 agreement with the LAP of £34,153. was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. Two Air Quality conditions were required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.</p>	
Planning Ref	12579/APP/2021/2010			YES
<p>WEST LONDON COMPOSTING LTD, HIGHVIEW FARM NEWYEARS GREEN LANE HAREFIELD UB9 6LX The permanent residency of the land to the North and South of Newyears Green Lane for the</p>	<p>The proposed development started operation (under a different business owner) in 2004. The application site is situated approximately 500m west of the western extent of the town of Ruislip, 1km to</p>	<p>The applicant is currently subject to regular reviews and audits from the EA. However, given that there are four residential dwellings within 20m of the facility, and that in 2020 four complaints were still recorded, it is required that additional measures are devised</p>	<p>Therefore, the following condition is required: Within the first six months of use of the development hereby permitted, additional control measures shall be devised and installed in accordance with a scheme for the control of smells and odours that shall have been previously submitted to, and agreed in writing by, the Local Planning Authority. Such control measures shall aim to minimise to the maximum possible extent exposure to odour nuisance of residential dwellings within 20m of the facility and others further downwind in close proximity of the proposed development. These could include (but be not restricted to) further covering /</p>	

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome	Neutral
continued use of an organic composting facility operation to handle a maximum throughput of up to 75,000 tonnes per annum of organic waste, including retrospective retention of two above ground leachate storage tanks and the installation of three freshwater storage tanks. (ADDITIONAL INFORMATION)	the north of Ickenham and 2.5km south-east of the village of Harefield. The site is outside the LBH Air Quality Management Area and Focus Areas. The proposed development has the potential to release to the atmosphere combustion pollutants from traffic exhausts and potential releases of odour, dust and bioaerosols from waste composting operations	and deployed in situ focused to prevent future odour nuisance at these specific locations. These could include further covering /sheeting / screening of upwind odorous activities, particularly during the spring/summer season	sheeting /screening of upwind odorous activities, particularly during the spring/summer season, and or the application of odour absorbent substances. Such control measures as shall have been agreed shall thereafter be retained and maintained to the agreed specification and working order. Reason: To ensure that there is a scheme for the control of odours in place so as to avoid unnecessary detrimental impacts on neighbouring and downwind properties, and to comply with Policy D3, Policy D13. Policy E7, and Policy SI8 of the London Plan.	
Planning Ref	45237/APP/2022/3398			NO
BERRITE ESTATE IRON BRIDGE ROAD WEST DRAYTON Redevelopment of the site to provide 3 no. replacement industrial units (Use Class E(g) (iii), B2 and/or B8 uses), surface level car parking and associated works (works involve demolition of existing Units 6, 7 and 8).	The proposed development is located within the LBH Air Quality Management Area and due to the nature of the activities associated with the land use classes proposed (Use Class E(g) (iii), B2 and/or B8 uses), will be increasing pollutant emissions in this sensitive area	The proposed development is not air quality neutral which is contrary to both regional (the London Plan) and Local policies. Therefore, an appropriate level of mitigation is calculated using the London Plan Air Quality Neutral Guidance (2023). The level of mitigation required associated with the operation phase of the proposed development for both pollutants of concern: NOx and PM2.5 amounts to a S106 contribution required of £571,668.	Therefore, a section 106 agreement with the LAP of £571,668 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels. Two Air Quality conditions were required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.	
Planning Ref	37103/APP/2022/3110			NO
1 LONGWALK ROAD STOCKLEY PARK Refurbishment of existing office building (Use Class E), extension to form new front entrance with new green roof,	The proposed development is located within the LBH Air Quality Management Area. As per the London Plan, developments need to be	The proposed development is not air quality neutral and a S106 contribution for the implementation of the Local Plan for offsetting excess	Therefore, a section 106 agreement with the LAP of £567.94 was required to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road network affected by the proposal that reduce vehicle emissions and or reduce human exposure to pollution levels.	

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome	Neutral
replacement of existing facade, and associated landscaping, cycle parking, and ancillary works.	air quality neutral as minimum.	emissions produced by its operation.	Two Air Quality conditions were required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.	
OUT OF BOROUGH CONSULTATIONS				
Planning Ref	39707/APP/2022/3243			NO
<p>WOODLANDS PARK LANDFILL SITE LAND SOUTH OF SLOUGH ROAD IVER BUCKINGHAMSHIRE</p> <p>Out of borough consultation for Buckinghamshire County Council: Outline planning application with all matters reserved except for principal points of access for the redevelopment of the former landfill site to comprise a data centre development (Use Class B8 (Data Centre)) of up to 163,000 sqm (GEA) delivered across 3 buildings to include ancillary offices, internal plant and equipment and emergency back-up generators and associated fuel storage. The scheme includes site wide landscaping and the creation of parkland, and may also include cycle and car parking, internal circulation routes, soft and hard landscaping, security perimeter fence, lighting, earthworks, District Heating Network, sustainable drainage systems, ancillary infrastructure and a substation.</p>	<p>The proposed development is in the vicinity of the LBH Air Quality Management area (AQMA), within approximately 550 metres of LBH Uxbridge Focus Area and approximately 650 metres of LBH Hillingdon Hospital Focus Area, bringing additional emissions which will add to current backgrounds levels as well as likely to impact on sensitive receptors already exposed to poor air quality in the area and or future residents of the residential opportunity area immediately to the West of the application site (the application site is in the immediate vicinity of an allocated new homes area as per the LBH housing Plan).</p>	<p>The proposed development is considered not air quality neutral as per the London Plan requirements; whilst the application is outside the GLA's jurisdiction, sensitive receptors within the LBH will be exposed to the most adverse impacts due to emissions resulting of the proposed development and therefore the proposal need to comply with regional policy to safeguard LBH citizen's health.</p> <p>Furthermore, the proposed development is not clean by design, using diesel backup generators for its operation instead of alternative cleaner technologies, which would significantly reduce total annual emissions of NOx and PM, which are pollutants of concern in terms of public health. In particular, PM2.5 has been subject to significantly tighter target limits on the 2021 WHO global air quality guidelines, as a result of robust epidemiological evidence of the hazardous</p>	<p>Refusal.</p> <p>The proposed development is not sustainable, not air quality neutral, not clean by design (SRC fitting is a default measure and does not go beyond the need to retrofit for compliance purposes, therefore the claim in the AQ report that the proposal is clean by design because of SCR is not accepted) and produces significant adverse impacts on sensitive receptors downwind of the proposed facility at LBH, deteriorating existing poor air quality conditions and increasing local background levels, which counterfeits the LA efforts to improve air quality and safeguard citizen's health through the measures contained in the Local Action plan.</p> <p>Therefore, the proposed development is contrary to policy EM8 of the Local Plan: Part 1 (November 2012), policy DME1 14 of the London Borough of Hillingdon Local Plan (part 2), the London Borough of Hillingdon Air Quality Action Plan 2019-2023, London Plan (2021) policy S11, and paragraphs 174(e), 186 and 188 of the National Planning Policy Framework (2021).</p>	

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome	Neutral
		<p>effects of this pollutant on human health.</p> <p>Given the significant number of diesel backup generators (171 units), and the lifetime associated with the operation of the proposed development (i.e. 30 years), planning must be effective to select the most sustainable technologies, which, once approved, will be in place for a long period of time. Unlike vehicle emissions, which are expected to reduce significantly over the next 10 to 20 years, diesel backup generators will remain polluting at the same load/rate over the lifetime of the proposal, emitting NOx, PM10, and PM2.5.</p> <p>The development is not sustainable without further mitigation and further action is required to reduce emissions. As it stands, the proposed development will expose LBH sensitive receptors to moderate to substantial adverse impacts with an (underestimated) 18.2 tonnes/year of NOx released on an annual basis into the atmosphere, together with 0.9 tonnes/year of PM2.5; such level of annual emissions is unacceptable, increasing local backgrounds and counterfeiting planning efforts to improve air quality and</p>		

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome	Neutral
		protect citizen's health. The damage cost to society is a good indicator of the damage such emissions originate in terms of health and other as well as the benefits should the proposal be refused.		

APPENDIX D – NO₂ and PM₁₀ concentration statistics for LBH continuous monitoring stations

Figures D1 to D12 below are box and whisker plots to show the distribution of NO₂ concentration for each LBH continuous monitoring station. The boxes demarcate the lower quartile, median and upper quartile. The whiskers extend to the maximum and minimum values within median ± 1.5 times interquartile range (IQR). Values outside the median ± 1.5 times IQR are generally considered as outliers. It can be seen that Hillingdon Hayes, with the exception of April and May, presents the highest maximum values and upper quartile ranges throughout 2022.

