

# The London Borough of Hillingdon



## Air Quality Annual Status Report, 2021

# **London Borough of Hillingdon Air Quality Annual Status Report for 2021**

**Date of publication: May 2022**

This report provides a detailed overview of air quality in the London Borough of Hillingdon during 2021. It has been produced to meet the requirements of the London Local Air Quality Management statutory process<sup>1</sup>. It also updates on the Council's Air Quality Action Plan since its adoption in May 2019 to the end of March 2022.

## **Contact details**

*Val Beale*  
*Air Quality officer, London Borough of Hillingdon*  
*vbeale@hillingsdon.gov.uk*

**This report has been produced by:**  
Val Beale, London Borough of Hillingdon  
Mike Holland, EMRC  
Ana Grossinho, AQE Global

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<sup>1</sup> 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

AQ	Air quality
AQAP	Air Quality Action Plan
AQFA	Air Quality Focus Area
AQMA	Air Quality Management Area
AQN	Air Quality Neutral
AQO	Air Quality Objective
ASR	Annual Status Report
AURN	Automatic Urban and Rural Network
BAM	Beta attenuation monitoring
CAB	Cleaner Air Borough
CHP	Combined Heat and Power
EPC Band	Energy Performance Certificate band
EU	European Union
EV	Electric Vehicle
FDMS	Filter Dynamics Measurement System
FIDAS	Fine Dust Analysis System
FORS	Fleet Operator Recognition System
GLA	Greater London Authority
HE	Highways England
HGV	Heavy Goods Vehicle
HS2	High Speed 2 (rail line from London to Birmingham)
LAEI	London Atmospheric Emissions Inventory
LBH	London Borough of Hillingdon
LEZ	Low Emission Zone
LIP	Local Implementation Plan (for Borough transport)
LLAQM	London Local Air Quality Management
MAQF	Mayor's Air Quality Fund
NICE	National Institute for Health and Care Excellence
NOx	Oxides of nitrogen (NO <sub>2</sub> + NO)
NO <sub>2</sub>	Nitrogen dioxide
NPPF	National Planning Policy Framework
NRMM	Non-Road Mobile Machinery
O <sub>3</sub>	Ozone
PM <sub>1</sub>	Particulate matter less than 1 micron in diameter
PM <sub>10</sub>	Particulate matter less than 10 microns in diameter
PM <sub>2.5</sub>	Particulate matter less than 2.5 microns in diameter
QA/QC	Quality Assurance / Quality Control
SPG	Sustainable Planning Guidance
STARS	TfL Community Project to reduce car usage
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:

- Air quality levels and trends in the London Borough of Hillingdon in 2021 using monitored data;
- Progress with the Borough's Air Quality Action Plan (AQAP) from March 2021 to March 2022;
- Planning Applications that were relevant to air quality in the Borough and the role of the Planning System on Local Air Quality Management;
- Update on the London Borough of Hillingdon actions undertaken for improving air quality;
- 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 several air pollutants. The Borough's Air Quality Management Area (AQMA) was declared because of non-compliance with the annual limit value for nitrogen dioxide (NO<sub>2</sub>) in parts of the Borough. However, fine particulate matter (expressed as either PM<sub>2.5</sub> or PM<sub>10</sub> reflecting different size fractions), alongside NO<sub>2</sub>, is also of interest recognising its importance to public health. This is recognised in proposals for revised limit values for PM<sub>2.5</sub> in the UK<sup>2</sup>.

The World Health Organisation<sup>3</sup> has published new air quality guidelines with tighter Air quality limit values for particulate matter, specifically PM<sub>2.5</sub>. The Mayor of London has adopted these stricter guidelines for particulate matter which will further strengthen the protection of public health, with clear consequences for planning and local air quality management.

The Borough has collaborated with the GLA in recent years to define 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 (2021) is compliant with current air quality objectives throughout the Borough. A significant contribution to meeting the existing limit values was the effects of the COVID-19 pandemic on travelling patterns. Compared to 2019, before the pandemic, this resulted in reduced traffic on the road network and a significant reduction in airport activity. Together with the new adoption of working trends, these factors contributed to the sharp improvement in air quality observed across the Borough. Further contributions were made from the gradual improvement of the vehicle fleet, though the contribution of electric vehicles at the present time is modest.

With the exception of a few locations, the results obtained indicate a stabilisation of the annual mean concentrations of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>, with the trends observed in 2020 being

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<sup>2</sup> [https://uk-air.defra.gov.uk/library/air-quality-targets#:~:text=The%20Environment%20Act%202021%20establishes,Environment%20Act%20\(Part%201\).](https://uk-air.defra.gov.uk/library/air-quality-targets#:~:text=The%20Environment%20Act%202021%20establishes,Environment%20Act%20(Part%201).)

<sup>3</sup> <https://apps.who.int/iris/handle/10665/345329>

replicated in 2021. However, areas of accelerated development like Hayes suggest that the risk of exceedance of the current air quality objectives is still present within Focus Areas if there is a return to similar activity levels as those seen pre-pandemic. In view of the remaining pandemic influences on traffic patterns for the reporting year, developers are required to use 2019 data to characterise their baseline conditions as well as for model verification purposes.

Actions to improve air quality are being taken by Hillingdon through its AQAP, through actions by the GLA such as the ULEZ, and via legislation at UK and European levels. Particular attention is being paid to a series of air quality Focus Areas in the Borough, where pollutant exposures are of highest concern.

Hillingdon continues to take action through its AQAP to address problems across the borough:

- understand and tackle pollution hot spots;
- reduce emissions where Hillingdon 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 public exposure to hazardous levels.

Highlights in the Action Plan for 2021 include:

- Introduction of 2 low-cost automatic pollution sensors in the Borough
- Action on Idling vehicles, with 521 vehicles fined in the reporting period
- Training of the Borough's fleet drivers
- Revision of the Borough's vehicle procurement practice to ensure consideration of electric vehicles
- Various actions with schools including increased participation of schools in the No Idling at Schools campaign, the Green Barriers at Schools project, release of an air quality raising awareness package for schools, introduction of more school streets and bike and pedestrian training.
- Town centre projects such as improving green infrastructure in Hayes
- Work on modal shift, for example following up on the travel plans secured as a condition on new development, with monitoring performed by the WestTrans group
- Public health initiatives including promoting the use of AirText and awareness raising regarding wood burning.
- Continued enforcement of NRMM requirements.

The planning system has continued to play a pivotal role in the Borough's local air quality management, recognising the need to improve air quality in residential areas, the nature of the Focus Areas, and the need to mitigate emissions in line with the National Planning Policy Framework, the London Plan, and Hillingdon's local policies and Air Quality Action Plan. Links are also being made through the Council's AQAP with other policy areas including Public Health and Climate Change.

# 1 Introduction

## 1.1 The purpose of this report

This report provides an overview of air quality in the London Borough of Hillingdon during 2021. It has been produced to meet the requirements of the London Local Air Quality Management statutory process<sup>4</sup>. National Air Quality Standards and Objectives are given in Table A1. There have been no exceedances in the Borough of limit values for other pollutants for which standards exist since the current system of air quality planning was adopted in the early 2000s.

**Table A1. Summary of National Air Quality Standards and Objectives for the pollutants of relevance to London Borough of Hillingdon**

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

Note: <sup>1</sup> by which to be achieved and maintained thereafter

The World Health Organisation (WHO) has published updated air quality guidelines in 2021. These reflect a significant reduction in concentrations relative to the figures shown in Table A1 and are summarised in Table A2. This shows a significant reduction in the Guideline figures compared to existing UK (and EU) legislation, as shown in the final column of the table. Recognising the challenge set by the new guidelines, WHO has introduced a series of interim targets also.

<sup>4</sup> 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 A2. Summary of WHO Air Quality Guidelines for the pollutants of most interest to London Borough of Hillingdon (AQG levels and interim targets)**

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

a) values in red have been adopted by the Mayor of London in the 2021 London Plan

The Council, in line with the requirements of the London Plan, will scrutinise planning applications regarding emissions of particulate matter with an increasing focus on the more stringent limits being discussed for the annual mean values for PM<sub>10</sub> and PM<sub>2.5</sub> of 20  $\mu\text{g}\cdot\text{m}^{-3}$  and 10  $\mu\text{g}\cdot\text{m}^{-3}$  respectively.

Exceedance of the air quality guideline (AQG) levels is associated with important risks to public health. These guidelines provide an evidence-informed tool to inform legislation and policy, having been adopted by the Mayor of London in its London Plan for the pollutant particulate matter (20  $\mu\text{g}\cdot\text{m}^{-3}$  for PM<sub>10</sub> and 10  $\mu\text{g}\cdot\text{m}^{-3}$  for PM<sub>2.5</sub>). Ultimately, these guidelines provide guidance to focus effort on reducing the significant health burden resulting from exposure to air pollution.

## 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 in 2003 due to exceedance of objectives for NO<sub>2</sub>. 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<sub>x</sub>) 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)<sup>5</sup> 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 which can be updated before 2025 to reflect any policy changes and or additional measures deemed fit to further improve air quality in the Borough.

In addition to providing data on air quality in the Borough in 2021, 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.

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<sup>5</sup> [http://www.hillingdon-air.info/pdf/Hillingdon\\_AQAP\\_2019\\_2024\\_finalversion.pdf](http://www.hillingdon-air.info/pdf/Hillingdon_AQAP_2019_2024_finalversion.pdf)

## 2 Air Quality Monitoring in Hillingdon

Air quality monitoring is carried out in the Borough using a mix of automatic and passive (diffusion tube) monitors. The automatic sites provide the most accurate assessment of air quality possible for specific locations. The passive monitors provide a cost-effective way of increasing the monitoring in the Borough to a larger number of sites. Information is provided here for both types of monitor.

### 2.1 Automatic monitoring sites

There were 12 operational automatic continuous monitoring sites in the London Borough of Hillingdon in 2021 (Table B). Hillingdon 1 in South Ruislip (HI1), Hillingdon 3 in Oxford Avenue (HI3), Hillingdon Sipson (SIPS), London Harmondsworth (HIL1), Hillingdon Hayes (HIL5), and London Harmondsworth Osiris (HIL4) are all part of the Borough 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 with further details in Table B.

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

### 2.2 Non-automatic monitoring sites

Passive diffusion tube monitoring of NO<sub>2</sub> was carried out at 44 sites in the Borough in 2021, covering both background and roadside locations, supplementing the information generated by the automatic network (Figure 3 with further details in Table C1). Two of the diffusion tube sites are co-located with continuous monitoring sites to derive local bias adjustment factors: HILL03 (that has 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 0.88 was derived from the colocation exercise in 2021. 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))<sup>6</sup>.

Full details of diffusion tube QA/QC, including justification for the choice of bias adjustment factors are presented in Appendix A. Monthly NO<sub>2</sub> 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 NO<sub>2</sub> and PM<sub>2.5</sub> and capturing local conditions at Tavistock Road and Harlington Road (Figure 3 and Table C2). Small sensors are not as accurate as reference-grade analysers, but by combining their data

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<sup>6</sup> [https://www.london.gov.uk/sites/default/files/llaqm\\_technical\\_guidance\\_2019.pdf](https://www.london.gov.uk/sites/default/files/llaqm_technical_guidance_2019.pdf)

with the London Air reference network, acceptable data quality standards can be achieved. The Breathe London pilot used 100 AQMesh pods as part of a city-wide network of air quality monitoring stations: results will be assessed to see whether they indicate that small sensor monitoring technology can be deployed successfully to give results comparable with those of reference equipment.

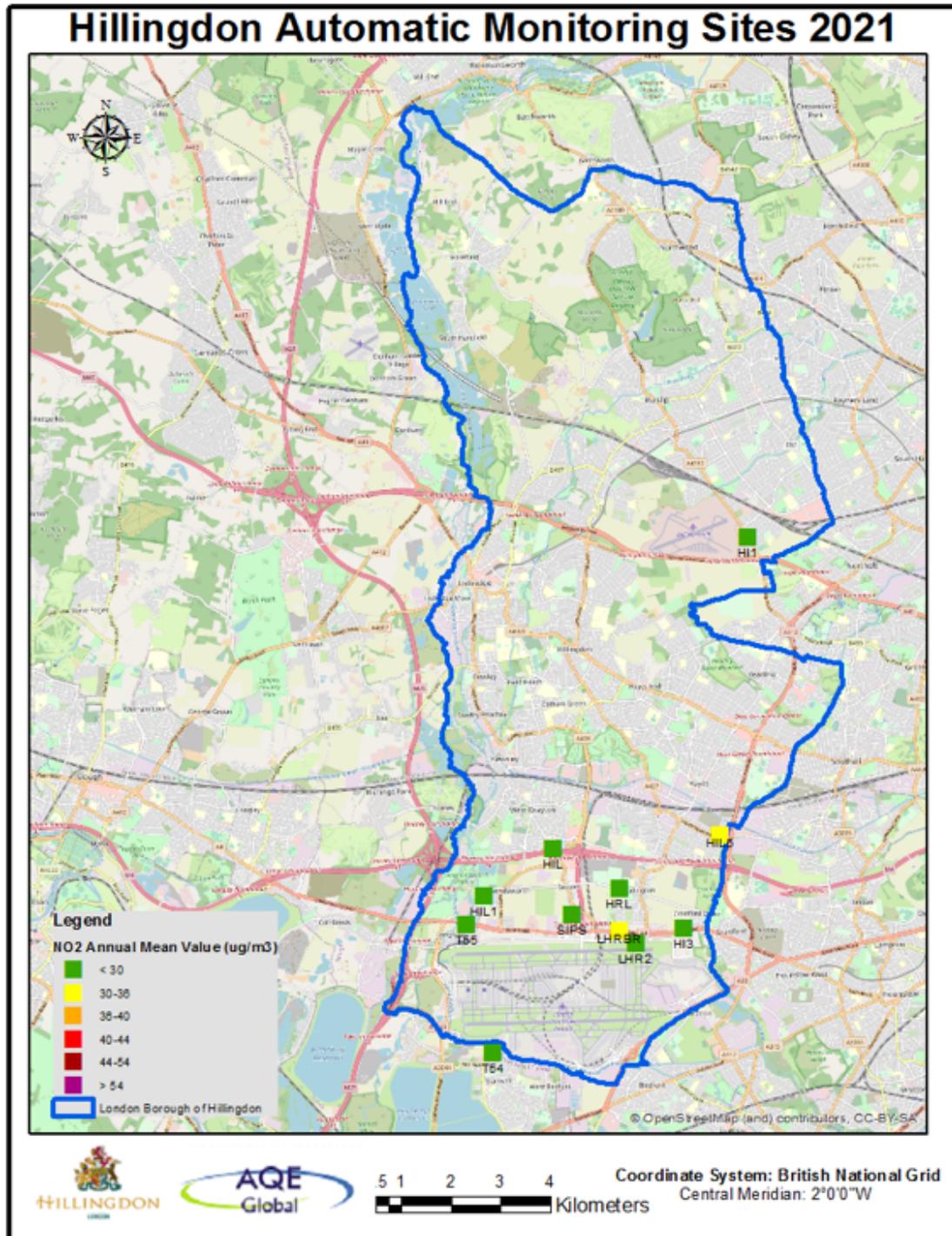


Figure 2. Location of the automatic monitoring sites in Hillingdon, nitrogen dioxide annual mean concentrations, NO<sub>2</sub> (ug/m<sup>3</sup>) 2021

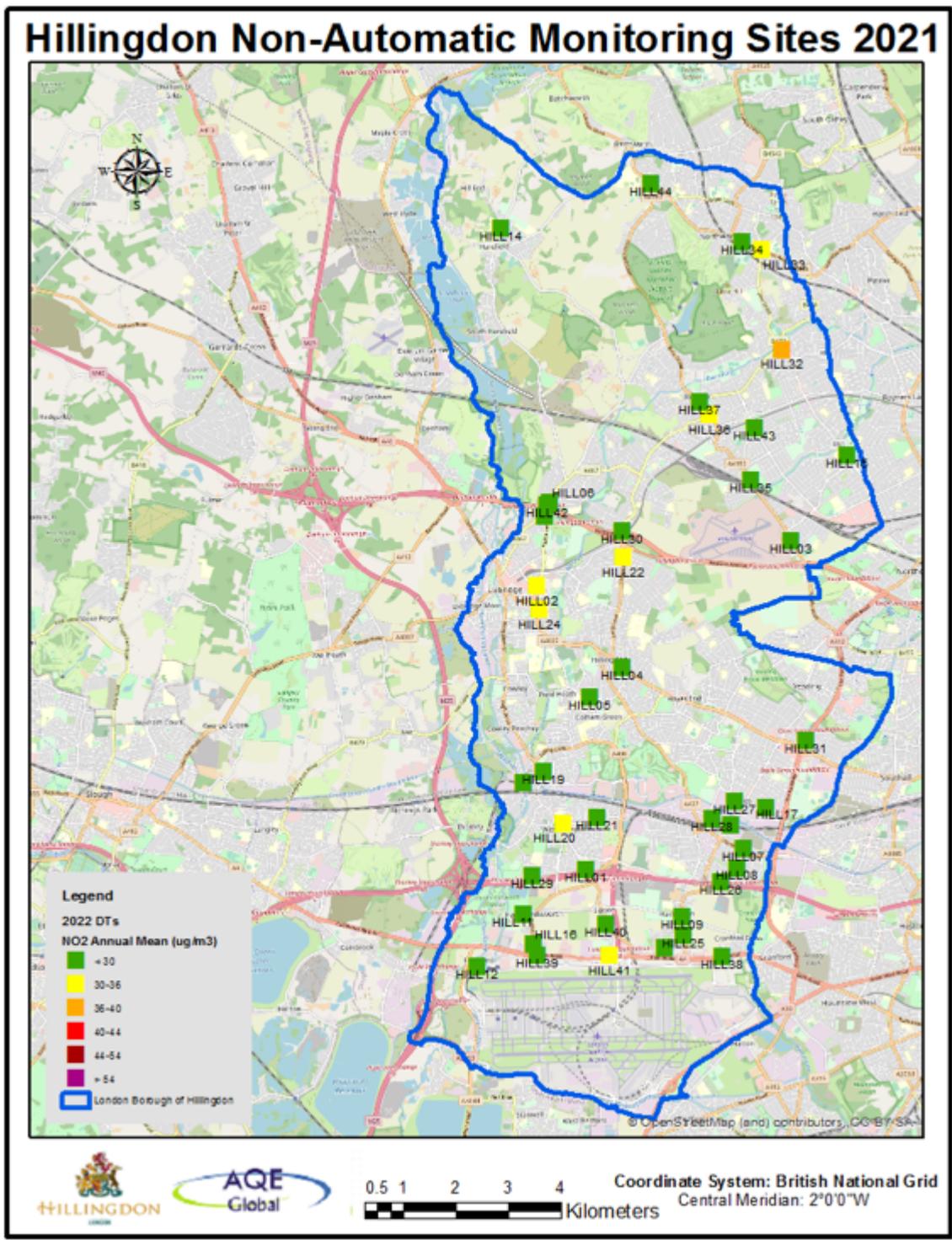


Figure 3. Location of non-automatic monitoring sites in Hillingdon, nitrogen dioxide annual mean concentrations, NO<sub>2</sub> (ug/m<sup>3</sup>) 2021.