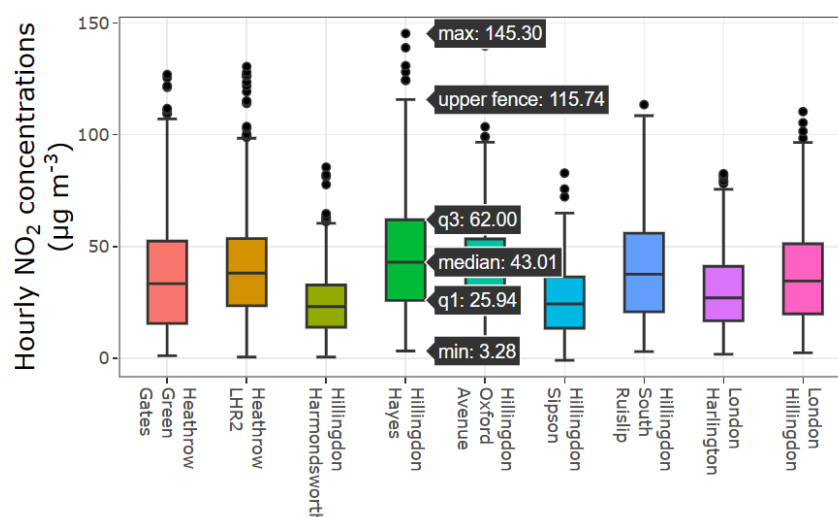


Figure D1. Boxplot for NO₂ concentration – January.

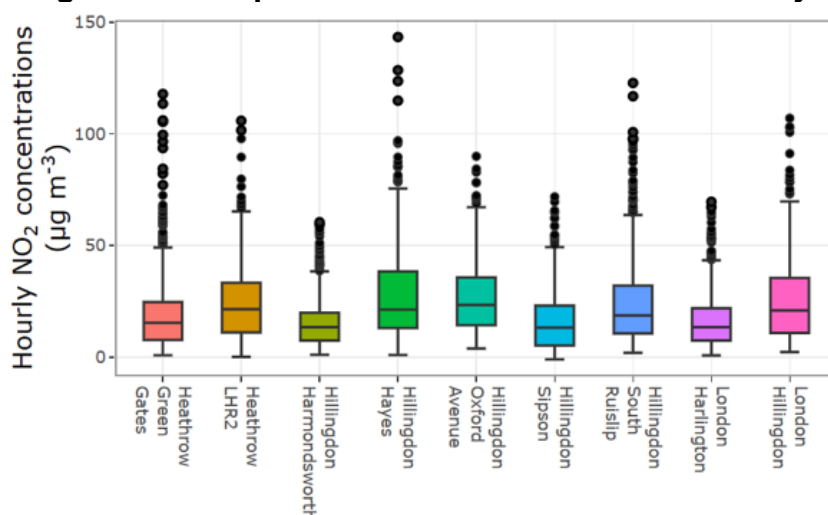


Figure D2. Boxplot for NO₂ concentration – February.

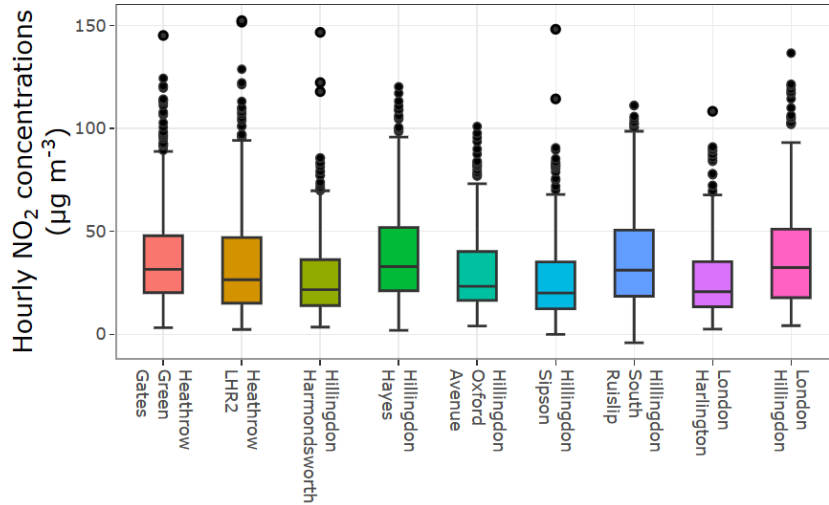


Figure D3. Boxplot for NO₂ concentration – March.

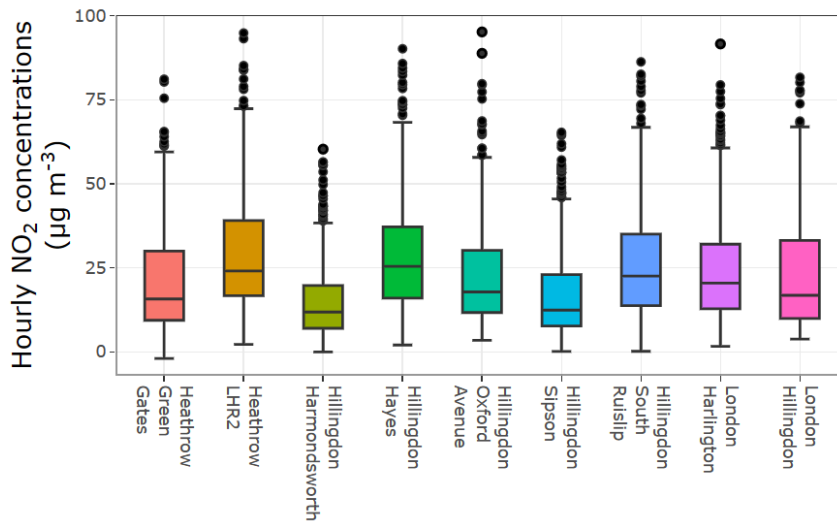


Figure D4. Boxplot for NO₂ concentration – April.

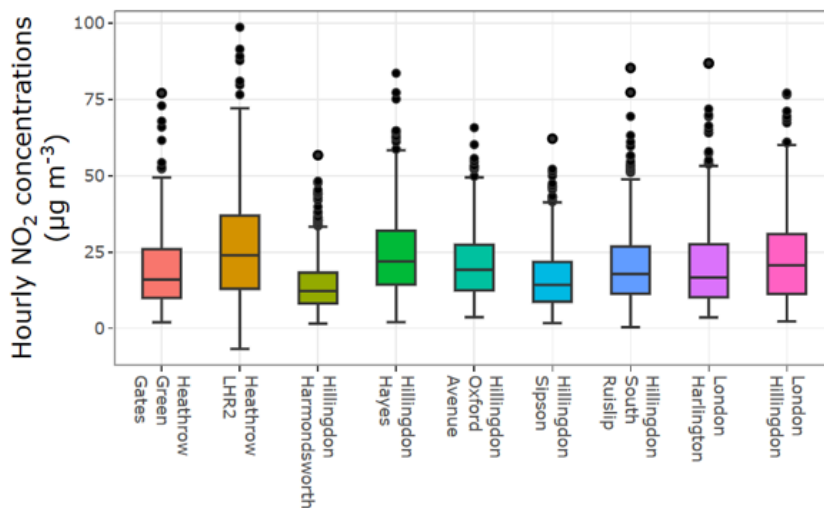


Figure D5. Boxplot for NO₂ concentration – May.

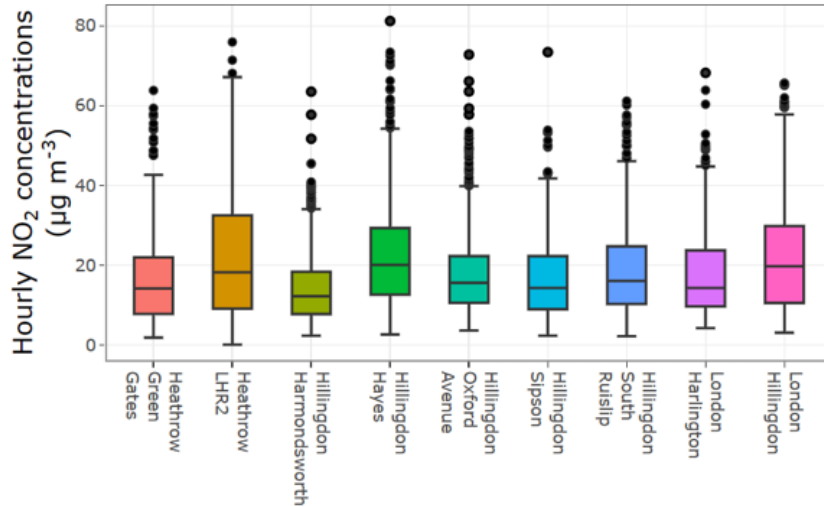


Figure D6. Boxplot for NO₂ concentration – June.

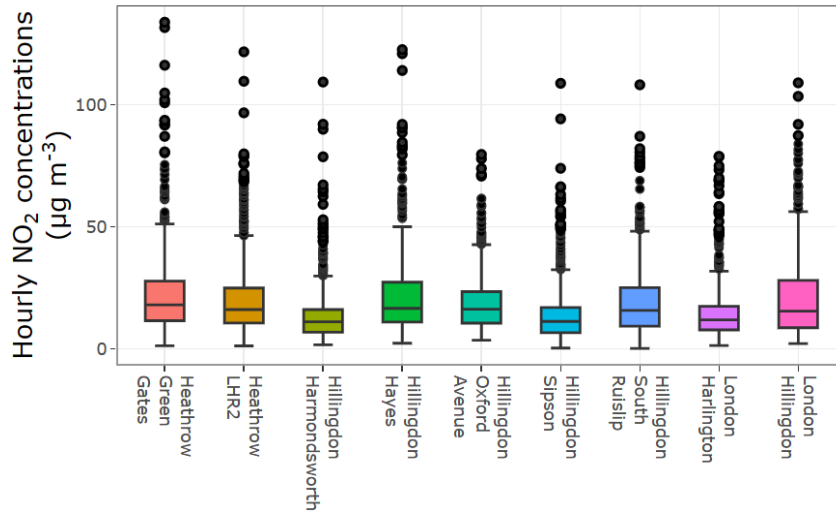


Figure D7. Boxplot for NO₂ concentration – July.

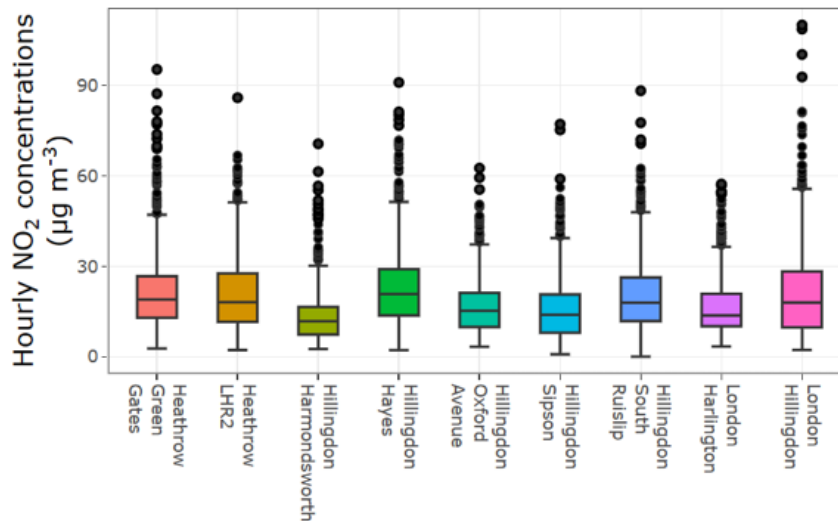


Figure D8. Boxplot for NO₂ concentration – August.

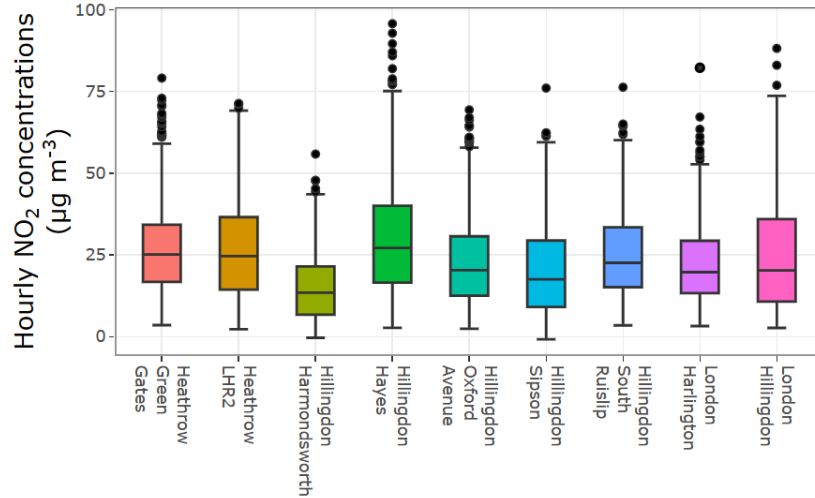


Figure D9. Boxplot for NO₂ concentration – September.

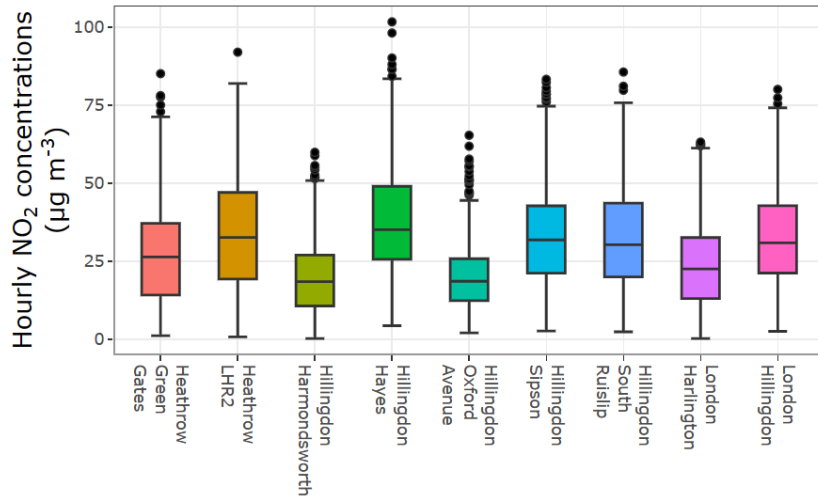


Figure D10. Boxplot for NO₂ concentration – October.

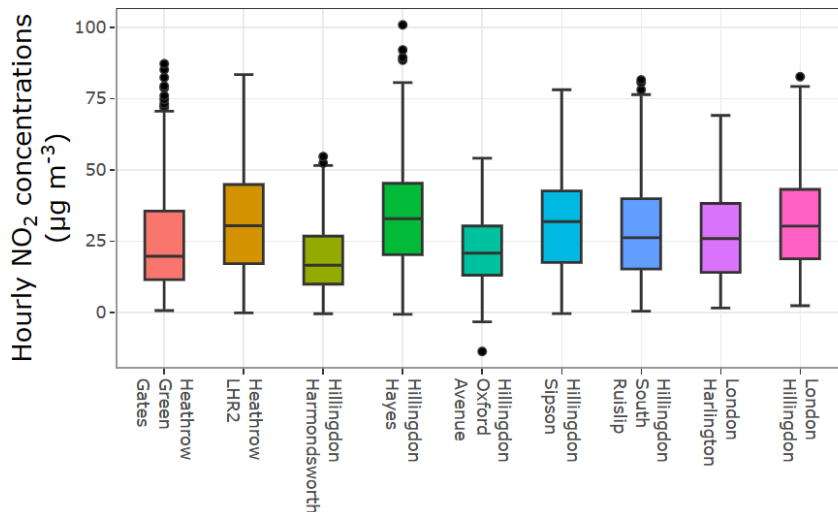


Figure D11. Boxplot for NO₂ concentration – November.

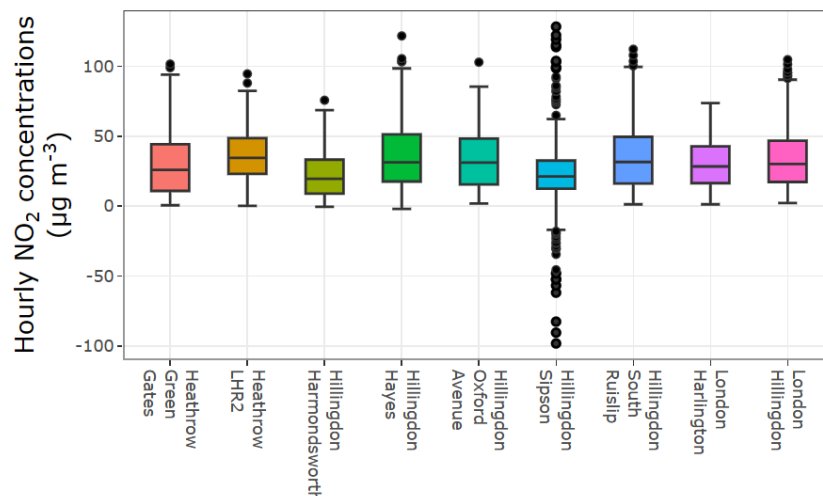


Figure D12. Boxplot for NO₂ concentration – December.