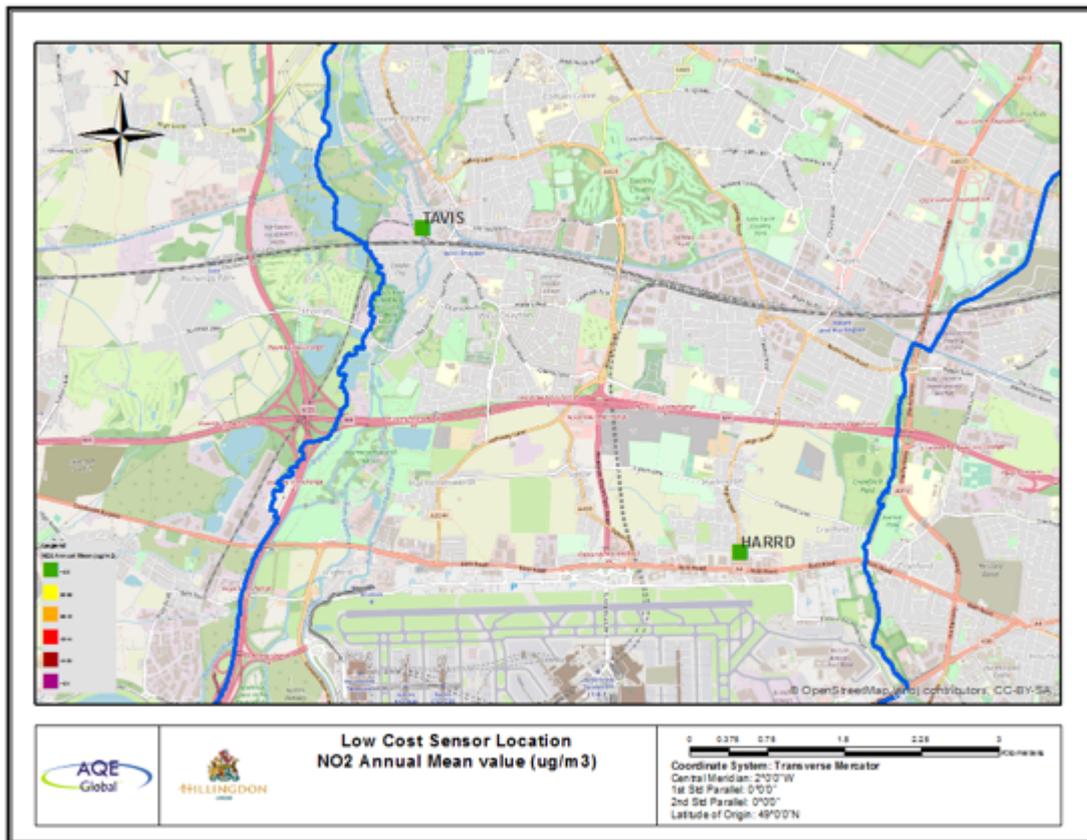


Figure 4. Location of low-cost sensor monitoring sites in Hillingdon, nitrogen dioxide annual mean concentrations, NO<sub>2</sub> (ug/m<sup>3</sup>) 2021.

**Table B. Details of automatic monitoring sites in Hillingdon for 2021.**

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 <sub>2</sub> , PM <sub>10</sub> , PM <sub>2.5</sub>	Chemiluminescence FIDAS
HIL	London Hillingdon	506951	178605	Urban background	Y	16m	2.5m (30m to M4)	1.5	NO <sub>2</sub> , O <sub>3</sub>	Chemiluminescence
HI1	Hillingdon 1 - South Ruislip	510857	184917	Roadside	Y	11m	2.5m	1.5	NO <sub>2</sub> , PM <sub>10</sub>	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 <sub>2</sub> , PM <sub>10</sub>	Chemiluminescence TEOM
HRL	London Harlington	508295	177800	Airport	Y	N/A	3m	1.5	CO, NO <sub>2</sub> , O <sub>3</sub> , PM <sub>10</sub> , PM <sub>2.5</sub>	Chemiluminescence TEOM FDMS
SIPS	Hillingdon Sipson	507325	177282	Urban background	Y	9m	2.5m	1.5	NO <sub>2</sub>	Chemiluminescence
HIL1	London Harmondsworth	505561	177661	Roadside	Y	20m	1m	1.5	NO <sub>2</sub> , PM <sub>10</sub>	Chemiluminescence BAM

London Borough of Hillingdon

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
HIL4	London Harmondsworth Osiris	505671	177605	Urban background	Y	1m	13m	1.5	TSP, PM <sub>10</sub> , PM <sub>2.5</sub> , PM <sub>1</sub>	Optical
T55	Heathrow Green Gates	505207	177072	Airport	Y	32m	N/A (background for the airport) (62m to airport boundary)	1.5	NO <sub>2</sub> , PM <sub>10</sub> , PM <sub>2.5</sub>	Chemiluminescence FIDAS
T54	Heathrow Oaks	505729	174496	Airport	Y	N/A	5m	1.5	NO <sub>2</sub> , PM <sub>10</sub> , PM <sub>2.5</sub>	Chemiluminescence FIDAS
HIL5	Hillingdon Hayes	510303	178882	Roadside	Y	15m	1m	1.5	NO <sub>2</sub> , PM <sub>10</sub>	Chemiluminescence BAM
LHRBR	Heathrow Bath Road	508279	176949	Roadside	Y	140m	6m	1.5	NO <sub>2</sub> , PM <sub>10</sub> , PM <sub>2.5</sub>	Chemiluminescence FIDAS

**Table C1. Details of non-automatic monitoring sites in Hillingdon in 2021.**

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	AURN Site, Keats Way, West Drayton	506926	178614	Roadside	Y	0	30m from M4	1.5	NO <sub>2</sub>	Y
HILL02	Uxbridge Day Nursery Park Road Uxbridge (on wire Fence)	505996	184058	Roadside	Y	0	4	1.5	NO <sub>2</sub>	N
HILL03	South Ruislip Monitoring Station West End Road	510821	184923	Roadside	Y	14	2.5	1.5	NO <sub>2</sub>	Y
HILL04	Hillingdon Primary School Uxbridge Road Hillingdon (on wire fence)	507617	182506	Roadside	Y	0	5	1.5	NO <sub>2</sub>	N
HILL05	Hillingdon Hospital Monitoring Station Colham Road (Near John Rich House on former junction to Pield Heath Road)	506989	181920	Roadside	Y	7	2	1.5	NO <sub>2</sub>	N
HILL06	Warren Road Ickenham Uxbridge (1 <sup>st</sup> lamp post on left)	506243	185653	Roadside	Y	1	23	1.5	NO <sub>2</sub>	N
HILL07	Harold Avenue (first lamp post on left)	509918	179015	Roadside	Y	4	30	1.5	NO <sub>2</sub>	N
HILL08	15 Phelps Way Hayes (lamp post outside of)	509798	178654	Roadside	Y	7	1.5	1.5	NO <sub>2</sub>	N
HILL09	25 Cranford Lane Harlington (lamp post on the left after car park)	508758	177718	Roadside	Y	7	1	1.5	NO <sub>2</sub>	N
HILL10	Brendan Close Harlington (1 <sup>st</sup> lamp post on the left)	508414	177125	Roadside	Y	0	1	1.5	NO <sub>2</sub>	N
HILL11	Harmondsworth Green Harmondsworth (lamp post outside nursery)	505736	177752	Roadside	Y	0	1	1.5	NO <sub>2</sub>	N
HILL12	Heathrow Close Longford (1 <sup>st</sup> lamp post on the right)	504851	176770	Roadside	Y	0	2	1.5	NO <sub>2</sub>	N
HILL13	31 Tavistock Road (on lamp-post outside house)	505731	180288	Roadside	Y	3	1	1.5	NO <sub>2</sub>	N
HILL14	Harefield Hospital Hill End Road (lamp-post outside entrance)	505299	190923	Background	N	0	5	1.5	NO <sub>2</sub>	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 3 <sup>rd</sup> Lamp-post south of school entrance (outside AQMA)	511889	186563	Roadside	N	8	1	1.5	NO <sub>2</sub>	N
HILL16	49 Zealand Avenue Lamp Post	505920	177188	Roadside	Y	8	13	1.5	NO <sub>2</sub>	N
HILL17	49 Silverdale Gardens, Hayes Lamp Post (8)	510361	179820	Background	Y	9	14	1.5	NO <sub>2</sub>	N
HILL18	Blyth Road, Hayes Lamp Post (4)	509683	179486	Roadside	Y	6	2	1.5	NO <sub>2</sub>	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 <sub>2</sub>	N
HILL20	1 Porters Way (corner with Kingston Lane) Lamp Post (1)	506503	179510	Background	Y	12	9	1.5	NO <sub>2</sub>	N
HILL21	5-7 Mulberry Crescent, West Drayton Lamp Post (18)	507141	179628	Background	Y	10	2	1.5	NO <sub>2</sub>	N
HILL22	340 Long Lane, Uxbridge Lamp Post (71)	507649	184611	Roadside	Y	18	2	1.5	NO <sub>2</sub>	N
HILL23	198 Harefield Road, Uxbridge Lamp Post (2)	506143	185395	Background	Y	9	33	1.5	NO <sub>2</sub>	N
HILL24	59 Hillingdon Road, Uxbridge Lamp Post (56)	506035	183611	Roadside	Y	12	1.5	1.5	NO <sub>2</sub>	N
HILL25	10 West End Lane, Harlington Lamp Post (2)	508773	177352	Background	Y	11	33	1.5	NO <sub>2</sub>	N
HILL26	R/O 130 Cleave Avenue, Hayes Lamp Post (33)	509499	178370	Roadside	Y	18	27	1.5	NO <sub>2</sub>	N
HILL27	Botwell House RC Primary School (Side-fence)	509755	179934	Roadside	Y	5	12	1.5	NO <sub>2</sub>	N
HILL28	Blyth Road 2 <sup>nd</sup> Tube, Hayes Lamp Post (17) (western most lamp post in front of 133 Enterprise House)	509328	179603	Roadside	Y	5	2	1.5	NO <sub>2</sub>	N
HILL29	Little Bentley, Road name sign corner of The Brambles and Little Bentley. UB7 7UJ	505906	178497	Background	Y	5	1.5	1.9	NO <sub>2</sub>	N
HILL30	Lamp-post down alley next to No 60a The Chase, Ickenham. Red	507612	185118	Background	Y	4	25	2.5	NO <sub>2</sub>	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	<i>Background</i>	Y	18	10	2.2	NO <sub>2</sub>	N
HILL32	<i>Roadside lamp-post, outside Georgian Lodge flats, Field End Road, Eastcote. HA52QL.</i>	510664	188599	<i>Background</i>	N	8.9	0.6	2.0	NO <sub>2</sub>	N
HILL33	<i>Kerbside lamppost outside Roundabout House, 34 Pinner Road. HA6 1BZ</i>	510284	190524	<i>Roadside</i>	N	7.0	0.5	2.2	NO <sub>2</sub>	N
HILL34	<i>Roadside lamp-post, pavement outside 177/179 Pinner Road. HA6 1DB.</i>	509900	190648	<i>Roadside</i>	N	4	2	2.2	NO <sub>2</sub>	N
HILL35	<i>Grey Lamp-post, West End Road, to the south of Sidmouth Drive, outside Aroma House Chinese. HA4 6LR</i>	510055	186080	<i>Roadside</i>	N	7	0.4	2.3	NO <sub>2</sub>	N
HILL36	<i>Lamp-post outside Vodafone, 69 High Street Ruislip. HA4 8JB</i>	509275	187340	<i>Roadside</i>	N	4	3	2.4	NO <sub>2</sub>	N
HILL37	<i>2/6 High St. Ruislip Lamp-post with Parking and church sign. HA4 7AW</i>	509097	187597	<i>Roadside</i>	N	3	1	2.0	NO <sub>2</sub>	N
HILL38	<i>Blue street light neat speed camera markings to west of Oxford Ave, Near AQMS. UB3 5HU</i>	509525	176949	<i>Roadside</i>	Y	6	1.2	2.2	NO <sub>2</sub>	N
HILL39	<i>Pinglestone Close/Bath Road A4. On cycle lane sign post. Park up Pinglestone close. UB7 0DJ.</i>	506000	176969	<i>Roadside</i>	Y	10	1.5	2.2	NO <sub>2</sub>	N
HILL40	<i>On zone sign at corner of Sipson Close/Sipson Rd. UB7 0JX.</i>	507316	177576	<i>Roadside</i>	Y	4	1.8	1.9	NO <sub>2</sub>	N
HILL41	<i>On the north side of the A4 near the houses by the junction with Sipson Way</i>	507369	176966	<i>Roadside</i>	Y	6	0.7	2.0	NO <sub>2</sub>	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)
HILL42	Telegraph pole next to big house/field on South corner of The Drive. UB10 8DA	506192	185614	Roadside	Y	5	4.5	2.3	NO <sub>2</sub>	N
HILL43	Lamp-post outside tattoo and Five star nail parlours, No 60, Victoria Road. HA4 0AH	510134	187086	Roadside	Y	3.5	1.5	2.4	NO <sub>2</sub>	N
HILL44	Hillingdon NorthWood Focus Area On a lamppost on Ducks Hill Road Corner of Rising Hill Close HA6 2NP	508162	191784	Roadside	N	10	1.5	2.2	NO <sub>2</sub>	N

**Table C2. Details of Automatic Low-Cost Monitoring Sites in Hillingdon in 2021.**

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 <sub>2</sub> , PM <sub>2.5</sub>	laser scattering (PM2.5)
HARRD b)	485A High Street, Harlington, UB3 5DL	508824	177081	Roadside	Y	3.3m	1.3	2.5	NO <sub>2</sub> , O <sub>3</sub>	laser scattering (PM2.5)

(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

## 2.4 Comparison of Monitoring Results with Air Quality Objectives

Trends in the monitored pollution data for the Borough are presented in this section. For annual reporting, the results presented are after adjustments for “annualisation” and for distance to a location of relevant public exposure (wherever applicable). Details of adjustments are provided in Appendix A. Tabulated monitoring data are shown in Section 2.5.

### 2.4.1 Nitrogen dioxide

Figure 5 and 6 indicate that significantly lower annual means for NO<sub>2</sub> were observed in 2020 compared to 2019 due to COVID-19 restrictions on travel and that these were maintained to a large extent across most monitoring sites during 2021.

Also notable are:

- An increase of 4.9 µg.m<sup>-3</sup> from 2020 to 2021 at the diffusion tube site HILL32 located at Field End Road, Eastcote, outside of the AQMA;
- An increase of 4.4 µg.m<sup>-3</sup> at the diffusion tube HILL24 located at Hillingdon Road, Uxbridge;
- An increase of 3.5 µg.m<sup>-3</sup> at the diffusion tube HILL36 located at High Street Ruislip, also outside the AQMA.

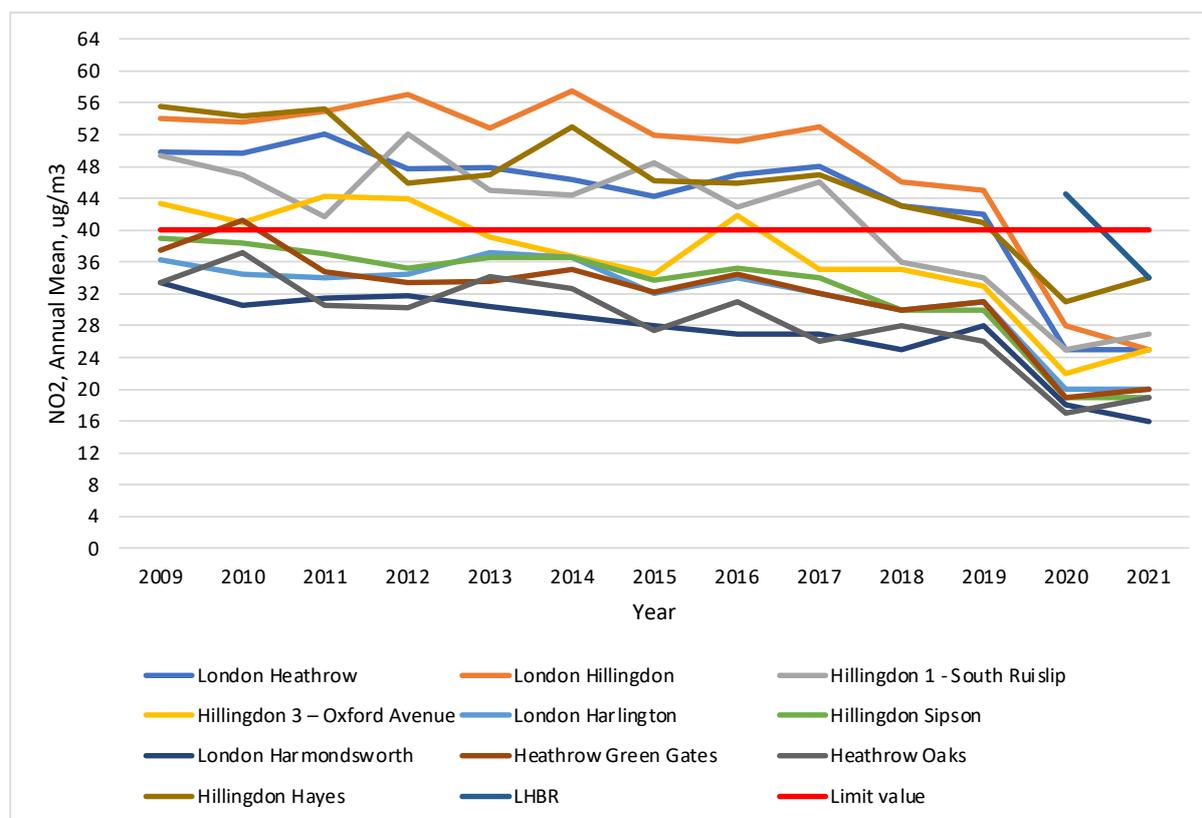


Figure 5. Annual mean NO<sub>2</sub> concentrations measured at the automatic monitoring stations, 2009-2021, showing data for each site in the Borough. Units: µg.m<sup>-3</sup>.

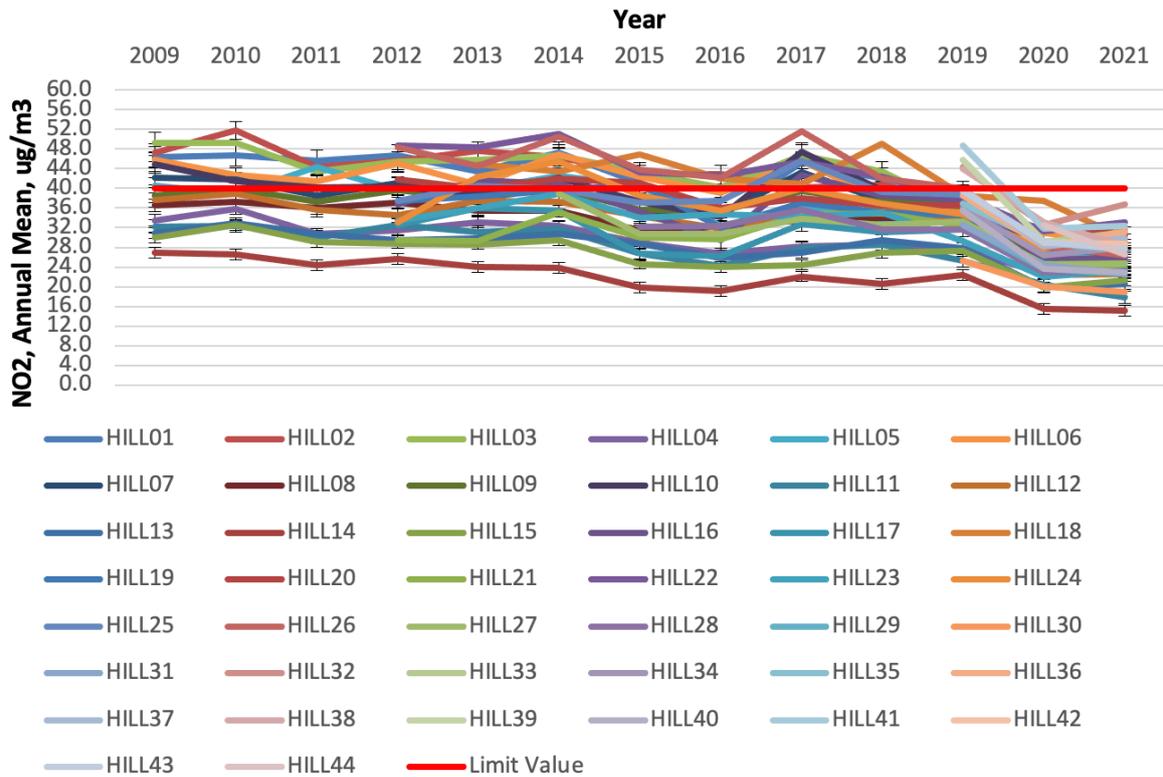


Figure 6. Annual mean NO<sub>2</sub> concentrations measured at the diffusion tube locations, 2009-2021, showing data for each site in the Borough. Units: µg.m<sup>-3</sup>.

### 2.4.2 Particulate matter

Regarding particulate matter concentrations (PM<sub>10</sub> and PM<sub>2.5</sub>), with the exception of site HIL5 located in Hayes where an increase of 1 µg.m<sup>-3</sup> was observed for PM<sub>10</sub>, an average reduction of 1ug/m<sup>3</sup> (Figures 7 and 8) is observed across sites, with some locations showing a stabilisation in concentration levels in relation to 2020. It is noted that no continuous monitoring site from the standard LBH network exceeds the WHO/London Plan PM<sub>2.5</sub> target value of 10 µg.m<sup>-3</sup> across the Borough. As noted below however, the Low-Cost sensor at Tavistock Road reports a PM<sub>2.5</sub> annual mean value of 12.2 µg.m<sup>-3</sup>.

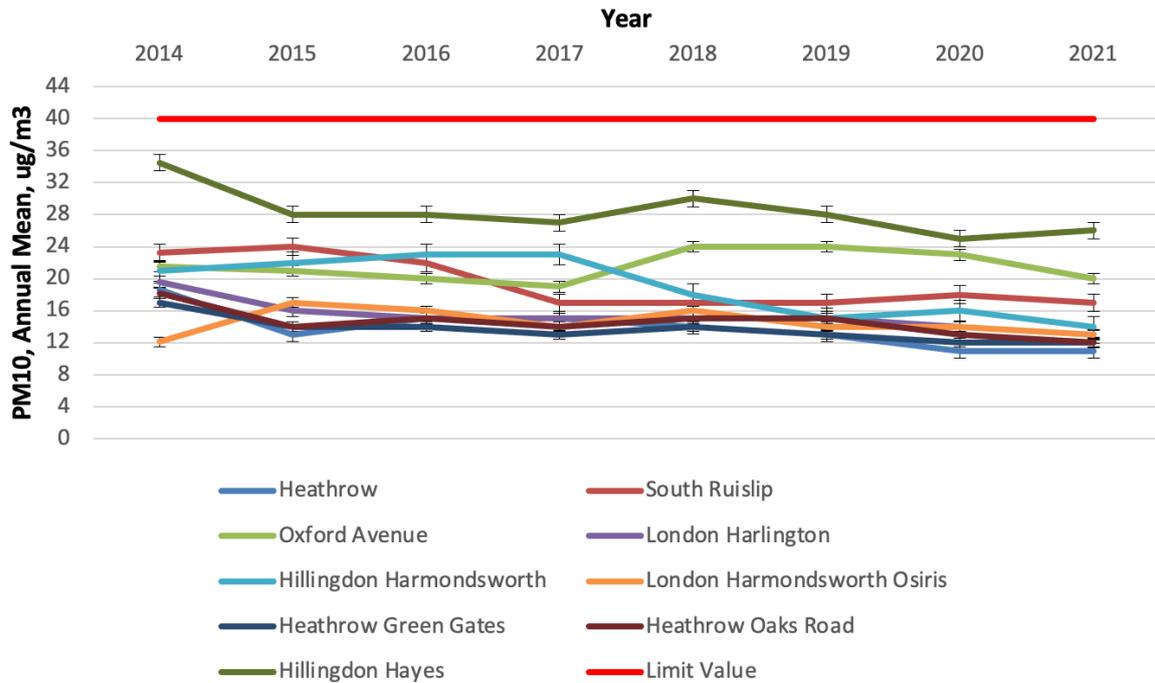


Figure 7. Annual mean PM<sub>10</sub> concentrations measured at the automatic monitoring stations, 2014-2021, showing data for each site in the Borough. Units:  $\mu\text{g}\cdot\text{m}^{-3}$ .

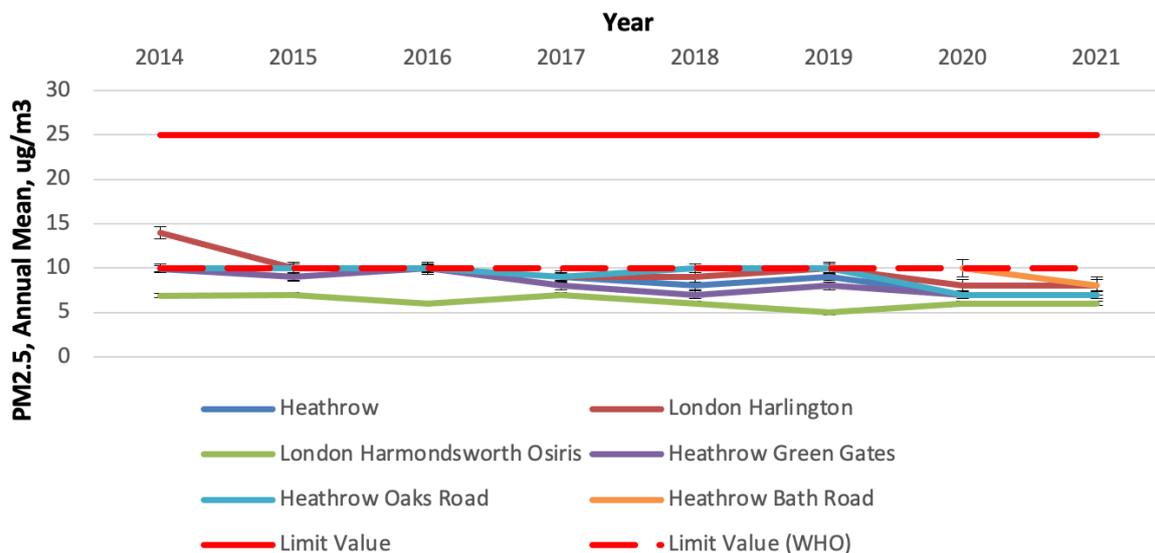
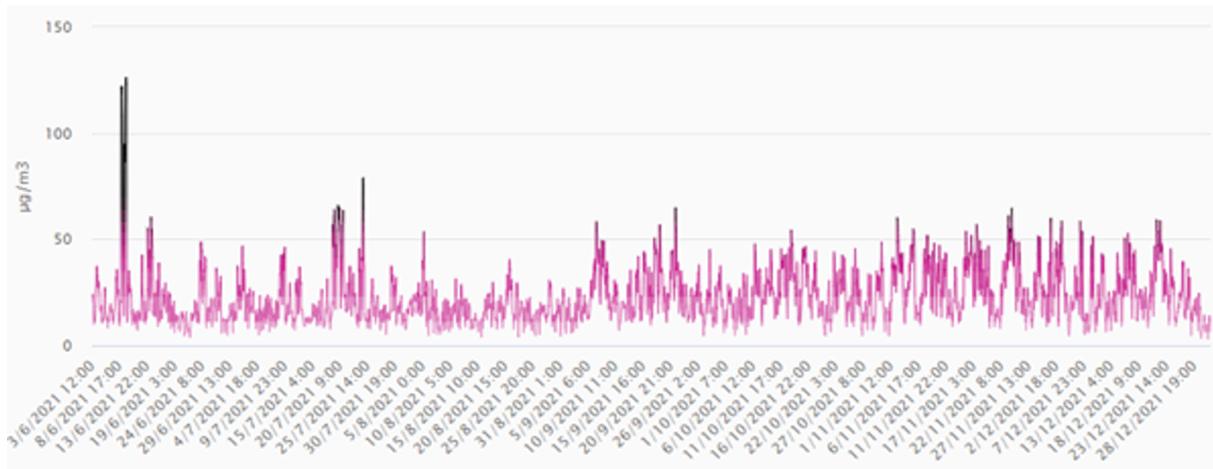


Figure 8. Annual mean PM<sub>2.5</sub> concentrations measured at the automatic monitoring stations, 2014-2021, showing data for each site in the Borough. Units:  $\mu\text{g}\cdot\text{m}^{-3}$ .

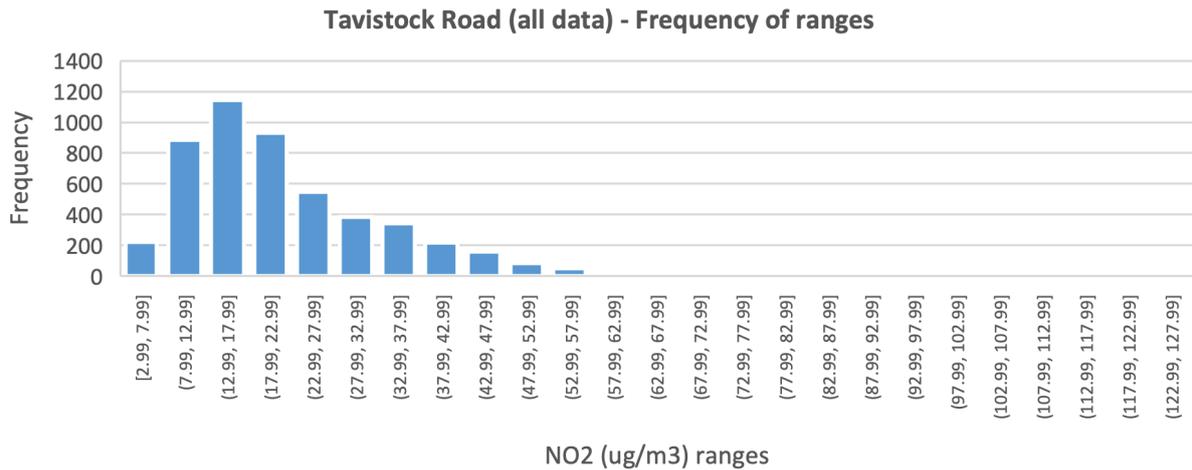
### 2.4.3 Results from low-cost sensors: Tavistock Road

Figure 9 indicates hourly mean NO<sub>2</sub> concentrations measured at the low-cost sensor at Tavistock Road, for the period from the 3<sup>rd</sup> of June to the 31<sup>st</sup> December 2021. As summarised in Figure 10, the most frequent hourly mean NO<sub>2</sub> concentrations during this monitoring period fall within the range of 8-23  $\mu\text{g}\cdot\text{m}^{-3}$  at this location, with the most frequent range being

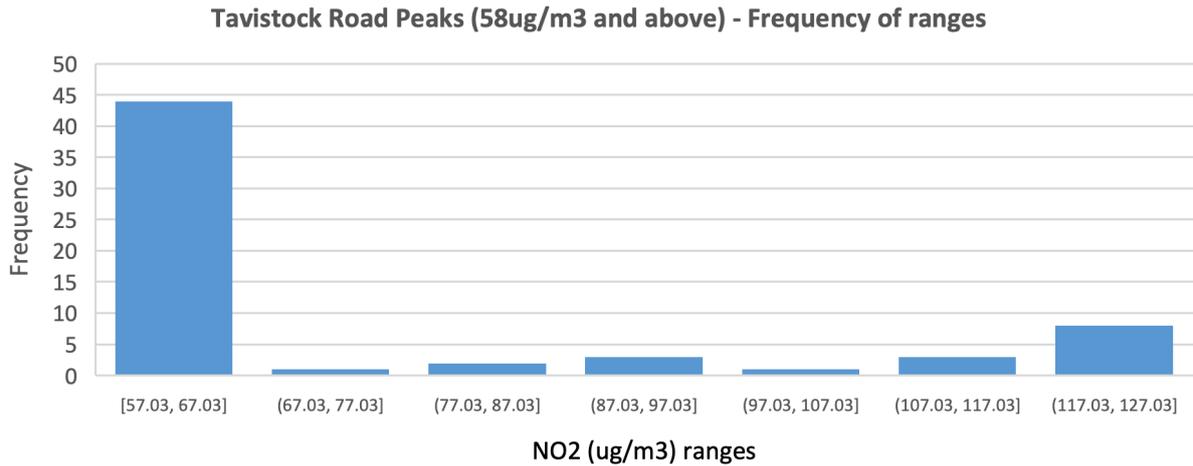
13-18  $\mu\text{g}\cdot\text{m}^{-3}$ . Figure 11 presents the frequency of ranges of hourly mean  $\text{NO}_2$  peak concentrations, considering the highest values within the 99th percentile ( $58 \mu\text{g}\cdot\text{m}^{-3}$  and above). When looking at the hourly peak concentration distribution, it is observed that the most frequent values are found in the range of 57 to 67  $\mu\text{g}\cdot\text{m}^{-3}$ , with another cluster observed between concentrations 117 and 127  $\mu\text{g}\cdot\text{m}^{-3}$ . This sensor was deployed to respond to residents' concerns regarding heavy traffic associated with local businesses activities. Therefore, further analysis of the peaks of pollution and times of occurrence is being undertaken.