Figures D13 to D24 below show daily variation in NO₂ concentrations across the period of the report, as laid out in a calendar style, for the monitoring station Hillingdon Hayes. This allows intuitive viewing of day-to-day headline trends in the wider context of the period. The background colours shown for each day relate to the concentration.

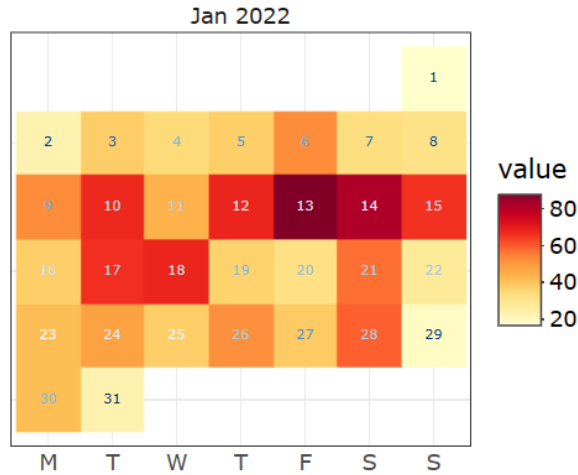


Figure D13. Daily variation in NO₂ concentrations across January for the monitoring station Hillingdon Hayes. Units: µg.m⁻³.

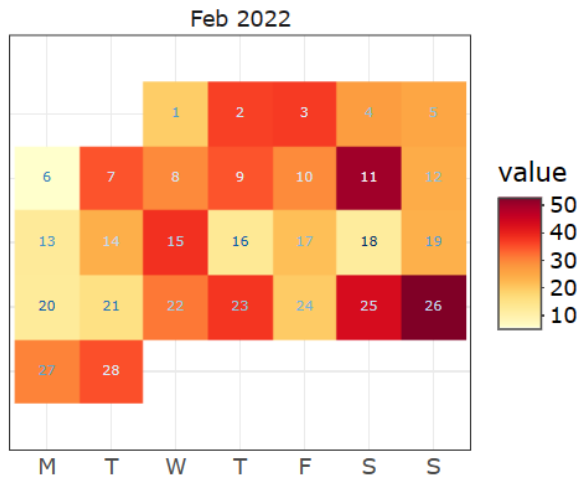


Figure D14. Daily variation in NO₂ concentrations across February for the monitoring station Hillingdon Hayes. Units: µg.m⁻³.

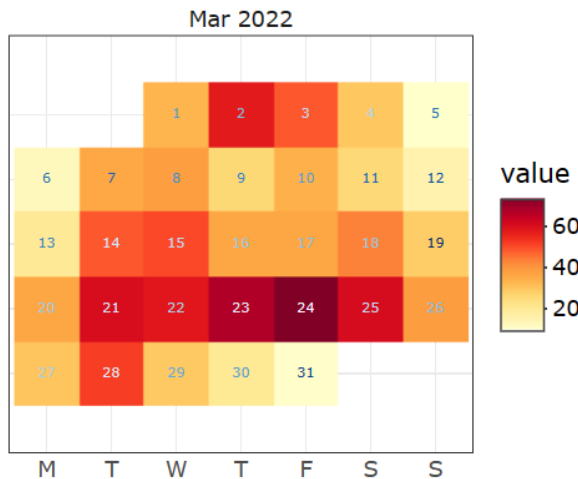


Figure D15. Daily variation in NO₂ concentrations across March for the monitoring station Hillingdon Hayes. Units: µg.m⁻³.

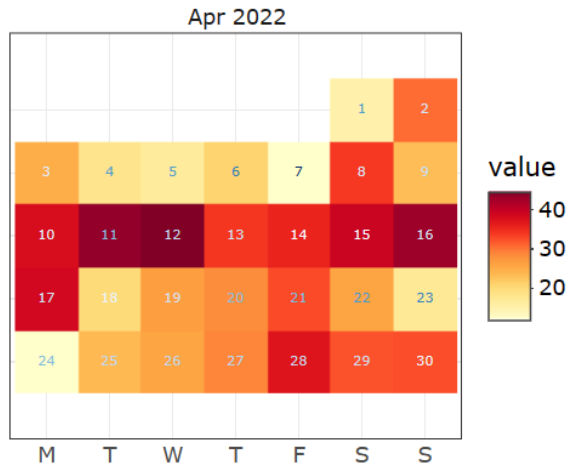


Figure D16. Daily variation in NO₂ concentrations across April for the monitoring station Hillingdon Hayes. Units: µg.m⁻³.

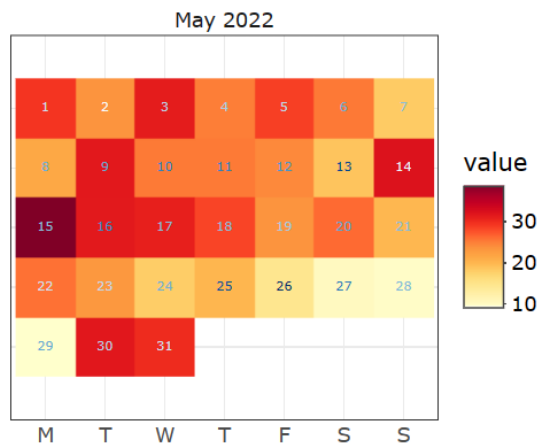


Figure D17. Daily variation in NO₂ concentrations across May for the monitoring station Hillingdon Hayes. Units: µg.m⁻³.

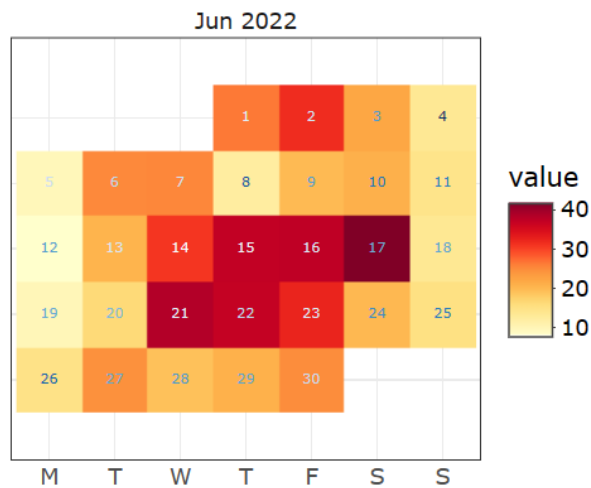


Figure D18. Daily variation in NO₂ concentrations across June for the monitoring station Hillingdon Hayes. Units: µg.m⁻³.

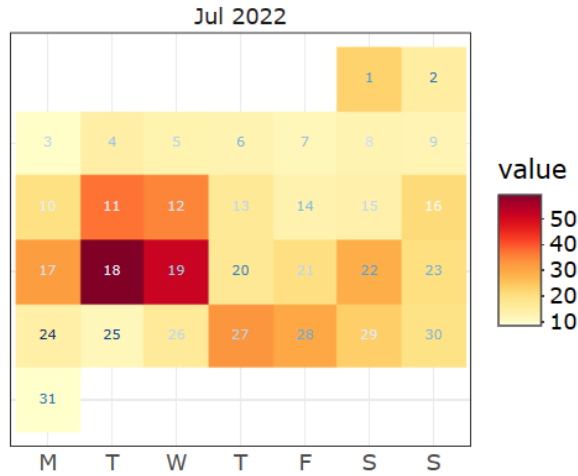


Figure D19 - Daily variation in NO₂ concentrations across July for the monitoring station Hillingdon Hayes

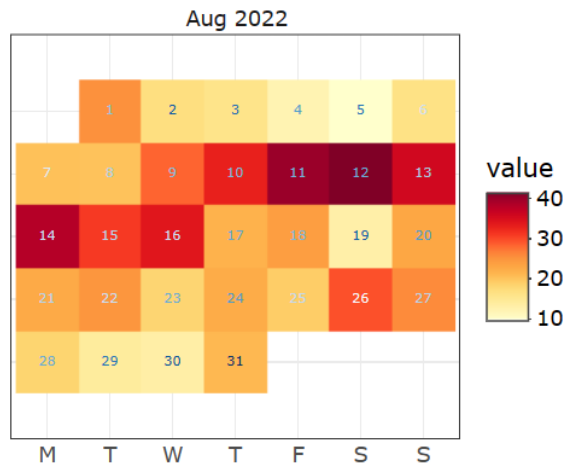


Figure D20. Daily variation in NO₂ concentrations across August for the monitoring station Hillingdon Hayes. Units: $\mu\text{g}\cdot\text{m}^{-3}$.