**Figure 9. Hourly mean  $\text{NO}_2$  concentrations measured by the low-cost sensor at Tavistock Road, 3<sup>rd</sup> June to 31<sup>st</sup> December 2021. Units:  $\mu\text{g}\cdot\text{m}^{-3}$ .**

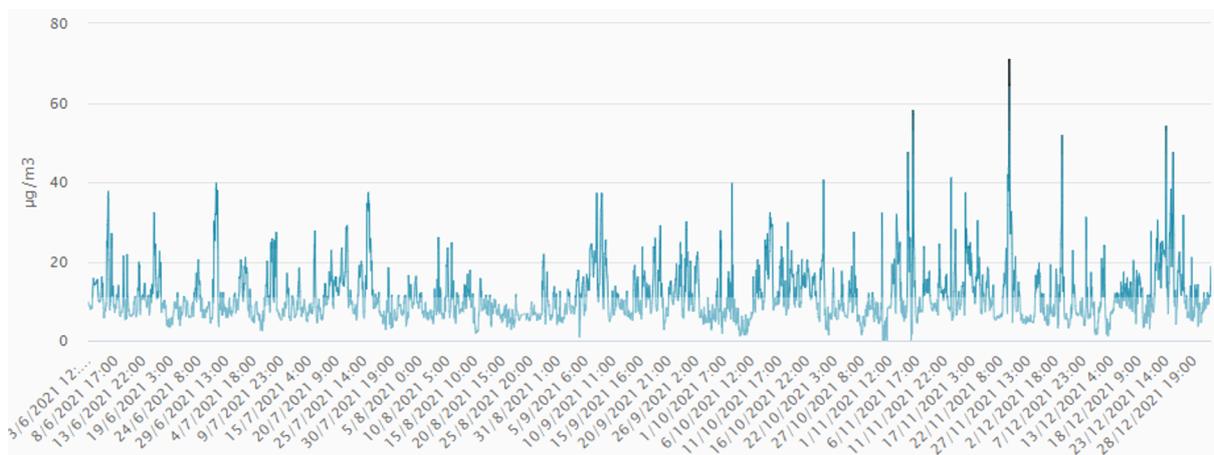


**Figure 10. Frequency of ranges of hourly mean  $\text{NO}_2$  concentrations measured at the low-cost sensor at Tavistock Road, 3<sup>rd</sup> June to 31<sup>st</sup> December 2021.**

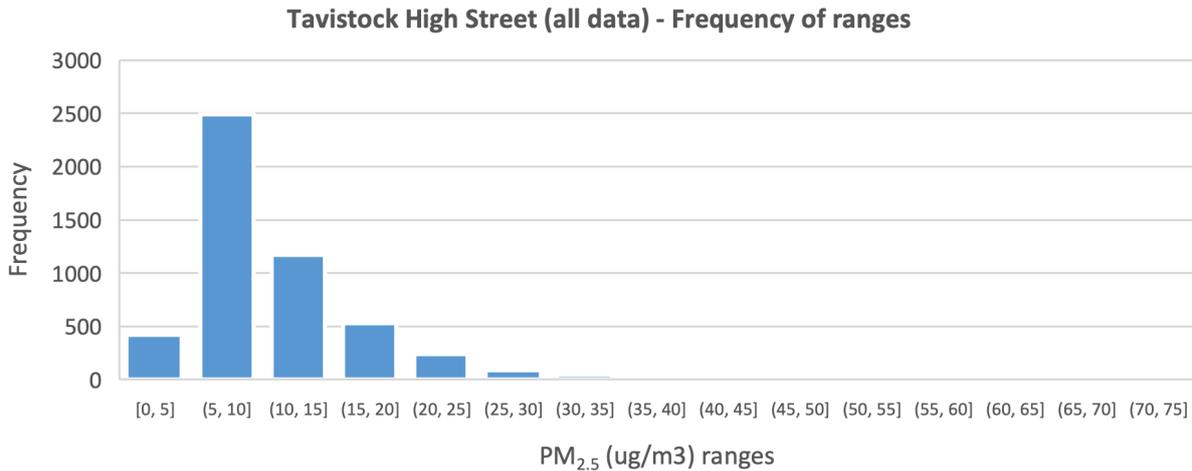


**Figure 11. Frequency of ranges of peak hourly mean NO<sub>2</sub> concentrations 58 µg.m<sup>-3</sup> and above (99<sup>th</sup> percentile) measured at the low-cost sensor at Tavistock Road, 3<sup>rd</sup> June to 31<sup>st</sup> December 2021.**

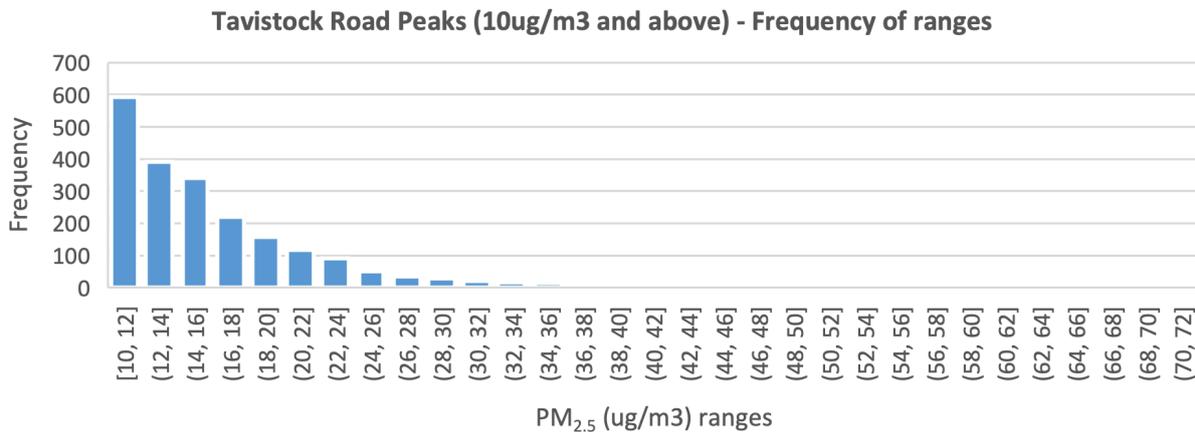
A similar analysis was also undertaken for pollutant PM<sub>2.5</sub>. Figure 13 presents hourly mean PM<sub>2.5</sub> concentrations measured at the low-cost sensor at Tavistock Road for the period from the 3<sup>rd</sup> June to the 31<sup>st</sup> December 2021. Figure 14 shows that the most frequent concentrations monitored during this period range from 5 to 15 µg.m<sup>-3</sup> with a peak on 5-10 µg.m<sup>-3</sup>. An analysis was undertaken on hourly values higher than 10 µg.m<sup>-3</sup> to understand what concentrations would most contribute to the annual mean value of 12.2 µg.m<sup>-3</sup> registered at this site. Figure 15 presents the frequency of ranges of hourly mean PM<sub>2.5</sub> peak concentrations which are 10 µg.m<sup>-3</sup> (60<sup>th</sup> percentile) and above measured at this site. The most frequent concentrations are found in the 25 to 30 µg.m<sup>-3</sup> interval, with a maximum value of 71.1 µg.m<sup>-3</sup> registered during the monitoring period. Analysis of the frequency of timing of occurrences of PM<sub>2.5</sub> peak concentrations is under review.



**Figure 12. Hourly mean PM<sub>2.5</sub> concentrations measured at the low-cost sensor at Tavistock Road, 3<sup>rd</sup> June to 31<sup>st</sup> December 2021. Units: µg.m<sup>-3</sup>.**



**Figure 13. Frequency of ranges of hourly mean PM<sub>2.5</sub> concentrations measured at the low-cost sensor at Tavistock Road, 3<sup>rd</sup> June to 31<sup>st</sup> December 2021.**



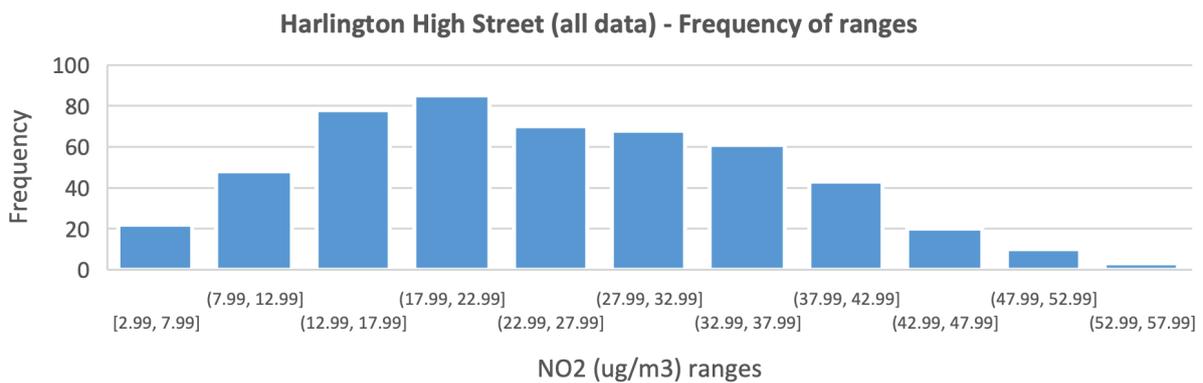
**Figure 14. Frequency of ranges of peak hourly mean PM<sub>2.5</sub> concentrations 10 µg.m<sup>-3</sup> and above measured at the low-cost sensor at Tavistock Road, 3<sup>rd</sup> June to 31<sup>st</sup> December 2021.**

#### 2.4.4 Results from low-cost sensors: Harlington High Street

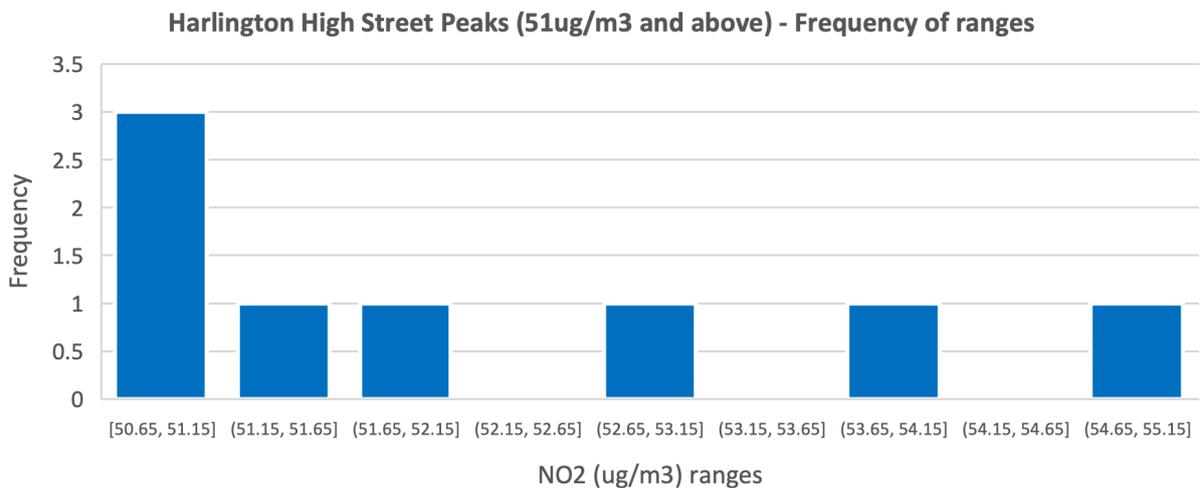
Figure 17 indicates hourly mean NO<sub>2</sub> concentrations measured at the low-cost sensor deployed at Harlington High Street, for the period 8<sup>th</sup> to 31<sup>st</sup> December 2021. As summarised in Figure 18, the most frequent ranges of hourly mean NO<sub>2</sub> concentrations measured at this location are 13 to 28 µg.m<sup>-3</sup> with the most frequent class of monitored concentrations being 18 to 23 µg.m<sup>-3</sup>. Studying the 99<sup>th</sup> percentile of concentrations for this pollutant at this monitoring location (51 µg.m<sup>-3</sup> and above, Figure 19) the most frequent range of concentrations is 50 to 52 µg.m<sup>-3</sup> with another cluster observed at 53 to 54.8 µg.m<sup>-3</sup>, 54.8 being the maximum value monitored for this pollutant during the 8<sup>th</sup> to 31<sup>st</sup> December 2021 period.



**Figure 15. Hourly mean NO<sub>2</sub> concentrations measured at the low-cost sensor at Harlington High Street, 8<sup>th</sup> to 31<sup>st</sup> December 2021. Units: µg.m<sup>-3</sup>.**



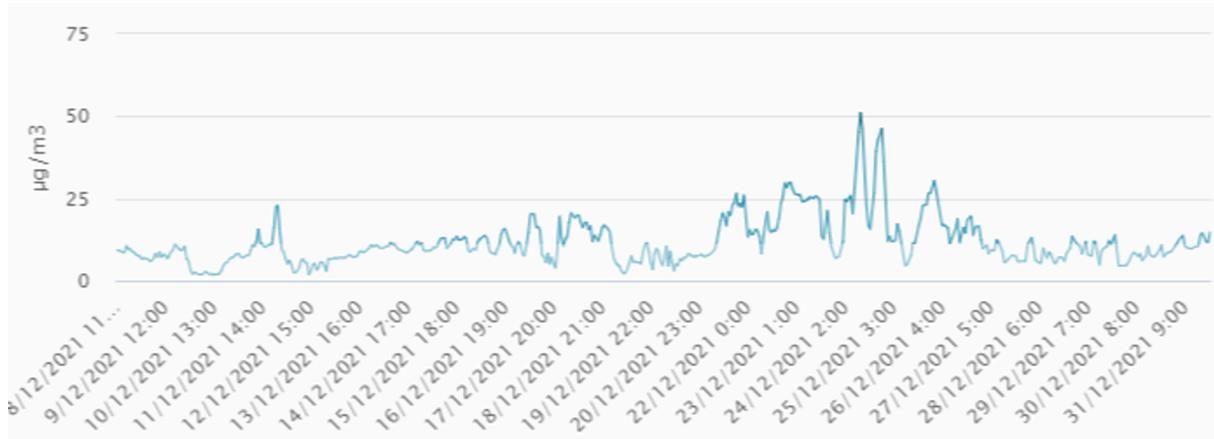
**Figure 16. Frequency of ranges of hourly mean NO<sub>2</sub> concentrations measured at the low-cost sensor at Harlington High Street, 8<sup>th</sup> to 31<sup>st</sup> December 2021.**



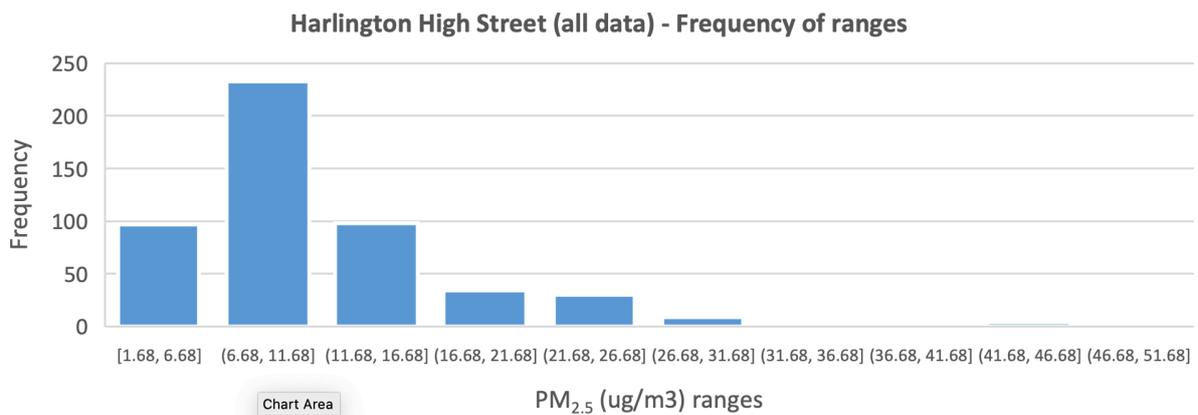
**Figure 17. Frequency of ranges of peak hourly mean NO<sub>2</sub> concentrations 51 µg.m<sup>-3</sup> and above (99<sup>th</sup> percentile) measured at the low-cost sensor at Harlington High Street, 8<sup>th</sup> to 31<sup>st</sup> December 2021.**

Figure 21 presents the hourly mean PM<sub>2.5</sub> concentrations measured at the low-cost sensor at Harlington High Street for the period 8<sup>th</sup> to 31<sup>st</sup> December 2021. Figure 22 shows that the majority of hourly mean PM<sub>2.5</sub> concentrations fall in the range of 6 to 12 µg.m<sup>-3</sup> (the maximum

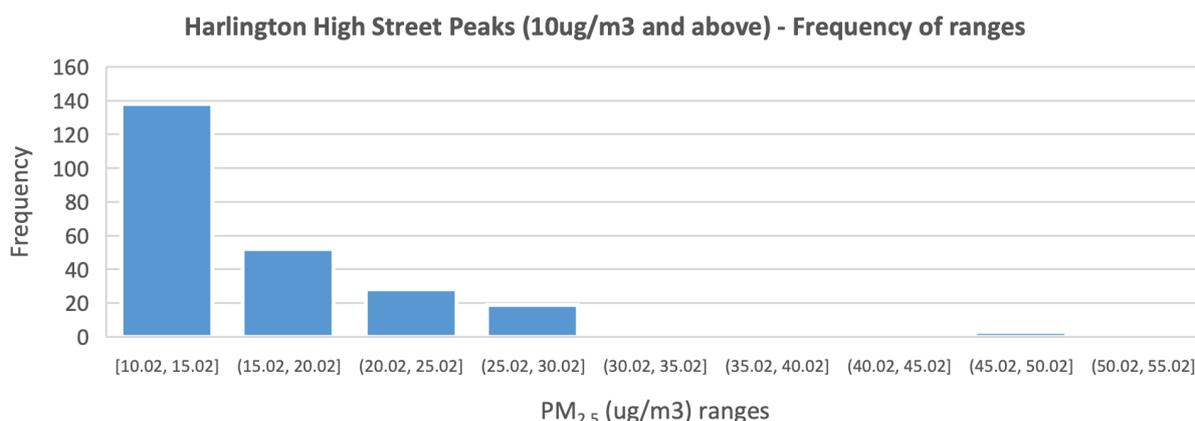
value monitored is  $51.1 \mu\text{g}\cdot\text{m}^{-3}$ ). An analysis of the distribution of hourly monitored values above  $10 \mu\text{g}\cdot\text{m}^{-3}$  was undertaken. Figure 23 presents the frequency of ranges of peak hourly mean  $\text{PM}_{2.5}$  concentrations of  $10 \mu\text{g}\cdot\text{m}^{-3}$  and above measured. It can be observed that the most frequent values ranged from 10 to  $15 \mu\text{g}\cdot\text{m}^{-3}$  at this location. A more detailed analysis of the hourly data collected during the monitoring period has indicated that the maximum values (40 to 51.1) have been registered on the 24<sup>th</sup> December 2021. Analysis of the frequency of time of occurrences of peak  $\text{PM}_{2.5}$  concentrations is currently underway.



**Figure 18. Hourly mean  $\text{PM}_{2.5}$  concentrations measured at the low-cost sensor at Harlington High Street, 8<sup>th</sup> to 31<sup>st</sup> December 2021. Units:  $\mu\text{g}\cdot\text{m}^{-3}$ .**



**Figure 19. Frequency of ranges of hourly mean  $\text{PM}_{2.5}$  concentrations measured at the low-cost sensor at Tavistock Road, 8<sup>th</sup> to 31<sup>st</sup> December 2021.**



**Figure 20. Frequency of ranges of peak hourly mean PM<sub>2.5</sub> concentrations 10 µg.m<sup>-3</sup> and above measured at the low-cost sensor at Harlington High Street, 8<sup>th</sup> to 31<sup>st</sup> December 2021.**

## 2.5 Tabulated monitoring data

The following tables provide data for the last seven years for each monitoring site:

- Tables D1. Annual Mean NO<sub>2</sub> Ratified and Bias-adjusted Monitoring Concentrations (µg.m<sup>-3</sup>) at automatic monitoring sites.
- Tables D2. Annual Mean NO<sub>2</sub> Ratified and Bias-adjusted Monitoring Concentrations (µg.m<sup>-3</sup>) at diffusion tube sites.
- Table D3. Annual Mean NO<sub>2</sub> Monitoring Concentrations at Low-Cost Sensor sites (Tavistock Road and Harlington High Street) where Low-Cost Sensors were deployed in 2021 (µg.m<sup>-3</sup>).
- Table E. NO<sub>2</sub> Automatic Monitor Results: Comparison with 1-hour Mean Objective.
- Table F1. Annual Mean PM<sub>10</sub> Automatic Monitoring Results (µg.m<sup>-3</sup>).
- Table F2. Annual Mean PM<sub>2.5</sub> Monitoring Concentrations at Low-Cost Sensor sites (Tavistock Road and Harlington High Street) where Low-Cost Sensors were deployed in 2021 (µg.m<sup>-3</sup>).
- Table G. PM<sub>10</sub> Automatic Monitor Results: Comparison with 24-Hour Mean Objective.
- Table H. Annual Mean PM<sub>2.5</sub> Automatic Monitoring Results (µg.m<sup>-3</sup>).