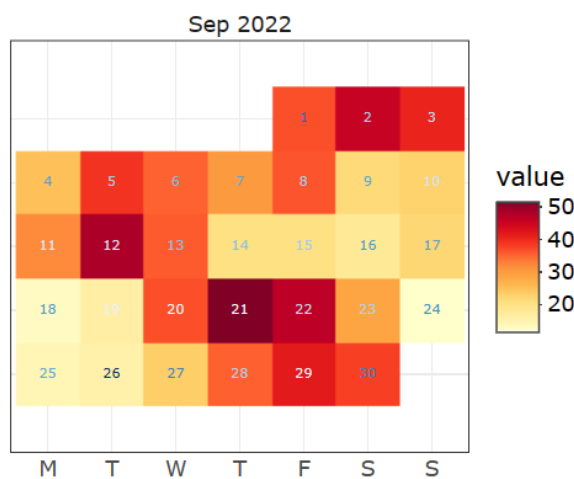


Figure D21. Daily variation in NO₂ concentrations across September for the monitoring station Hillingdon Hayes. Units: $\mu\text{g}\cdot\text{m}^{-3}$.

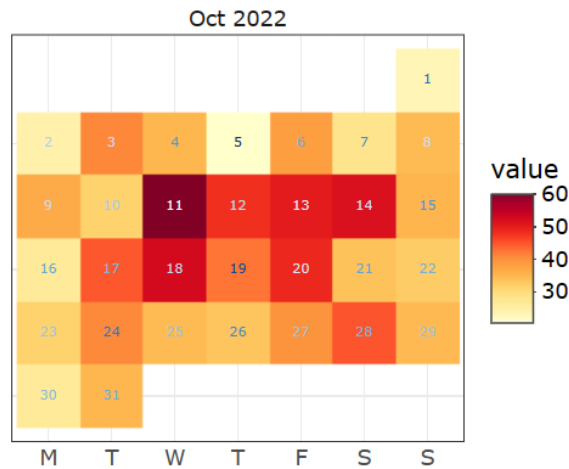


Figure D22. Daily variation in NO₂ concentrations across October for the monitoring station Hillingdon Hayes. Units: µg.m⁻³.

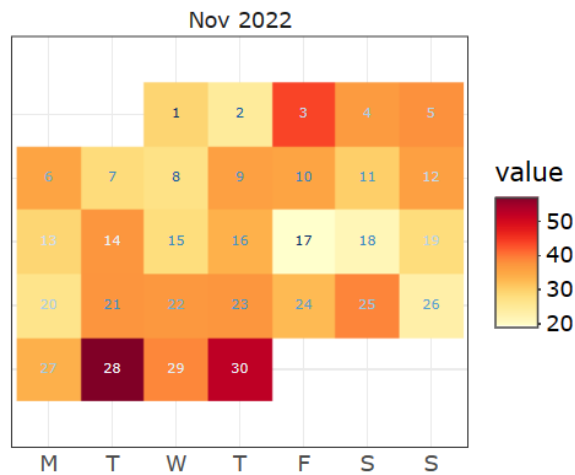


Figure D23. Daily variation in NO₂ concentrations across November for the monitoring station Hillingdon Hayes. Units: µg.m⁻³.

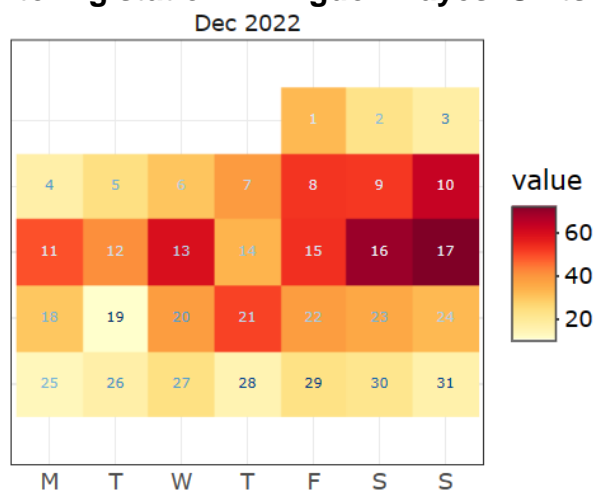


Figure D24. Daily variation in NO₂ concentrations across December for the monitoring station Hillingdon Hayes. Units: µg.m⁻³.

Figures D25 to D36 below are box and whisker plots to show the distribution of PM₁₀ concentrations for each LBH continuous monitoring station. The boxes demarcate the lower quartile, median and upper quartile. The whiskers extend to the maximum and minimum values within median ± 1.5 times interquartile range (IQR). Values outside the median ± 1.5 times IQR are generally considered as outliers. It can be seen that Hillingdon Hayes, presents the highest maximum values and upper quartile ranges throughout 2022.

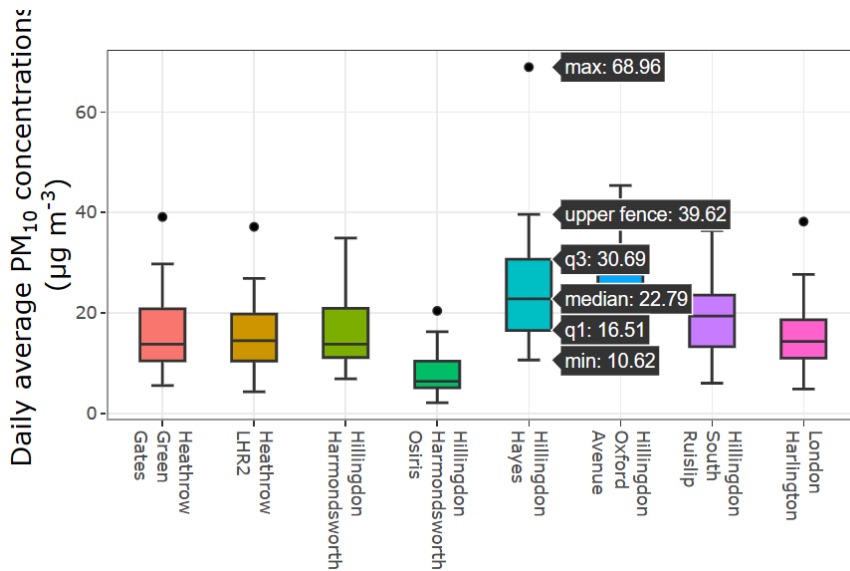


Figure D25. Boxplot for PM₁₀ concentration – January.

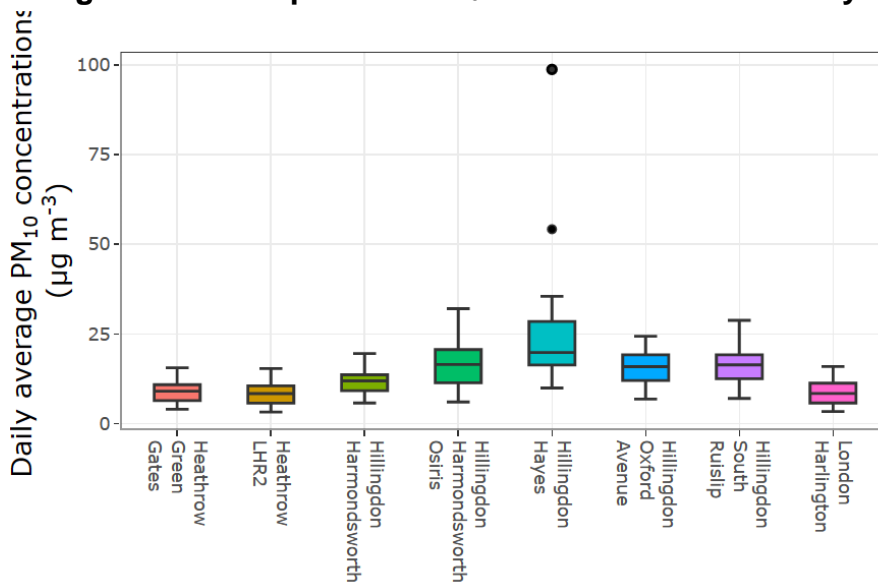


Figure D26. Boxplot for PM₁₀ concentration – February.