Analysis of all Tables (D1 to H) indicates that there are no locations except Tavistock Road Low cost sensor (that registered a PM<sub>2.5</sub> annual mean value of 12.2 µg.m<sup>-3</sup>), where the limit values and objectives for NO<sub>2</sub> and PM were exceeded in 2021. It is worth noting, however, that annual mean concentrations of 36 µg.m<sup>-3</sup> and above are of concern due to acknowledged inaccuracies in both monitoring and modelling approaches to assess air quality, with monitoring site HILL32 at Field End Road, Eastcote (outside of the AQMA) registering 37.4 µg.m<sup>-3</sup> in 2021.

**Table D1. Annual mean NO<sub>2</sub> ratified monitoring results (µg m<sup>-3</sup>) for the automatic monitoring sites in Hillingdon.**

Site ID	Site Name	Valid data capture for monitoring period % <sup>a</sup>	Valid data capture, 2021, % <sup>b</sup>	Annual Mean Concentration (µg.m <sup>-3</sup> )						
				2015	2016	2017	2018	2019	2020	2021
LHR2	London Heathrow	96.78	96.78	<b>44.2</b>	<b>47.0</b>	<b>48</b>	<b>43</b>	<b>42</b>	25	25
HIL	London Hillingdon	99.51	99.51	<b>51.9</b>	<b>51.2</b>	<b>53</b>	<b>46</b>	<b>45</b>	28	25
HI1	Hillingdon 1 - South Ruislip	98.96	98.96	<b>48.4</b>	<b>42.9</b>	<b>46</b>	36 <sup>d</sup>	34	25	27
HI3	Hillingdon 3 – Oxford Avenue	99.6	99.6	34.5	<b>41.9</b>	35	35	33	22	25
HRL	London Harlington	99.20	99.20	32.0	34.0	32	30	31	20	20
SIPS	Hillingdon Sipson	95.83	95.83	33.7	35.2	34	30	30	19	19
HIL1	London Harmondsworth	97.84	97.84	28.0	27.0	27	25	28	18	16
T55	Heathrow Green Gates	99.62	99.62	32.2	34.4	32	30	31	19	20
T54	Heathrow Oaks	98.31	98.31	27.4	31.0	26	28	26	17	19
HIL5	Hillingdon Hayes	99.69	99.69	<b>46.2</b>	<b>45.9</b>	<b>47</b>	<b>43</b>	<b>41</b>	31	34
LHRBR	London Heathrow Bath Road <sup>c)</sup>	48.16	48.16	-	-	-	-	-	<b>44.5<sup>d</sup></b> (39.5)	34

**Notes:**

The annual mean concentrations are presented as µg m<sup>-3</sup>.

Exceedance of the NO<sub>2</sub> annual mean AQO of 40 µg m<sup>-3</sup> 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%. This procedure was applied to LHRBR only (Please see Appendix A for annualization details).

NO<sub>2</sub> annual means in excess of 60 µg m<sup>-3</sup>, indicating a potential exceedance of the NO<sub>2</sub> hourly mean AQS objective are shown in **bold** and underlined (no such cases are present in 2021)

Means for diffusion tubes have been corrected for bias.

Results have been distance corrected where applicable (no such cases are present in 2021).

<sup>a</sup> data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

<sup>b</sup> 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%)

<sup>c</sup> 22/06/2021 13:00:00 start of monitoring data

<sup>d</sup> Only three months of data due to power supply interruption

**Table D2. Annual mean NO<sub>2</sub> ratified and bias-adjusted monitoring results (µg m<sup>-3</sup>) diffusion tubes for diffusion tubes in Hillingdon.**

Site ID	Site Name	Valid data capture for 2021, % <sup>a</sup>	Valid data capture, 2021, % <sup>b</sup>	Annual Mean Concentration (µg.m <sup>-3</sup> ) <sup>c</sup>						
				2015 <sup>c</sup>	2016 <sup>c</sup>	2017 <sup>c</sup>	2018 <sup>c</sup>	2019 <sup>c</sup>	2020 <sup>c</sup>	2021 <sup>c</sup>
HILL01	Co-located with London Hillingdon CM	100.0	100.0	41.1	34.3	45.3	42	38.6	25.6	25.7
HILL02	Uxbridge Day Nursery, Park Road	83.3	83.3	42.8	42.8	40.1	40.7	36.9	28.9	30.9
HILL03	Co-located with South Ruislip CM	100.0	100.0	43.2	40.2	46.7	43.4	35.5	26.7 <sup>d</sup>	27.3
HILL04	Hillingdon Primary School	100.0	100.0	28.9	26.8	28.2	28.5	27.8	22.6	23.3
HILL05	Colham Rd/Pield Heath Road opposite Hillingdon Hospital	100.0	100.0	40.6	32.3	36.1	33.4	34.1	27.4	25.4
HILL06	Warren Road Ickenham	100.0	100.0	42.3	39	45.6	37.6	35.0	30.9	29.7
HILL07	Harold Avenue, Hayes	100.0	100.0	35.7	34.7	43.3	37.7	36.9	28.1	28.8
HILL08	Phelps Way Hayes	100.0	100.0	31.4	32.1	33.4	33.9	33.9	24.1	25.3
HILL09	Cranford Lane Harlington	100.0	100.0	35.6	35.5	39.4	37.2	36.4	23.8	24.5
HILL10	Brendan Close Harlington	100.0	100.0	37.2	34.2	47.5	39.6	39.7	25.2	26.4
HILL11	Harmondsworth Green	83.3	83.3	26.8	24.2	27.8	28.5	25.3	20.3	18.2
HILL12	Heathrow Close Longford	100.0	100.0	34.4	31.9	34	36	33.0	22.4	23.0
HILL13	Tavistock Road	91.7	91.7	28.7	25.8	26.9	29.5	27.9	19.9	21.0
HILL14	Harefield Hospital Hill End Road (Outside AQMA)	100.0	100.0	19.8	19.1	22.1	20.5	22.4	15.5	15.4
HILL15	Field End School (Outside of AQMA)	100.0	100.0	24.6	24	24.4	26.9	27.2	19.9	21.6
HILL16	Zealand Avenue, Sipson	100.0	100.0	35.2	29.4	42.7	38.6	37.7	25.4	26.4
HILL17	Silverdale Gardens, Hayes	100.0	100.0	26.7	26.1	32.7	31	31.6	24.7	24.2
HILL18	Blyth Road, Hayes	91.7	91.7	41.9	40.9	49	38.5	37.4	29.9	27.6
HILL19	Yiewsley High Street	100.0	100.0	40.9	32	37	35	34.6	27.1	27.6
HILL20	Porters Way, West Drayton	100.0	100.0	41.1	35.9	37.9	36.6	36.6	31.6	31.5
HILL21	Mulberry Crescent, West Drayton	100.0	100.0	30	29.6	34.7	34.9	32.3	23.4	24.1
HILL22	Long Lane, Uxbridge	100.0	100.0	43.3	42.5	45.5	42.4	38.3	31.3	33.7
HILL23	Harefield Road, Uxbridge	91.7	91.7	34	34.8	34.2	35.1	29.3	22.1	23.8
HILL24	Hillingdon Road, Uxbridge	100.0	100.0	38.5	35.5	40	36.9	34.7	27.6	32.0
HILL25	West End Lane, Harlington	100.0	100.0	37	37.4	45.6	39.3	38.7	28.3	28.5
HILL26	R/O Cleave Avenue, Hayes	100.0	100.0	43.7	42.1	51.5	42	40.0	28.2	26.8

Site ID	Site Name	Valid data capture for 2021, % <sup>a</sup>	Valid data capture, 2021, % <sup>b</sup>	Annual Mean Concentration ( $\mu\text{g.m}^{-3}$ ) <sup>c</sup>						
				2015 <sup>c</sup>	2016 <sup>c</sup>	2017 <sup>c</sup>	2018 <sup>c</sup>	2019 <sup>c</sup>	2020 <sup>c</sup>	2021 <sup>c</sup>
HILL27	Botwell House Primary School	100.0	100.0	30.7	30.8	33.8	32.5	33.2	24.5	25.3
HILL28	Blyth Road, Hayes	83.3	83.3	32.1	32.3	35.7	31.7	31.7	23.0	23.5
HILL29	Little Benty, Road, West Drayton	100.0	100.0	-	-	-	-	32.6	23.7	23.0
HILL30	The Chase, Ickenham	91.7	91.7	-	-	-	-	25.3	20.0	19.2
HILL31	Dorchester Waye, Hayes	100.0	100.0	-	-	-	-	32.5	24.3	23.2
HILL32	Field End Road, Eastcote. (Outside of AQMA)	100.0	100.0	-	-	-	-	<b>44.4</b>	32.5	37.4
HILL33	34 Pinner Road	100.0	100.0	-	-	-	-	39.5	29.0	31.8
HILL34	177/179 Pinner Road	100.0	100.0	-	-	-	-	35.9	26.3	28.4
HILL35	West End Road, Ruislip (Outside of AQMA)	100.0	100.0	-	-	-	-	36.9	28.9	28.0
HILL36	High Street Ruislip (Outside of AQMA)	91.7	91.7	-	-	-	-	38.5	28.1	31.6
HILL37	2/6 High St. Ruislip (Outside of AQMA)	91.7	91.7	-	-	-	-	39.9	28.1	30.4
HILL38	Oxford Ave, Near Oxford Avenue CM	100.0	100.0	-	-	-	-	<b>44.0</b>	33.0	28.9
HILL39	Pinglestone Close/Bath Road A4	100.0	100.0	-	-	-	-	<b>45.7</b>	29.2	29.1
HILL40	Sipson Close/Sipson Rd.	91.7	91.7	-	-	-	-	35.5	23.6	23.4
HILL41	A4 by junction with Sipson Way	100.0	100.0	-	-	-	-	<b>48.7</b>	31.8	32.9
HILL42	The Drive, Ickenham	91.7	91.7	-	-	-	-	39.6	28.9	29.3
HILL43	Victoria Road, Ruislip (Outside of AQMA)	100	100	-	-	-	-	39.4	29.1	28.2
HILL44	Hillingdon NorthWood Focus Area (Outside of AQMA)	100	100	-	-	-	-	-	-	27.0

Notes:

Exceedance of the NO<sub>2</sub> annual mean AQO of 40  $\mu\text{g m}^{-3}$  are shown in **bold**.

NO<sub>2</sub> annual means in excess of 60  $\mu\text{g m}^{-3}$ , indicating a potential exceedance of the NO<sub>2</sub> hourly mean AQS objective are shown in **bold** and underlined (no such cases are present in 2021)

<sup>a</sup> data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

<sup>b</sup> 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%)

<sup>c</sup> Means were "annualised" in accordance with LLAQM Technical Guidance, when valid data capture is less than 75%.

<sup>d</sup> This is a triplicate measurement.

**Table D3. NO<sub>2</sub> Low-Cost Sensors: Annual mean NO<sub>2</sub> ratified and annualised monitoring results (µg m<sup>-3</sup>) for 2021.**

Site ID	Site Name	Valid data capture for monitoring period % <sup>a</sup>	Valid data capture, 2021, % <sup>b</sup>	Annual Mean Concentration raw (µg.m <sup>-3</sup> )	Annual Mean Concentration Annualised (µg.m <sup>-3</sup> )
				2021	2021
TAVIS	in front of 69 Tavistock Rd, West Drayton UB7 7QT	57.8	57.8	22.4	24.1
HARRD	485A High Street, Harlington, UB3 5DL	10.4	10.4	25.4	- c)

**Notes**

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%. This procedure was applied to TAVIS only (Please see Appendix A for annualization details).

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

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

(c) This sensor has been working for less than 25% of the year and therefore no annualised results are reported

**Table E. NO<sub>2</sub> automatic monitoring results for Hillingdon: Comparison with 1-hour mean objective, showing the number of 1-hour means where NO<sub>2</sub> > 200 µg m<sup>-3</sup>.**

Site ID	Site Name	Valid data capture for monitoring period % <sup>a</sup>	Valid data capture 2021 % <sup>b</sup>	Number of Hourly Means > 200 µg.m <sup>-3</sup>						
				2015	2016	2017	2018	2019	2020	2021
LHR2	London Heathrow	96.78	96.78	2	8	12	0	1	0	0
HIL	London Hillingdon	99.51	99.51	1	2	0	0	0	0	0
HI1	Hillingdon 1 - South Ruislip	98.96	98.96	0	2	2	0	0	0	0
HI3	Hillingdon 3 – Oxford Avenue	99.6	99.6	2	0	1	0	0	0	0
HRL	London Harlington	99.20	99.20	0	0	0	0	0	0	0
SIPS	Hillingdon Sipson	95.83	95.83	3	0	0	0	0	0	0
HIL1	London Harmondsworth	97.84	97.84	1	0	0	0	0	0	0
T55	Heathrow Green Gates	99.62	99.62	0	0	0	0	0	0	0
T54	Heathrow Oaks	98.31	98.31	0	0	0	0	0	0	0
HIL5	Hillingdon Hayes	99.69	99.69	2	1	12	0	0	0	0
LHRBR	Heathrow Bath Road	48.16	48.16	-	-	-	-	-	0	0

Notes: Exceedance of the NO<sub>2</sub> short term AQO of 200 µg m<sup>-3</sup> over the permitted 18 days per year or where the 99.8th percentile exceeds 200 µg m<sup>-3</sup> 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 F1. Annual Mean PM<sub>10</sub> Automatic Monitoring Results (µg.m<sup>-3</sup>).**

Site ID	Site name	Valid data capture for monitoring period % <sup>a</sup>	Valid data capture 2020 % <sup>b</sup>	Annual Mean Concentration (µgm <sup>-3</sup> )						
				2015	2016	2017	2018	2019	2020	2021
LHR2	Heathrow	96.59	96.59	13	15	15	14	13	11	11
HI1	South Ruislip	95.03	95.03	24	22	17	17	17	18	17
HI3	Oxford Avenue	97.92	97.92	21	20	19	24	24	23	20
HRL	London Harlington	99.35	99.35	16	15	15	15	15	14	13
HIL1	Hillingdon Harmondsworth	99.68	99.68	22	23	23	18	15	16	14
HIL4	London Harmondsworth Osiris	90.38	90.38	17	16	14	16	14	15	13
T55	Heathrow Green Gates	99.89	99.89	14	14	13	14	13	12	12
T54	Heathrow Oaks Road	99.84	99.84	14	15	14	15	15	13	12
HIL5	Hillingdon Hayes	96.83	96.83	28	28	27	30	28	25	26
LHRBR	Heathrow Bath Road	47.91	47.91	-	-	-	-	-	14	14

Notes:

The annual mean concentrations are presented as µg m<sup>-3</sup>.

Exceedance of the PM<sub>10</sub> annual mean AQO of 40 µg m<sup>-3</sup> 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%. Measured concentrations at site LHRBR have been annualised (Please see Appendix A for annualization details).

<sup>a</sup> data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

<sup>b</sup> 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 F2. PM<sub>2.5</sub> Low-Cost Sensors: Annual mean ratified and annualised monitoring results (µg m<sup>-3</sup>) for 2021.**

Site ID	Site Name	Valid data capture for monitoring period % <sup>a</sup>	Valid data capture, 2021, % <sup>b</sup>	Annual Mean Concentration raw (µg.m <sup>-3</sup> )	Annual Mean Concentration Annualised (µg.m <sup>-3</sup> )
				2021	2021
TAVIS	in front of 69 Tavistock Rd, West Drayton UB7 7QT	57.8	57.8	10.8	12.2
HARRD	485A High Street, Harlington, UB3 5DL	10.4	10.4	11.4	- c)

Notes:

The annual mean concentrations are presented as µg m<sup>-3</sup>.

Exceedance of the PM<sub>2.5</sub> annual mean AQO of 25 µgm<sup>-3</sup> 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%. This procedure was applied to TAVIS only (Please see Appendix A for annualization details).

<sup>a</sup> data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

<sup>b</sup> 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%)

<sup>c</sup> This sensor has been working for less that 25% of the year and therefore no annualised results are reported

**Table G. PM<sub>10</sub> Automatic Monitoring Results: Comparison with 24-Hour Mean Objective, Number of PM<sub>10</sub> 24-Hour Means > 50 µg m<sup>-3</sup>.**

Site ID	Site name	Valid data capture for monitoring period % <sup>a</sup>	Valid data capture 2020 % <sup>b</sup>	Number of Daily Means > 50 µgm <sup>-3</sup>						
				2015	2016	2017	2018	2019	2020	2021
LHR2	Heathrow	96.59	96.59	3	3	7	1	6	0	0
HI1	South Ruislip	95.03	95.03	3	9	6	1	3	1	0
HI3	Oxford Avenue	97.92	97.92	3	11	4	2	4	6	0
HRL	London Harlington	99.35	99.35	3	5	3	1	6	1	0
HIL1	Hillingdon Harmondsworth	99.68	99.68	4	4	6	1	0	0	0
HIL4	London Harmondsworth Osiris	90.38	90.38	17	0	1	0	1	0	0
T55	Heathrow Green Gates	99.89	99.89	3	3	3	1	4	0	0
T54	Heathrow Oaks Road	99.84	99.84	5	2	4	1	4	0	0
HIL5	Hillingdon Hayes	96.83	96.83	14	32	26	22	25	16	25
LHRBR	Heathrow Bath Road	47.91	47.91	-	-	-	-	-	0	0

Notes:

Exceedance of the PM<sub>10</sub> short term AQO of 50 µg m<sup>-3</sup> over the permitted 35 days per year or where the 90.4th percentile exceeds 50 µg m<sup>-3</sup> 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.