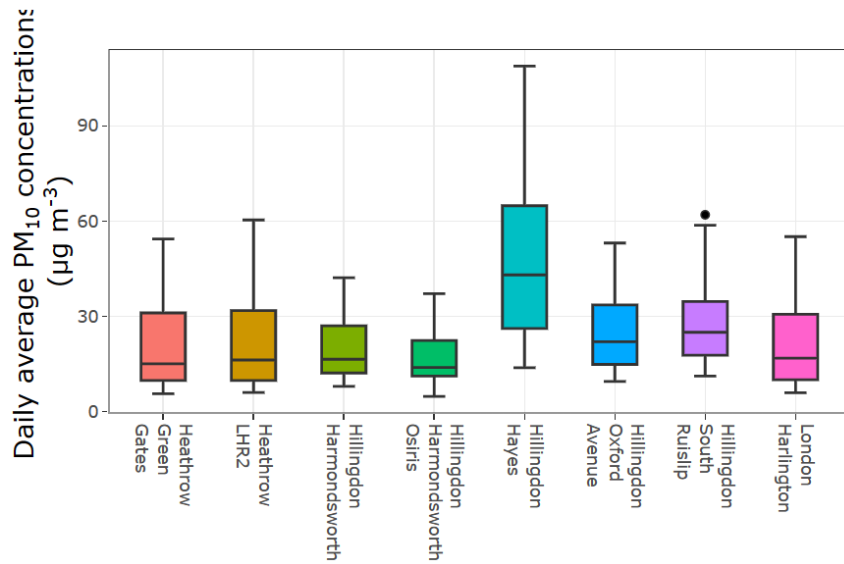


Figure D27. Boxplot for PM₁₀ concentration – March.

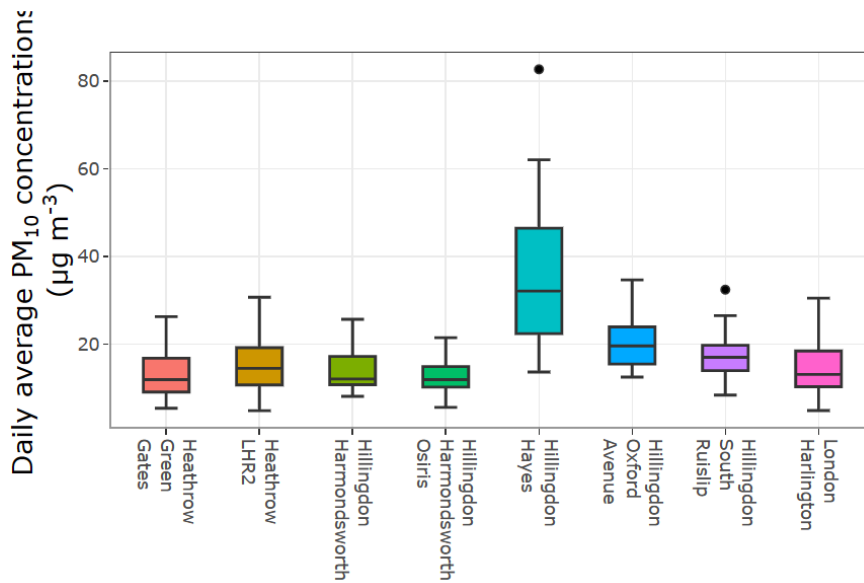


Figure D28. Boxplot for PM₁₀ concentration – April.

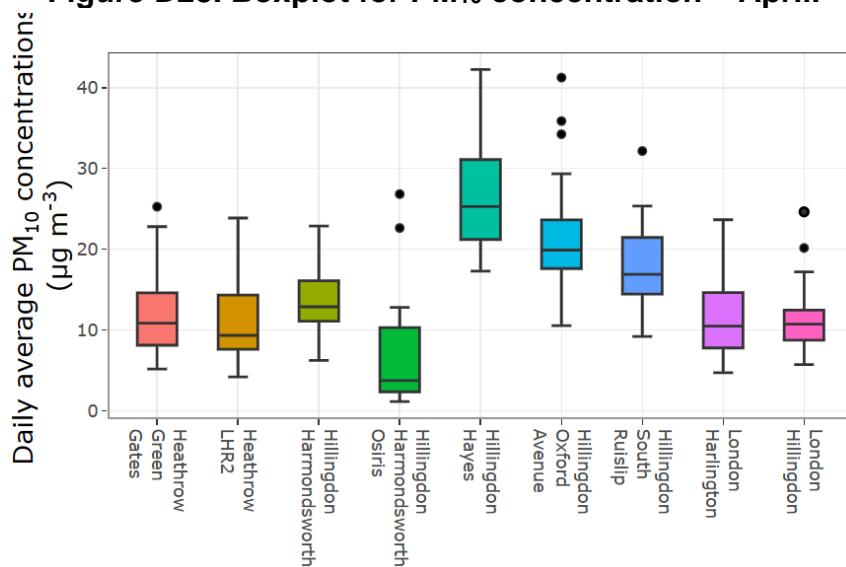


Figure D29. Boxplot for PM₁₀ concentration – May.

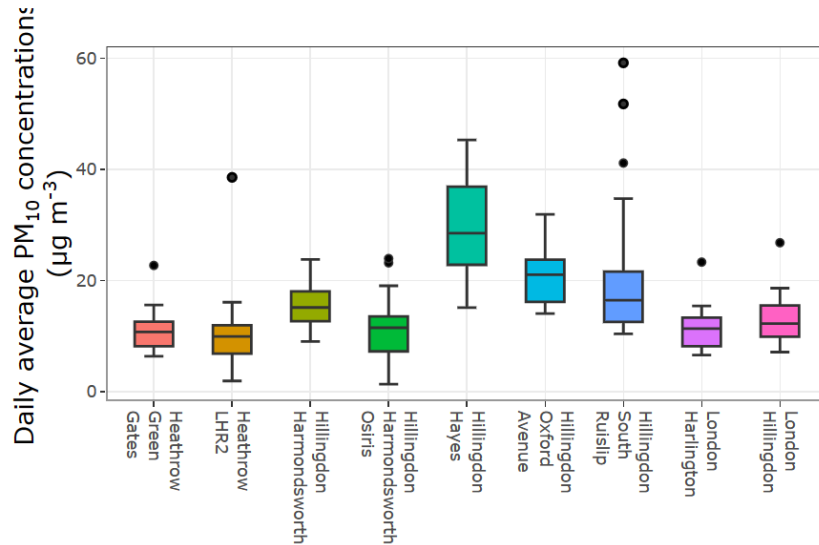


Figure D30. Boxplot for PM₁₀ concentration – June.

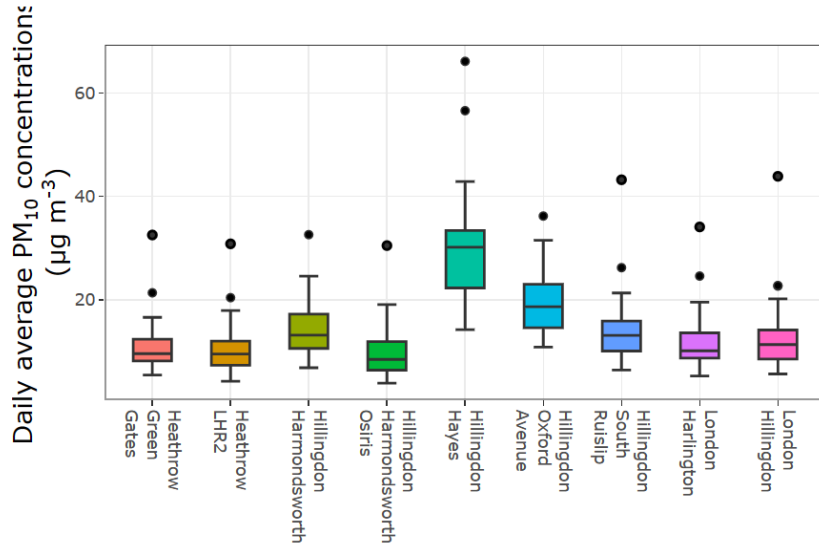


Figure D31. Boxplot for PM₁₀ concentration – July.

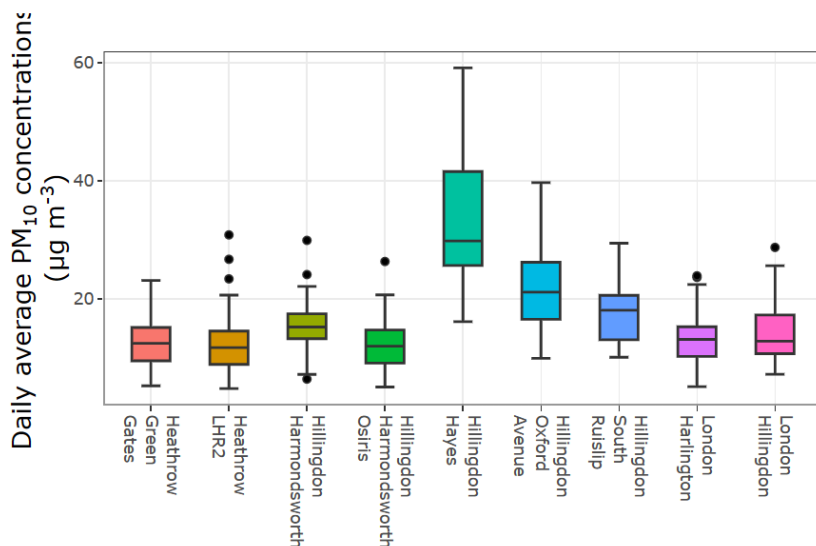


Figure D32. Boxplot for PM₁₀ concentration – August.

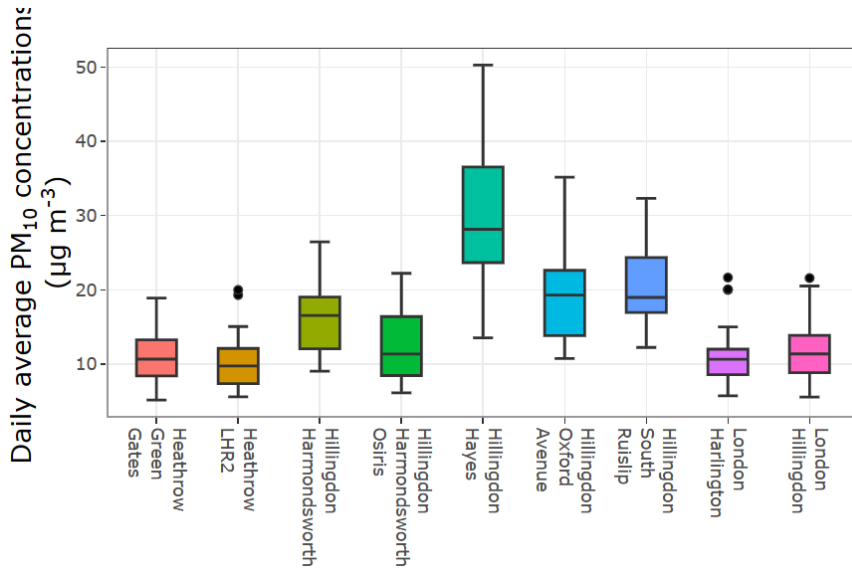


Figure D33. Boxplot for PM₁₀ concentration – September.

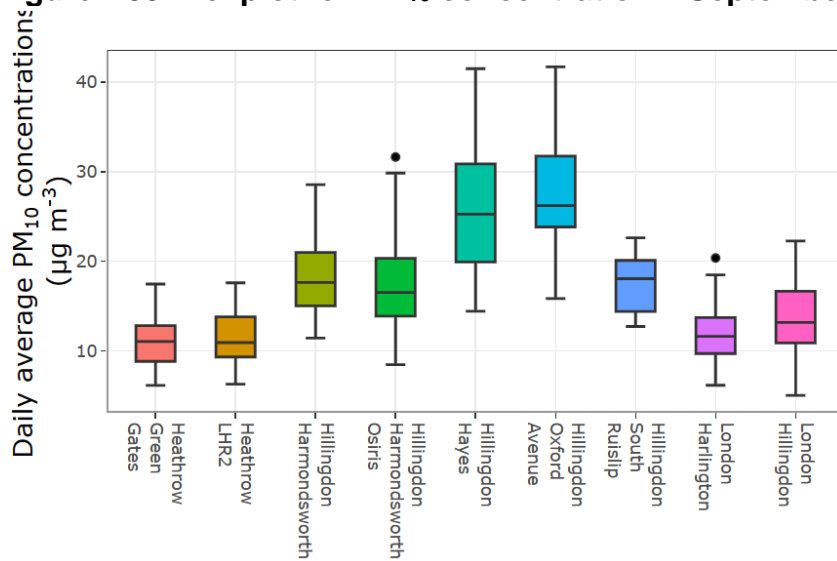


Figure D34. Boxplot for PM₁₀ concentration – October.

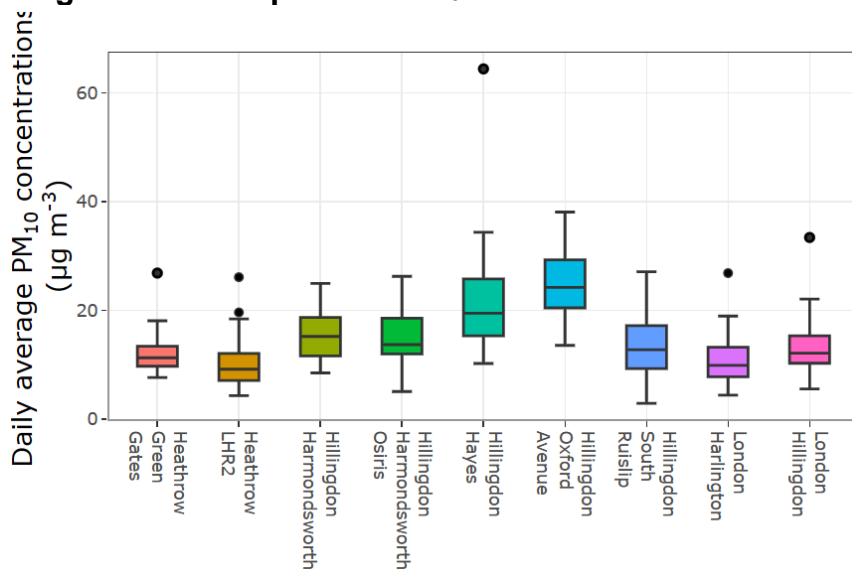


Figure D35. Boxplot for PM₁₀ concentration – November.

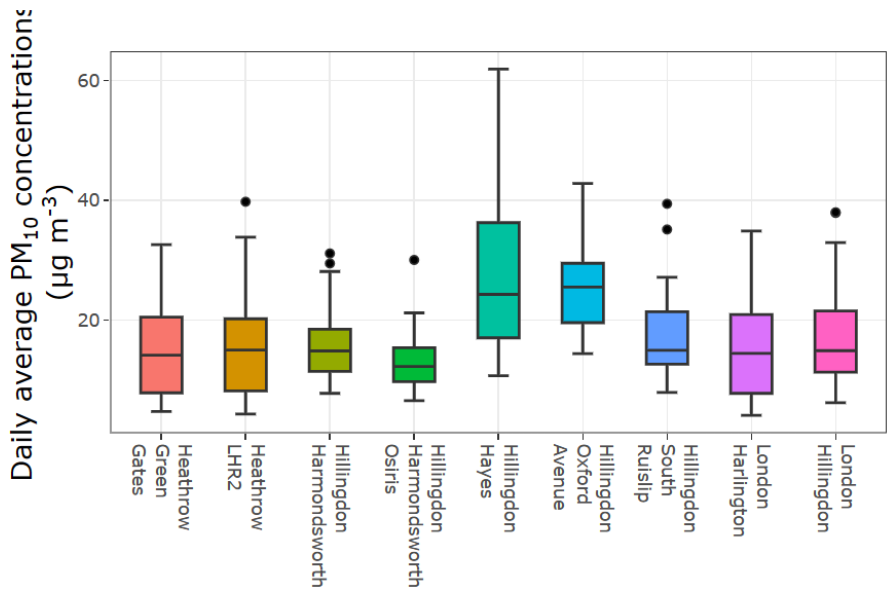


Figure D36. Boxplot for PM₁₀ concentration – December.