<sup>a</sup> data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

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

**Table H. Annual Mean PM<sub>2.5</sub> Automatic Monitoring Results (µg.m<sup>-3</sup>).**

Site ID	Site Name	Valid data capture for monitoring period % <sup>a</sup>	Valid data capture 2020 % <sup>b</sup>	Annual Mean Concentration (µgm <sup>-3</sup> )						
				2015	2016	2017	2018	2019	2020	2021
LHR2	Heathrow	99.84	99.84	9.0	10	9	8	9	7	7
HRL	London Harlington	98.83	98.83	10.0	10	9	9	10	8	8
HIL4	London Harmondsworth Osiris	55.77	55.77	7.0	6	7	6	5	7	6
T55	Heathrow Green Gates	99.93	99.93	9.0	10	8	7	8	7	7
T54	Heathrow Oaks Road	99.51	99.51	10.0	10	9	10	10	7	7
LHRBR	Heathrow Bath Road	22.65	22.65	-	-	-	-	-	11	8

Notes:

The annual mean concentrations are presented as µg m<sup>-3</sup>.

Exceedance of the PM<sub>2.5</sub> annual mean AQO of 25 µgm<sup>-3</sup> 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%. Measured concentrations at site LHRBR have been annualised (Please see Appendix A for annualization details)

<sup>a</sup> data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

<sup>b</sup> 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%)

## 2.6 HS2 Monitoring Data

Construction work on HS2 has been intensified in 2021 within Hillingdon. According to the master plan of works, the route starts at London Euston and tunnels for 13 miles to surface into Hillingdon at South Ruislip.

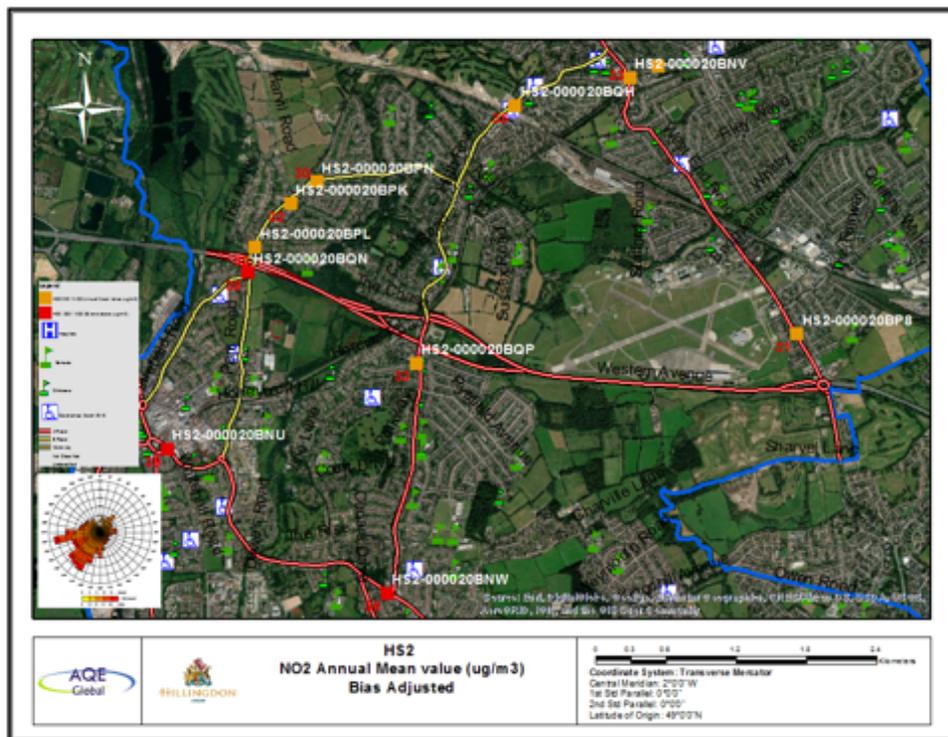
HS2 has established several diffusion tubes for NO<sub>2</sub> along the lorry routes serving the construction activities, eleven of which fall within LBH. Details for these sites are shown in Table I1 and bias adjusted (using 2021 national bias adjustment for 20% TEA in water for roadside locations, 0.90) monitoring results for 2021 are presented in Table I2 and Figures 24 to 28. 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; HS2-000020BQN Lamp post on Park Road) register annual mean values above 36 µg.m<sup>-3</sup>.

**Table I1. Details of HS2 Diffusion Tubes in Hillingdon in 2021.**

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 signpost at junction with Hillingdon Road	Roadside	505492	183926	2.5	Roadside not affected by scheme
HS2-000020BNV	High Street signpost 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 signpost 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	Signpost on Long Lane	Roadside	507614	184663	2.1	Predicted significant effect

**Table I2. Diffusion tube results for NO<sub>2</sub> from the locations in Table I1 2021, bias adjusted. Units: ug.m<sup>-3</sup>.**

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



**Figure 21. Annual mean NO<sub>2</sub> concentrations measured at HS2 diffusion tube locations, 2021, showing data for each site in the Borough. Units: µg.m<sup>-3</sup>.**



Figure 22. Annual mean NO<sub>2</sub> concentration measured at HS2 diffusion tube HS2-000020BNW, 2021, showing detail LAEI 2019 data for the site. Units:  $\mu\text{g}\cdot\text{m}^{-3}$ .

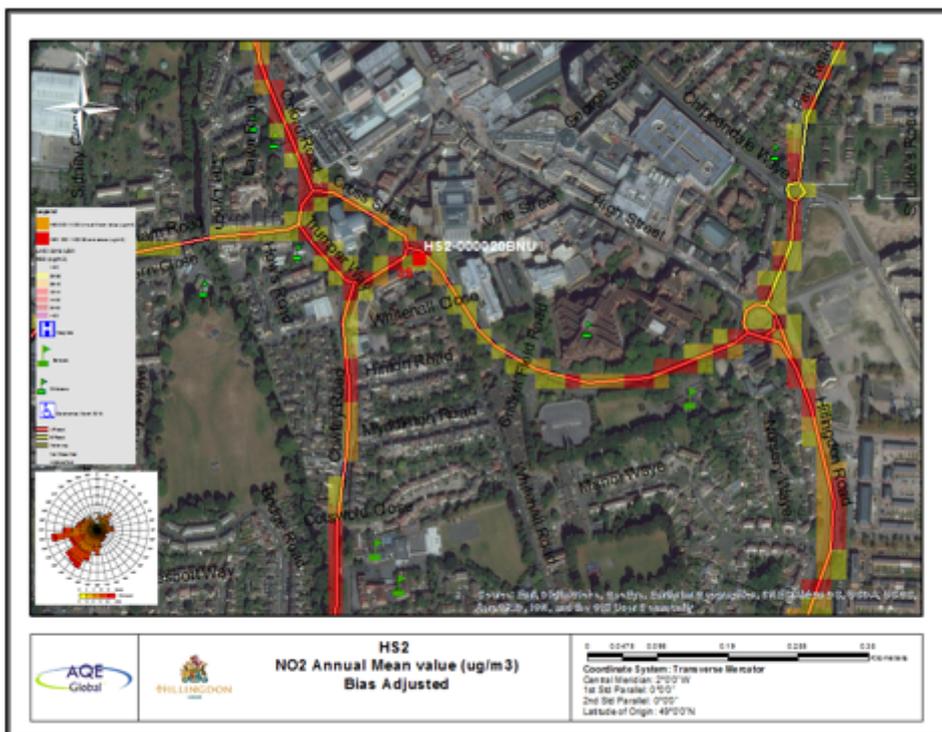


Figure 23. Annual mean NO<sub>2</sub> concentration measured at HS2 diffusion tube HS2-000020BNU, 2021, showing detail LAEI 2019 data for the site. Units:  $\mu\text{g}\cdot\text{m}^{-3}$ .

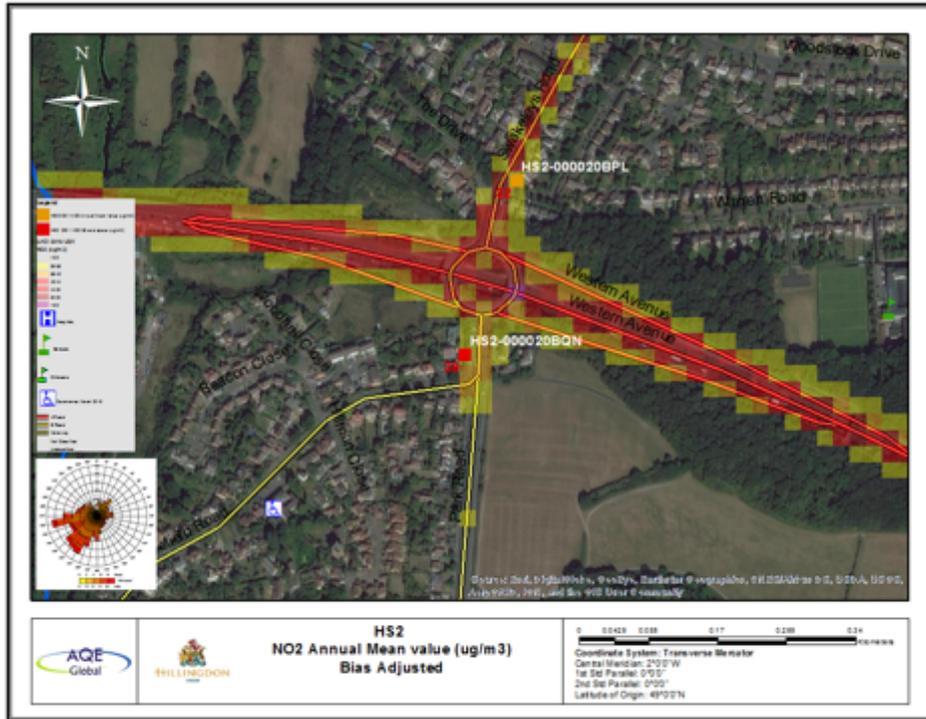


Figure 24. Annual mean NO<sub>2</sub> concentration measured at HS2 diffusion tube HS2-000020BQN, 2021, showing detail LAEI 2019 data for the site. Units:  $\mu\text{g}\cdot\text{m}^{-3}$ .

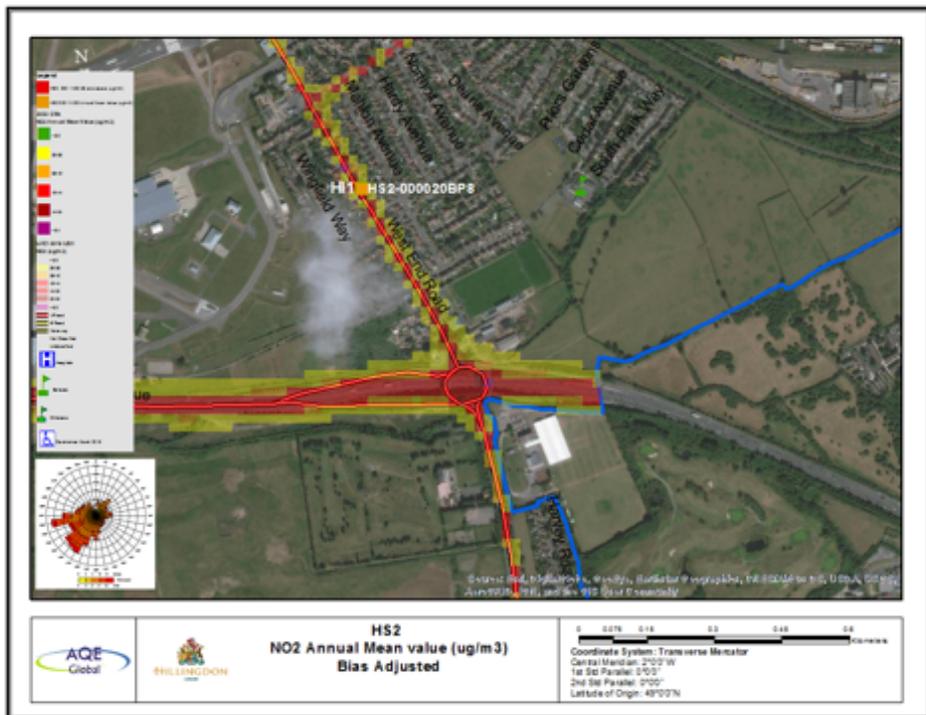


Figure 25. Annual mean NO<sub>2</sub> concentration measured at HS2 diffusion tube HS2-000020BP8, 2021, showing detail LAEI 2019 data for the site. Units:  $\mu\text{g}\cdot\text{m}^{-3}$ .

## **3 Actions to Improve Air Quality**

### **3.1 ASR Highlights**

#### **3.1.1 Additional air quality monitoring**

The Council were provided with two free low-cost sensors by the GLA as part of the Breathe London Network. The locations have specific air quality concerns and were approved by the GLA. One is located in Tavistock Road in West Drayton. This road leads into the West Drayton/Yiewsley AQ Focus Area and is of concern to residents because of pollution caused by the nature and frequency of the traffic using the road associated with commercial operations in the local area. The second is located on the High Street in the Harlington Air Quality Focus Area. This is a key route for traffic between the M4, the A4 and Heathrow Airport.

Heathrow Airport Ltd has installed an additional automatic monitoring station along the Bath Road. The data capture for 2021 is not yet sufficient to be able to report formally.

#### **3.1.2 Idling Vehicles**

The Council continues to take an active participation in the issue of idling vehicles. In 2021-2022, 521 fines for idling vehicles were issued across the borough.

All schools were encouraged to participate in the No idling at Schools campaign virtually at times when covid restrictions prevented in-person workshops. In February 2022, when restrictions were lifted, a further 4 schools participated fully in the events:

- Harmondsworth Primary
- Rosedale Primary
- Bishop Winnington Ingram and
- Ryefield Primary.

Each workshop event was delivered in person and reached between 60-90 pupils, and the outside engagement events involved around 10 selected pupils supervised by Council and Project staff.

The Mayor's Engines Off campaign has been supported by a communications campaign via the Council website, Hillingdon People magazine (delivered to all households) and social media. Councils were asked to commit to train their fleet drivers using prepared presentations on the influence that driver behaviour can have to reduce emissions. The Council Fleet Manager has disseminated the presentations to cover the 300+ fleet drivers working with the Council. Whilst this has raised the awareness of the issue it has not been possible to quantify reductions in emissions. Technologies such as automatic engine cut offs and the intelligent systems used to monitor the use of vehicles may provide a more quantifiable approach. The Council's refuse vehicles include monitoring of idling periods as a performance indicator for drivers.

### **3.1.3 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.

### **3.1.4 Schools**

A number of activities are being carried out with schools:

- **Green Barriers at schools project**

This project started in the previous years of the Action Plan and is due for final completion in 2022. It will ensure that all relevant schools (ie. those with playing areas currently open to emissions from the nearby roads) have been identified and pollution barriers installed. The project has involved works at 49 schools in the Borough.

- **Air quality raising awareness package for schools**

Following a successful trial, funding has been secured to rollout a series of workshops for schools. These will raise awareness of air quality and promote more sustainable travel to school. A total of 16-20 schools will be targeted. Delivery is expected in the summer term of 2022.

- **Sustainable travel to school**

From one school street at the start of the Action Plan there are now a further five school streets currently under consultation for implementation in the next year. Having paused during the Covid pandemic, pedestrian and bike training is again up and running with over 8,000 pupils receiving pedestrian training and over 1,000 receiving bike training.

### **3.1.5 Healthy Streets Improvements**

Town Centre projects include screening planting to protect public exposure of pedestrians from road emissions and include additional trees wherever is viable.

Funding was secured for improving green infrastructure in Hayes. This project was in an area of poor air quality where the footfall is likely to be high.

### **3.1.6 Achieving modal shift**

Travel plans secured as a condition on new developments can help raise the sustainable mode share of a local area. The WestTrans group monitor the progress of travel plans across the West London boroughs and quantify the shift achieved to sustainable modes of transport. For example, the Gatefold Building in Hayes is a residential unit comprised of 119 homes. The Travel Plan Coordinator and staff promoted active travel to/ from the site by means of the following measures:

- Highlighting the bike storage and supporting cycling;

- New tenancy surveys to encourage alternative modes of transport; and
- Digital central hub promoting community activities, including physical activities

The Year 5 Travel Monitoring Report concludes the monitoring requirement for the Gatefold Building site. Results obtained since the baseline surveys in the Original Travel Plan approved in 2017 show that most residents (64%) travel using Public Transport, while single occupancy car trips decreased from 41% in Year 3 to 22% in Year 5 (2022).

### **3.1.7 Pollution barriers at other sensitive locations**

Work has started to extend pollution barrier work to other vulnerable locations in the Borough where recreational playgrounds are close to and exposed to emissions from busy roads. Eleven locations have been identified and scoping works completed for implementation in 2022/2023.

### **3.1.8 TfL Green Healthy Fund bid – North Hyde Road**

The North Hyde Road Air Quality Focus Area Study outlined several initiatives in a programme of work aimed at improving air quality. The measures included installation of green infrastructure, cycling and walking infrastructure, rain gardens at key flooding areas, protecting public exposure to air pollution and the project was broken down into series of costed phases. In February 2022 a bid for just under £500k was put forward to TfL. If successful, this will help implement improvement measures in one of the poorest air quality areas in the Borough.

### **3.1.9 Harlington Air Quality Focus Area Study**

The project will examine existing conditions and identify a package of measures to improve local air quality in this Focus Area. It will identify measures for immediate implementation as well as those for the medium and long terms to ensure the benefits are locked in. It will also provide the evidence base for a funding bid via the Transport Team, to be made in conjunction with the Heathrow and Hounslow, to Highways England to secure funding for cycling infrastructure. Hillingdon is seeking £250,000 for a cycle lane between Heathrow and Hayes via Harlington High Street. This would have the benefit of providing a sustainable means of transport for airport workers as well as for the community.

### **3.1.10 Public Health initiatives**

- **Smoke Control areas - changes to the type of fuel that can be used**

The burning of solid fuel, including wood, releases ultra-fine particulates which are harmful to health. A communication campaign was run in 2021 alerting residents and businesses to these impacts and a forthcoming change in legislation. Public health colleagues helped shape the communications campaign with a specific emphasis on the negative health impacts of woodburning.

From the 1st May 2021, only dried wood with less than 20% moisture may be sold for use and it must be properly labelled and certified with the Ready to Burn logo to be an authorised

fuel. Trading Standards officers will be enforcing this legislation in terms of point of sale in Hillingdon.

- **AirText**

A communication campaign in 2021 reminded residents and workers in Hillingdon about this free pollution alert service. A subscriber is given advance warning of pollution episodes, alongside medical advice for subscribers who may have existing respiratory conditions. The GLA send automatic pollution forecasts to schools, care homes and GP surgeries across London.

There is a London working group looking at the issue of air quality alerts, whether the wording is sufficient, whether the alerts are getting to the people that need them especially when sent to organisations such as GPs, care homes, schools, as opposed to individuals. There is currently no mechanism to assess to whether any action is taken following the receipt of the alert.

- **Air pollution and Public Health**

Following the Mayor's Clean Air and Health Summit in February 2022, a series of key actions are being taken forward. These should help ensure that health professionals are sufficiently trained in the health impacts of air pollution and be in a more informed position to disseminate the information to those most vulnerable in their care.

## **3.2 Specific questions from the GLA**

The GLA's template for reporting this year includes specific questions regarding the Council's fleet of vehicles, the NRMM (non-road mobile machinery) enforcement and air quality alerts.

### **3.2.1 London Borough of Hillingdon's Fleet**

There are 284 vehicles in the Council fleet. This includes 3 fully electric pool cars and 5 hybrid pool cars. 5 fully electric small size vans have been ordered and delivery is expected at the end of July. 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 2022/23 is shown below.

- 95 x Vans
- 3 x 26T Refuse Collection Vehicles
- 2 x 7.5T Refuse Collection Vehicles
- 1 x 15T Road Sweeper
- 1 x 7.5T Road Sweeper

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**

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. On the proviso that the internal funding will still be available, the Council will continue to support the project.

### **3.2.3 Air Quality Alerts**

The Council has been a member of the airTEXT consortium since its inception. On the proviso that the internal funding will still be available, the Council will continue to support the project.

## **3.3 Challenges**

The challenges faced now for the action plan are similar to those reported last year: Ensuring that recovery from COVID is done in a way that does not jeopardise the observed improvement in air quality. It was noted in last year's report that improvements had been highest around Heathrow Airport. It is noted that the Government's current Aviation Strategy still refers to Heathrow expansion, which would be problematic for air quality through the traffic generated, construction works and (eventually) the additional air traffic movements.

On the 21<sup>st</sup> April 2021 the Coroner into the death of 9 year old Ella Adoo-Kissi-Debrah issued a Future Prevention of Death report. This identified three areas of concern, with actions allocated to responsible bodies:

1. The national limits for PM are set too high: Government needs to address this in legislation. To be addressed by the Central Government Departments (Defra, DfT and DHSC). Revised limits are currently (May 2022) out for consultation from Defra. Important are not only the limit values, but also the time by which they are achieved.
2. Greater awareness of sources of pollution would help individuals reduce their personal exposure. Awareness needs to be addressed by national as well as local government. This is likely to require greater PM monitoring capacity. To be addressed by the Central Government Departments, the Mayor of London and the LB Lewisham (where Ella lived).
3. Adverse effects are not being sufficiently communicated to patients and their carers. This leads to a recommendation to address this at three levels, under-graduate, post graduate, and professional guidance such as NICE. This is to be addressed by the professional organisations responsible for the communication at each level.

Hillingdon Council Air Quality and Public Health teams have met to discuss their response to the Coroner's findings. Whilst this provides challenge to the Council, it also highlights opportunity for improvement of public health in the Borough. One of the first actions will be to ensure that Hillingdon GPs are made aware of the findings and given access to tools such as AirText for use by their vulnerable patients.

Higher concentrations of NO<sub>2</sub> have been recorded around parts of the Borough affected by activities linked to development of HS2 in the Borough. Monitoring will continue, and HS2 will be contacted as necessary.

The World Health Organisation (WHO) released significantly tighter Air Quality guidelines in September 2021, their first update in nearly 20 years. This links to UK government proposals on revised statutory limit values that are currently out for consultation. These activities create a challenge for the Council in seeking to meet tighter limits, and opportunity for improving public health in the Borough through increased recognition that even (historically) very low levels of pollution are damaging to health. It should be noted that the new WHO guidelines are significantly tighter than the proposals from Defra: this creates a specific challenge for further improving air quality in areas where the proposed statutory limit may be attained, but the WHO guidelines are still exceeded.

### **3.3.1 Opportunities**

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 solid 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.

It is clear that the aviation industry has been impacted heavily by the impact of Covid. It is unclear how long the recovery period will be, or if the previous levels of air travel will return in the future. This may be particularly the case for business travel as the impact of virtual technology has had the chance for its potential to be realised. Whilst Heathrow Airport has an important role to play in Hillingdon in terms of the economic benefits for the communities and businesses, it is also a substantial source of emissions. The Council will continue to press Government to remove expansion of Heathrow as a policy option.

Information gathered on changes in air quality over 2021 and reported above has been extremely useful for demonstrating the key sources of pollution and the extent to which measures could reduce concentrations. The benefits from reduced activity and how these can be locked in, whilst the country recovers from the restrictions imposed by COVID, need to be further explored to help design additional cost-efficient measures for reducing pollutant exposure. Consideration should be given to the resourcing of this activity as there is a risk that the opportunity could be lost.

As already noted, the revised WHO Air Quality Guidelines, released in September 2021 highlight the benefits of further reductions in pollution levels. Awareness of the impact of pollution on health has already been heightened by the recommendations of the Prevention of Future Deaths report in the case of the death of Ella Aloo-Kissi-Debrah. Recognition of the increased vulnerability of some members of society to poor air quality is long overdue. Together, these provide added impetus for further actions to clean the air.

### 3.4 Full account of progress against measures

From the trend analysis presented here it is apparent that there is a general downward trend in pollution in the Borough. Whilst the permanence of this trend is questionable given uncertainty on the post-COVID environment, a variety of interventions have been made that will contribute to emission reductions. Important elements include:

- European/national action on vehicle emission standards,
- Actions across London such as the tightening of the standards for the London LEZ and the introduction of a wider ULEZ in London,
- The introduction of a cleaner bus fleet along with specific low emission bus routes and
- Actions employed by each local authority in London under their air quality action plans.

Table J 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
- 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 J. Delivery of Air Quality Action Plan Measures. Progress in 2021/2022 identified through use of bold font.**

	Action	Progress	Further information
1a	Maintaining and where possible expanding monitoring network	<p><b>Ongoing.</b> 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.</p> <p>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.</p> <p>Diffusion tube network all in place, full set of results for 2020.</p> <p><b>The Council has been provided with two Breathe London sensors (<a href="https://www.breathelondon.org/">https://www.breathelondon.org/</a>). 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 and frequency of traffic using the road associated with local commercial operations. 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.</b></p>	<p>Output//target/KPI - 2019 review of monitoring complete</p> <p>The Breathe London project will give the opportunity for individuals, community groups, schools etc to “buy in” to the network and obtain their own low costs sensors. Launch is expected summer 2021.</p>
1b	Fulfilling other statutory duties including regulation of industrial sources	<p><b>Ongoing</b>, the regulation of industrial processes is undertaken by a contractor and any requirement for enforcement action is referred back to the Council.</p> <p>2020: Regulatory duties are fully up to date.</p> <p><b>2021: Regulation of industrial processes fully up to date.</b></p>	
2	Ensuring emissions from construction are minimised	<p><b>Ongoing</b> via planning, 100% of all planning applications in 2019/2020 included the construction dust condition;</p> <p>2020; Two complaints arising from commercial construction sites, resolved following site visits.</p>	

	Action	Progress	Further information
		44 investigations of dust and emissions, all resolved. <b>2021: Eighteen complaints arising from commercial operations. Outcome in all cases resolved or passed to other relevant enforcement authorities.</b>	
3	Ensuring enforcement of Non-Road Mobile Machinery (NRMM) air quality policies (addresses emissions from e.g. building sites regarding cranes, generators, etc.)	<b>Ongoing</b> , 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); 2019 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. 2020: 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. <b>2021: 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.</b>	Audits undertaken.  Non-compliant equipment is removed when it is identified by auditors.  <b>The Council continue to support Cleaner Construction for London</b>
4	Reducing emissions from CHP	<b>Ongoing:</b> Would be enforced by planning conditions where applicable, though no CHP facilities have been identified in the Borough.	
5	Enforce Air Quality Neutral (AQN) policy with more stringent application of mitigation required in the Hillingdon Focus Areas	Local Plan part 2 adopted January 2020, the air quality policy states developments must be "at least air quality neutral" (AQN); <b>Ongoing</b> 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". <b>2021: 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.</b>	See Table K and Appendix C for more detail on planning applications  The new London Plan has acknowledged that in certain areas AQN is not sufficient.  <b>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 criterion for seeking zero emissions. The Council continue to seek a zero emissions</b>

	Action	Progress	Further information
			<b>approach towards developments when located in sensitive areas such as AQ Focus Areas, near vulnerable receptors such as schools, care homes, hospitals etc.</b>
6	Ensuring adequate, appropriate, and well-located green space and infrastructure is included in new developments.	<b>Ongoing</b> 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.	Specific planning condition to be used seeking a green infrastructure scheme designed to protect public exposure. Consideration is given to a 5-10% reduction in the associated pollution damage cost where bespoke pollution green infrastructure schemes are presented.
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	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. The Council offers every resident a free garden waste collection service, this aims to reduce the need for garden bonfires. In 2019 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. 2019: 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. 2020: 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. <b>2021:Article in Hillingdon people magazine in conjunction with Public Health, along with information of the change in legislation in regard to appliances and fuel.</b>	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.

	Action	Progress	Further information
		<b>There were 89 investigations undertaken including smoke/odour/fumes and bonfires, all have been resolved.</b>	
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. An additional 14 boilers were replaced across 6 communal locations; 706 fire doors were replaced;</p> <p>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>In 2020, the scheme addressed 24 communal boilers and 266 domestic boilers in Council owned properties.</p> <p><b>2021: A total of 258 domestic boilers were replaced and 5 major communal boiler plant rooms refurbished.</b></p> <p><b>In addition, the Council were awarded £3.5m under the Green Homes Grant for low-income households in EPC bands E, F and G, to help with energy efficient measures. Over 1,000 energy saving improvements have been put in place.</b></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>2020/2021</p> <p>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><b>2021: 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 criterion for seeking an AQ Positive approach (see also Action 9), not just the size of the development. 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.</b></p>	The early release of Air Quality Positive guidance would help local authorities enforce this more consistently.
10	Public Health department taking shared responsibility for borough air quality	<p>Air quality and health have been incorporated into the Hillingdon Improvement Programme for regular updates on actions.</p> <p>2020: there was an internal PH/AQ meeting following the report on the inquest into the death of Ella Adoo-Kissi-Debrah. Council staff also</p>	Hillingdon Asthma Friendly Schools update-given the current COVID 19 situation this will need to be reported next year.

	Action	Progress	Further information
	issues and implementation of Air Quality Action Plans	attended the GLA Workshop into the implications of her death, held on 18/03/21. <b>2021: 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 step forward.</b>	
11a	Development of promotional tool for use at business engagement opportunities to raise awareness of initiatives to increase active travel and improve air quality	The MAQF bid for the west London Cluster group to develop a promotional tool for business engagement was unsuccessful; <b>2021: 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.</b>	
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; 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; 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. 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. 2019: The Targeted Problem Solving events engaged directly with 2258 people in the programme. 2020: programme has been paused due to COVID-19. <b>2021: 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</b>	

	Action	Progress	Further information
		<b>support a range of 'green initiatives, which create business growth and employment.</b>	
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 8 month period, an increase of around 7%.</p> <p>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><b>2021: 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.</b></p>	The Action Plan target is for a 10% increase in members there has been a 7% increase in an 8 month period which would roughly equate to a 10% increase if pro-rated for a year.
13	Encourage schools to join the TfL STARS accredited travel planning programme	<p>All schools were alerted to the No Idling webinars;</p> <p>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.</p> <p>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 19<sup>th</sup> with 22 schools booked in for training by the end of July.</p> <p>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>	

	Action	Progress	Further information
		<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><b>2021: 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 attain a minimum of Bronze accreditation this year.</b></p> <p><b>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.</b></p> <p><b>All schools now have Walking Maps at school entrances and new footpaths are put in place where possible to encourage active travel.</b></p> <p><b>Hillingdon schools participated in the Sustrans Big Walk and Wheel campaign (21<sup>st</sup> March-1<sup>st</sup> April 2022).</b></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>The target to identify a further five schools in 2019/2020 for pollution exposure reduction measures in terms of pollution barriers has been met;</p> <p>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 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>2020: 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.</p> <p>All schools were alerted to the No Idling webinars made available by the MAQF Project Officer.</p> <p><b>2021: 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. A further four schools participated in the Mayors' No Idling project with children participating in workshops and outside school events.</b></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><b>Funds have been secured for a programme of air quality awareness education workshops for 20 schools. These will be undertaken in the Summer Term.</b></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><b>2021: All fleet vehicle replacement tenders will seek two tenders one for diesel - fuelled and one for electric.</b></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 consumption and minimise their environmental impact.</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.
17	Reducing emissions from council fleets	<p>The council fleet replacement programme included the upgrade of 77 specialist vehicles to Euro VI. These all meet the ULEZ standard.</p> <p>2019: Permission is currently being sought for the purchase of eight pool cars which will be low/zero emission technology. 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>2020: The main fleet replacement programme was paused, 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><b>2021: 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;</b></p>	

	Action	Progress	Further information
		<b>Climate Change Action Plan has an objective to replace all diesel-powered vehicles 3.5t or less before 2030.</b>	
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>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.</p> <p>2020: A total of 6,250 trees were planted.</p> <p><b>2021: A total of 11, 655 trees were planted across the Borough. 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 children’s playgrounds in close proximity to busy roads have been approved for additional green infrastructure for implementation in 2022/2023.</b></p>	<p>In 2021 the Council will develop a Tree Strategy for the borough.</p> <p>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>
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.</p> <p>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><b>2021: The Harlington Road Air Quality Focus Area Study has been completed. Measures for implementation will be considered in 2022. See 26) if the bid to the Green Healthy Fund is successful this will help implement actions from the North Hyde Road AQ Focus Area study (to be advised after May 2022).</b></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 is being taken starting with recommendations for the areas within the Focus Areas where the pollution levels are the highest.</p>
20	Ensuring that Transport and Air Quality policies and projects are integrated via the implementation of the Healthy Streets in LIP projects	<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.</p> <p>Implementation of this action in 2020/2021 has been impacted by COVID restrictions.</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
		<b>2021: 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.</b>	
21	Discouraging unnecessary idling by taxis and other vehicles	<p>MAQF No idling project</p> <p>Two events were successfully held in Hillingdon. They involved over 600 children and engaged with 77 drivers.</p> <p><u>Hillingdon specific actions</u></p> <p>No Idling signage is in place at every school in the borough and in identified hotspots.</p> <p>Camera enforcement is in place on the School Keep Clear zigzag lines, 2,781 fines were issued from May 2019-31<sup>st</sup> January 2020 across the schools in the borough.</p> <p>The Council has continued with enforcement of idling vehicles across the borough, the total number of fines issued was 1,029.</p> <p><b>2021: Four additional schools have participated in No idling workshops and events.</b></p> <p><b>The Council has continued with the enforcement of idling vehicles across the borough, the total number of fines issued was 521.</b></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><b>2021: 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.</b></p>	
23	Using parking policy to reduce pollution emissions	<p>Investigation of this issue was initially postponed until 2020/2021. However, the COVID pandemic affected the baseline.</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.</p> <p>With the introduction of EV pool cars additional infrastructure will be considered for the staff council car parks.</p> <p>In 2020/2021, 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>	Waiting for info on the rapid charger

	Action	Progress	Further information
		<b>2021: 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.</b>	
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>2020: 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:</p> <p>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.</p> <p>With the partial LIP funds made available:</p> <ul style="list-style-type: none"> <li>• Consolidated the disjointed cycle provision on the A4020 Uxbridge Road</li> <li>• Cycling parking provision at Deansfield Primary School and Holy Trinity Primary School.</li> <li>• Upgrade to four footpaths in key locations</li> </ul> <p>Provision of walking maps project to schools in the borough, current number of schools engaged 66.</p> <p><b>2021: 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.</b></p> <p><b>The Grand Union Canal towpath between Cowley Mill Road and Rockingham Road has been resurfaced to Quietways standard.</b></p>	○
25b	Air Quality Focus Area studies, Healthy Neighbourhoods schemes, Town Centre schemes will all include the identification of opportunities for	<p>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.</p> <p>The Ruislip Healthy Neighbourhood bid is currently being evaluated by TfL.</p>	

	Action	Progress	Further information
	increased walking and cycling	<p>2020: 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><b>2021: 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).</b></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.</p> <p>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>For 2020/2021, 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 NO<sub>2</sub> 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"> <li>• A4 Bath Road;</li> <li>• Hayes Town Centre;</li> <li>• Uxbridge Road – continuation of the current Low Emission Route through to Uxbridge</li> </ul> <p><b>2021: A bid has been submitted to the TfL Green Healthy 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</b></p>	

	Action	Progress	Further information
		<b>Quality Focus Areas study. If successful, this will help implement improvement measures in one of the borough's poorest air quality areas.</b>	
27	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	2020: Air quality meetings currently paused due to COVID-19 pandemic  <b>2021: The Heathrow Air Quality meetings have been re-instated, the first was held in February 2022.</b>	
28	Continue to work in partnership with Highways England to ensure effective mitigation of arising air quality impacts on the local communities	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. 2020: Response to DEFRA Call for Evidence that HE should be defined as Air Quality Partners. <b>2021: 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, approx £250k, would implement a cycle lane from the Bath Road, through Harlington High Street, to Hayes railway station and beyond.</b>	
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	Monitoring sites for dust around construction sites in Hillingdon are being installed. Progress and monitoring data will be updated via the ASR system. 2020: air quality monitoring by HS2 included in the monitoring section of this report. <b>2021: HS2 has continued with air quality monitoring in the borough. The Hillingdon HS2 annual air quality report is not yet ready for publication.</b>	
30	Continue to work in partnership with neighbouring authorities to ensure collaboration	The West London cluster group was unsuccessful in its bid to the MAQF in regard to the development of a business engagement tool. The group will continue to meet periodically to take forward joint actions and share best practice.	

	<b>Action</b>	<b>Progress</b>	<b>Further information</b>
	on air quality where it will benefit the local communities	Regular Teams meetings are scheduled for 2021/2022. <b>2021: 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.</b>	

## 4 Planning Update and Other New Sources of Emissions

### 4.1 Planning update

#### 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 developments. The number of planning apps and the improvements requested are in Table K 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 Air Quality Focus Areas (AQFAs) where the Council seeks 'better than Air Quality Neutral' and asks for an Air Quality positive approach, 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.