Figures D37 to D48 below show daily variation in PM₁₀ concentrations across the period of the report, as laid out in a calendar style, for the monitoring station Hillingdon Hayes. The background colours shown for each day relate to the concentration.

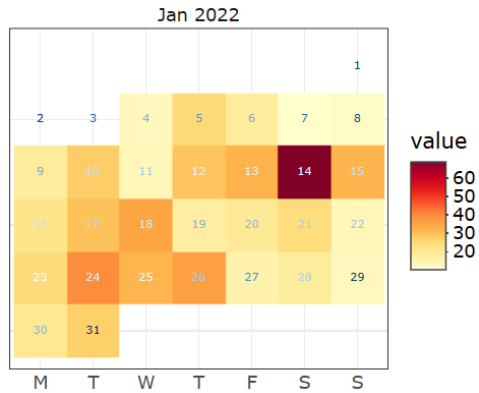


Figure D37. Daily variation in PM₁₀ concentrations across January for the monitoring station Hillingdon Hayes. Units: µg.m⁻³.

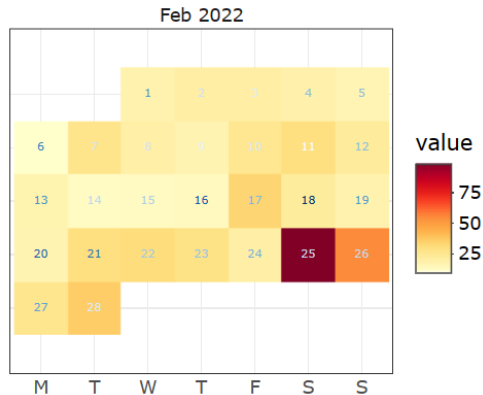


Figure D38. Daily variation in PM₁₀ concentrations across February for the monitoring station Hillingdon Hayes. Units: µg.m⁻³.

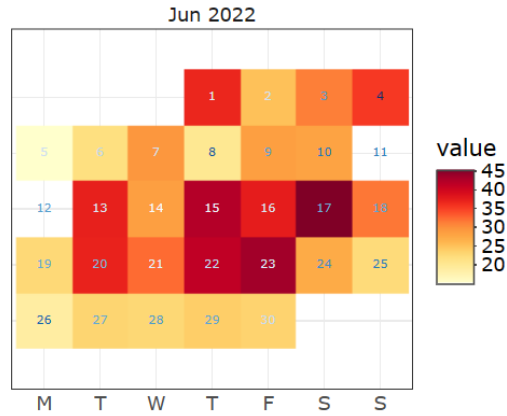


Figure D42. Daily variation in PM₁₀ concentrations across June for the monitoring station Hillingdon Hayes. Units: $\mu\text{g.m}^{-3}$.

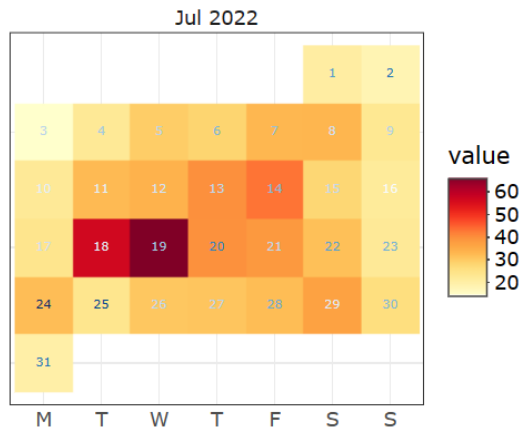


Figure D43. Daily variation in PM₁₀ concentrations across July for the monitoring station Hillingdon Hayes. Units: $\mu\text{g.m}^{-3}$.

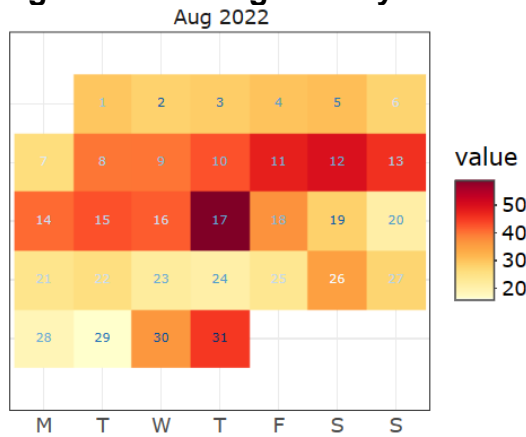


Figure D44. Daily variation in PM₁₀ concentrations across August for the monitoring station Hillingdon Hayes. Units: $\mu\text{g.m}^{-3}$.

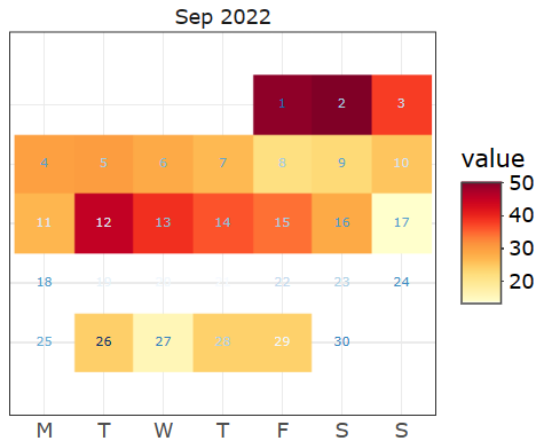


Figure D45. Daily variation in PM₁₀ concentrations across September for the monitoring station Hillingdon Hayes. Units: $\mu\text{g}\cdot\text{m}^{-3}$.

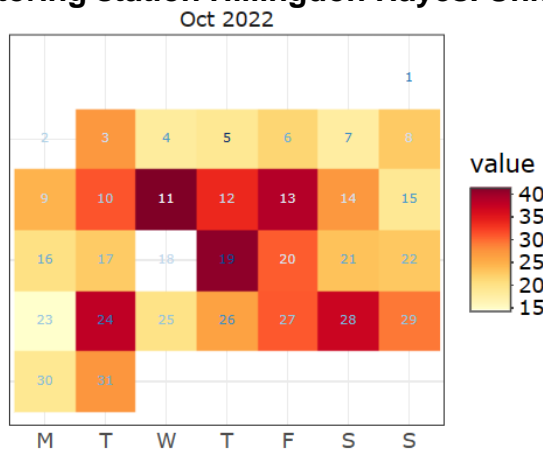


Figure D46. Daily variation in PM₁₀ concentrations across October for the monitoring station Hillingdon Hayes. Units: $\mu\text{g}\cdot\text{m}^{-3}$.

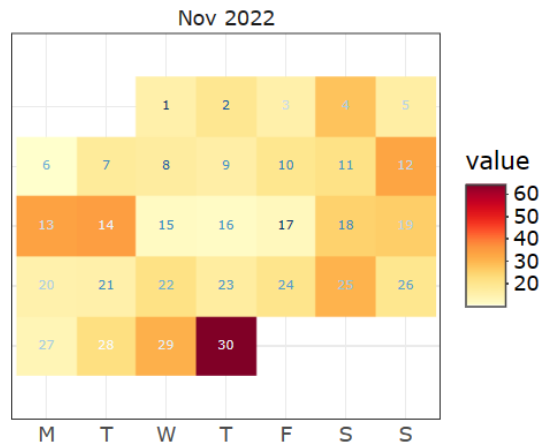


Figure D47. Daily variation in PM₁₀ concentrations across November for the monitoring station Hillingdon Hayes. Units: $\mu\text{g}\cdot\text{m}^{-3}$.

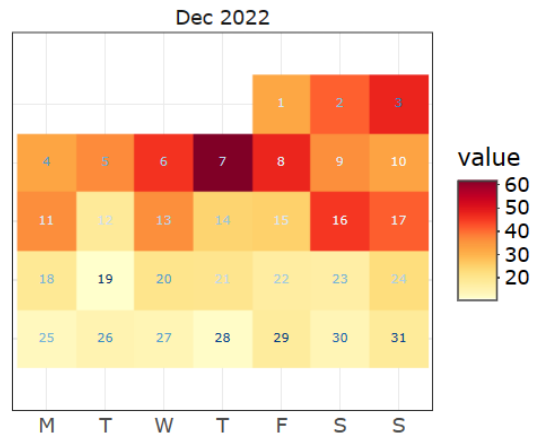


Figure D48. Daily variation in PM₁₀ concentrations across December for the monitoring station Hillingdon Hayes. Units: µg.m⁻³.