#### Damage Cost Calculations

It is extremely important to note (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<sub>x</sub> and PM<sub>2.5</sub> 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<sub>2.5</sub> 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.

#### London Atmospheric Emissions Inventory 2019 (published in 2021)

In 2021 GLA has released an updated version of the LAEI, including annual mean concentrations for NO<sub>2</sub> and PM<sub>2.5</sub>. LBH has processed all the pollution data at postcode level (with centroid of the building being moved to the façade for relevant exposure assessment) to support the review and determination of planning applications for air quality. Please note the Borough uses 36ug/m<sup>3</sup> and above to determine areas of poor air quality to account for a root mean square error (RMSE) of 10% in relation to the annual mean limit value for NO<sub>2</sub> (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 subject to satisfactory S106 agreements.

It is important to mention that LBH considers PM<sub>2.5</sub> emissions, in addition to NO<sub>x</sub> 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<sub>2.5</sub> and NO<sub>x</sub> 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<sub>x</sub> and PM<sub>2.5</sub> emissions per area are significant and the Council has 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 ageing 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 the Council. For new submissions applicants are advised to contact in the first instance so that suitable information can be prepared and discussed at pre-app meetings.

**Table K. Planning requirements met by planning applications in Hillingdon in 2021.**

Condition	Number
Number of planning applications where an air quality impact assessment was reviewed for air quality impacts	43
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	37 <sup>1</sup>
Number of developments required to install Ultra-Low NO <sub>x</sub> boilers	22
Number of developments where an AQ Neutral building and/or transport assessments undertaken	43
Number of developments where the AQ Neutral building and/or transport assessments not meeting the benchmark and so required to include additional mitigation	22
Number of planning applications with S106 agreements including other requirements to improve air quality	37
Number of planning applications with CIL payments that include a contribution to improve air quality	0
<b>NRMM: Greater London (excluding Central Activity Zone and Canary Wharf)</b> Number of conditions related to NRMM included. Number of developments registered and compliant.	40 conditions included of which: 15 registered and compliant 4 unregistered/uncompliant and being chased. 7 site complete 14 awaiting status checking.

Note 1) In cases where the energy strategy for a development is not known, a condition is sought seeking reductions in emissions from energy systems.

Hillingdon has a peer review process of planning applications in place to ensure that all relevant planning applications are reviewed, and NRMM conditions, are secured on all relevant applications.

NRMM Enforcement is secured via the funded Mayor's scheme run by Cleaner Construction for London.

## 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 X.

Gradko is a UKAS accredited laboratory and participates in the AIR-PT Scheme (a continuation of the Workspace Analysis Scheme for Proficiency (WASP)) for NO<sub>2</sub> tube analysis and the annual Field Inter-Comparison Exercise. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO<sub>2</sub> 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  $< \pm 2$ . 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 are as follow (as per current published version, AIR-PT-Rounds 30 to 42 (Jan 2019 to Mar 2021))<sup>7</sup>: AIR PT AR030 (January to February 2019) – score 75 %; AIR-PT AR031 (April to May 2019) – score 100 %; AIR-PT AR33 (July to August 2019) – score 100 %, AIR-PT AR034 (September to October 2019) – score 100 %; AIR PT AR036 (January to February 2020) – score 75 %; AIR PT AR037 (May to June 2020) – cancelled due to pandemic; AIR PT AR039 (July to August 2020) – cancelled due to pandemic; AIR PT AR040 (September to October 2020) – score 75 %; and AIR-PT AR42 (January to March 2021) – score 25 %. With exception of the last round set of results, Gradko has scored between 75 and 100% in all previous results. The percentage score reflects the results deemed to be satisfactory based upon the z-score of  $< +/-2$ . No data has been published to evaluate performance in 2021.

#### ***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 N below. A local bias

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<sup>7</sup> <https://laqm.defra.gov.uk/air-quality/air-quality-assessment/qa-qc-framework/>

adjustment factor of 0.88 has been calculated from the Precision and Bias Adjustment spreadsheet (v04)<sup>8</sup>; the outputs from the spreadsheet are shown in Table L2 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. A single diffusion tube HILL01 results were also compared with the reference method (chemiluminescence) in a co-location study with continuous monitor HIL (London Hillingdon, background site). However given that it was not possible to determine the precision of the diffusion tube data for HILL01, the results were not used in the determination of the local bias adjustment.

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 below.

**Table L1. Details of the co-location sites and annual means ( $\mu\text{g m}^{-3}$ ) for each site for 2021.**

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 (27.0)	Roadside	Chemiluminescence	HILL03 (31.0)
HI3, Hillingdon 3 - Oxford Avenue (25.0)	Background	Chemiluminescence	HILL01 (29.2)

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



The local bias adjustment factor of 0.88 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 2021 and were deemed of having good precision.

The national bias adjustment factor for Gradko in 2021 (as per March 2022 issue, spreadsheet version number: 03/22), obtained from the overall national bias adjustment spreadsheet<sup>10</sup> (based on 14 studies) is 0.83. However, during 2021, 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 0.88. 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 2021. 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 L3 below.

**Table L3. 2021 Bias Adjustment Factor and Historical Comparison.**

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2021	Local	-	0.96
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

<sup>10</sup> <https://laqm.defra.gov.uk/air-quality/air-quality-assessment/national-bias/>

### A.3 Adjustments to the Ratified Monitoring Data

Where data capture is less than 75% of a full calendar year (less than 9 months) and more than 25%, the means have been “annualised” using the methodology outlined in LLAQM.TG(19) before being compared to annual mean objectives. Dates and data adjustment factors are shown in the following tables for the continuous monitoring sites LHRBR (London Heathrow Bath Road) and TAVIS (Low-Cost Sensor at Tavistock Road).

**Table M1. Dates for Period Mean Short-Term to Long-Term Monitoring Data Adjustment for LHRBR**

Start Date	End Date
22/06/2021	31/12/2021

**Table M2. Dates for Period Mean Short-Term to Long-Term Monitoring Data Adjustment for TAVIS**

Start Date	End Date
03/06/2021	31/12/2021

**Table M3. Annualisation Factor for LHRBR - NO<sub>2</sub>**

	Background Site (am)	Background Site (pm)	
<b>Pm from 22/06/2021 to 31/12/2021</b>	<b>Annual Mean (2021)</b>	<b>Period Mean (2021)</b>	<b>Ratio Am/Pm</b>
Enfield - Prince of Wales School	17.9	16.9	1.06
Harrow - Stanmore	16.4	16.0	1.02
Kensington and Chelsea - North Ken	19.5	17.9	1.09
Wandsworth Town Hall	29.5	27.8	1.06
Windsor and Maidenhead - Aldebury Road	13.9	14.1	0.99
		AVERAGE	<b>1.04</b>

**Table M4. Annualisation Factor for LHRBR – PM<sub>10</sub>**

	Background Site (am)	Background Site (pm)	
<b>Pm from 22/06/2021 to 31/12/2021</b>	<b>Annual Mean (2021)</b>	<b>Period Mean (2021)</b>	<b>Ratio Am/Pm</b>
London Harlington	12.6	11.7	1.08
London N. Kensington	13.7	12.6	1.09
London Teddington Bushy Park	12.5	11.4	1.10
London Bloomsbury	16.5	15.8	1.04
London Honor Oak Park	13.3	12.1	1.10
		AVERAGE	<b>1.08</b>

**Table M5. Annualisation Factor for LHRBR – PM<sub>2.5</sub>**

	Background Site (Am)	Background Site (Pm)	
<b>Pm from 22/06/2021 to 31/12/2021</b>	<b>Annual Mean (2021)</b>	<b>Period Mean (2021)</b>	<b>Ratio Am/Pm</b>
London Harlington	7.8	7.1	1.09
London N. Kensington	8.7	8.0	1.09
London Teddington Bushy Park	8.2	7.3	1.12
London Westminster	10.5	8.9	1.18
London Honor Oak Park	8.6	12.6	0.68
			AVERAGE <b>1.03</b>

**Table M6. Annualisation Factor for TAVIS – NO<sub>2</sub>**

	Background Site (Am)	Background Site (Pm)	
<b>Pm from 03/06/2021 to 31/12/2021</b>	<b>Annual Mean (2021)</b>	<b>Period Mean (2021)</b>	<b>Ratio Am/Pm</b>
Enfield - Prince of Wales School	17.9	16.5	1.09
Harrow - Stanmore	16.4	15.4	1.06
Kensington and Chelsea - North Ken	19.5	17.3	1.13
Wandsworth Town Hall	29.5	27.6	1.07
Windsor and Maidenhead - Aldebury Road	13.9	13.5	1.03
			AVERAGE <b>1.08</b>

**Table M7. Annualisation Factor for TAVIS – PM<sub>2.5</sub>**

	Background Site (Am)	Background Site (Pm)	
<b>Pm from 03/06/2021 to 31/12/2021</b>	<b>Annual Mean (2021)</b>	<b>Period Mean (2021)</b>	<b>Ratio Am/Pm</b>
London Harlington	7.8	7.1	1.10
London N. Kensington	8.7	7.8	1.10
London Teddington Bushy Park	8.2	7.2	1.14
London Westminster	10.5	9.0	1.17
London Honor Oak Park	8.6	7.7	1.13
			AVERAGE <b>1.13</b>



Figure 26. Low-Cost Sensor Tavistock Road, Merrivale Mews



Figure 27. Low-Cost Sensor Harlington High Street

## Appendix B Full Monthly Diffusion Tube Results for 2021

Table O. NO<sub>2</sub> Diffusion Tube Results – London Borough of Hillingdon

Site ID	Valid data capture for monitoring period % <sup>a</sup>	Valid data capture 2021 % <sup>b</sup>	Annual Mean NO <sub>2</sub>												Annual mean – raw data	Annual mean – annualised and bias adjusted <sup>c</sup>
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
HILL01	100.0	100.0	35.7	37.4	30.7	24.6	29.1	21.8	25.1	19.3	33.5	29.4	33.0	30.6	29.2	25.7
HILL02	83.3	83.3	35.7	36.3	22.8	41.0	35.7	40.0	34.0	29.1	42.7	missing	missing	33.5	35.1	30.9
HILL03	100.0	100.0	36.4	33.1	33.5	32.7	27.8	27.5	24.7	24.0	36.1	31.1	37.3	30.5	31.2	27.3
HILL03	100.0	100.0	37.6	35.6	34.0	30.2	27.1	27.9	26.3	23.5	33.7	29.6	37.0	26.6	30.8	23.3
HILL03	100.0	100.0	38.5	35.9	35.6	31.9	27.8	27.9	27.9	24.0	32.1	28.2	33.2	29.2	31.0	25.4
HILL04	100.0	100.0	30.7	28.5	29.3	30.0	23.6	23.6	23.9	17.5	31.3	25.7	30.2	23.9	26.5	29.7
HILL05	100.0	100.0	36.0	34.9	30.8	22.0	30.0	23.4	22.6	19.1	32.4	30.7	32.6	31.4	28.8	28.8
HILL06	100.0	100.0	41.7	38.5	38.6	28.5	33.3	31.5	33.6	0.6	42.2	38.0	46.2	32.0	33.7	25.3
HILL07	100.0	100.0	41.4	41.0	36.2	29.7	29.2	24.3	23.0	20.3	37.1	32.9	40.0	37.6	32.7	24.5
HILL08	100.0	100.0	37.6	33.8	34.3	26.3	24.0	20.7	20.4	19.0	30.9	28.9	35.5	33.0	28.7	26.4
HILL09	100.0	100.0	33.2	32.4	29.4	24.3	22.3	21.3	23.2	19.7	32.7	32.6	32.2	30.4	27.8	18.2
HILL10	100.0	100.0	37.4	33.0	30.5	25.7	27.3	17.3	23.5	21.6	33.9	34.6	38.8	36.9	30.1	23.0
HILL11	83.3	83.3	26.4	26.6	17.5	missing	missing	14.8	13.9	13.5	24.9	22.2	24.1	22.4	20.6	21.0
HILL12	100.0	100.0	31.6	32.4	23.4	25.2	21.8	19.8	21.7	16.3	30.6	28.3	32.9	29.9	26.2	15.4
HILL13	91.7	91.7	30.1	29.3	25.3	23.2	21.7	19.3	19.5	16.7	26.4	23.1	28.1	missing	23.9	21.6
HILL14	100.0	100.0	23.7	25.1	16.8	17.9	14.1	12.3	14.0	7.5	18.8	17.3	22.0	20.4	17.5	26.4
HILL15	100.0	100.0	31.2	28.6	23.5	23.1	21.0	19.5	21.6	16.5	28.7	24.8	30.3	26.5	24.6	24.2
HILL16	100.0	100.0	37.5	33.7	30.0	25.6	26.4	21.3	22.1	21.4	32.9	34.3	41.8	33.1	30.0	27.6
HILL17	100.0	100.0	37.9	34.9	27.5	24.2	21.5	18.7	22.2	16.1	30.1	30.9	35.5	30.1	27.5	27.6
HILL18	91.7	91.7	40.3	35.7	33.1	27.5	30.2	23.1	23.8	missing	33.4	29.3	35.4	32.8	31.3	31.5
HILL19	100.0	100.0	38.0	38.1	36.0	29.3	30.7	24.3	26.3	20.0	34.3	32.3	36.6	30.4	31.4	24.1
HILL20	100.0	100.0	41.2	39.9	40.8	22.5	34.8	29.8	31.8	24.0	42.0	40.2	43.6	38.7	35.8	33.7
HILL21	100.0	100.0	34.8	34.5	29.9	24.1	23.9	19.3	21.3	18.7	28.3	28.3	31.3	33.7	27.3	23.8
HILL22	100.0	100.0	42.5	40.4	43.4	36.1	37.0	37.5	36.1	27.5	44.0	33.4	47.3	34.2	38.3	32.0
HILL23	91.7	91.7	30.6	30.3	26.1	missing	25.6	24.2	25.9	20.6	34.0	25.2	31.0	23.5	27.0	28.5
HILL24	100.0	100.0	41.0	38.8	36.4	35.7	33.2	33.9	34.0	30.2	40.7	35.3	42.5	34.7	36.4	26.8
HILL25	100.0	100.0	40.3	39.7	32.5	28.6	30.5	24.0	26.2	22.3	35.7	39.4	38.9	30.2	32.4	25.3
HILL26	100.0	100.0	37.4	35.7	31.3	26.8	30.8	19.5	25.9	19.6	35.1	32.6	36.7	34.3	30.5	23.5
HILL27	100.0	100.0	34.5	33.5	30.5	26.7	23.4	20.6	22.5	19.3	32.4	30.2	37.5	33.4	28.7	23.0

Site ID	Valid data capture for monitoring period % <sup>a</sup>	Valid data capture 2021 % <sup>b</sup>	Annual Mean NO <sub>2</sub>													Annual mean – raw data	Annual mean – annualised and bias adjusted <sup>c</sup>
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
HILL28	83.3	83.3	missing	missing	29.2	26.5	25.8	21.5	22.0	16.4	30.7	30.2	35.1	29.5	26.7	19.2	
HILL29	100.0	100.0	33.0	32.6	25.9	23.2	24.5	18.9	20.5	15.6	30.0	27.1	33.9	29.1	26.2	23.2	
HILL30	91.7	91.7	29.9	25.9	22.4	20.3	19.6	15.8	17.1	13.1	24.6	25.5	26.3	missing	21.9	37.4	
HILL31	100.0	100.0	31.7	37.1	26.6	21.4	25.7	17.0	22.1	15.7	27.6	29.3	29.9	31.7	26.3	31.8	
HILL32	100.0	100.0	<b>47.1</b>	38.0	<b>42.5</b>	<b>44.2</b>	<b>42.1</b>	38.7	<b>41.5</b>	36.0	<b>50.3</b>	<b>42.5</b>	<b>46.4</b>	<b>40.7</b>	<b>42.5</b>	28.4	
HILL33	100.0	100.0	<b>41.8</b>	34.5	38.0	27.3	33.4	33.6	34.3	24.0	<b>40.6</b>	39.0	<b>47.5</b>	38.9	36.1	28.0	
HILL34	100.0	100.0	38.5	<b>40.9</b>	31.8	27.3	30.2	23.6	27.9	21.7	34.8	35.2	39.2	36.5	32.3	31.6	
HILL35	100.0	100.0	<b>45.1</b>	37.4	32.2	27.6	29.6	22.9	25.5	20.1	35.5	32.5	<b>40.1</b>	32.9	31.8	30.4	
HILL36	91.7	91.7	missing	39.6	38.2	35.6	34.9	33.8	33.4	25.5	<b>42.3</b>	32.4	<b>40.4</b>	38.6	35.9	28.9	
HILL37	91.7	91.7	39.1	38.2	35.9	31.3	missing	22.7	32.0	22.1	<b>42.1</b>	35.8	<b>43.9</b>	36.7	34.5	29.1	
HILL38	100.0	100.0	<b>45.6</b>	3.9	34.3	31.6	32.0	25.6	29.7	24.1	<b>40.8</b>	38.6	<b>47.8</b>	39.8	32.8	23.4	
HILL39	100.0	100.0	38.7	39.1	32.2	30.5	31.0	23.5	28.5	21.5	<b>40.2</b>	37.6	<b>40.4</b>	33.9	33.1	32.9	
HILL40	91.7	91.7	27.3	30.2	26.1	24.7	21.3	19.8	missing	19.3	30.6	28.6	34.1	30.9	26.6	29.3	
HILL41	100.0	100.0	<b>44.4</b>	38.0	35.0	30.5	34.4	27.3	32.5	21.5	<b>48.1</b>	<b>44.2</b>	<b>45.8</b>	<b>47.1</b>	37.4	28.2	
HILL42	91.7	91.7	38.0	<b>42.9</b>	34.1	29.2	missing	16.0	31.4	25.3	39.9	37.5	36.5	34.8	33.2	27.0	
HILL43	100.0	100.0	<b>41.2</b>	32.9	33.5	24.5	31.7	25.2	28.9	19.9	36.8	32.9	<b>44.2</b>	33.3	32.1	25.7	
HILL44	100.0	100.0	<b>43.5</b>	30.3	28.0	29.5	29.5	30.4	30.8	24.7	35.9	26.8	32.3	27.3	30.7	30.9	

#### Notes

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

Exceedances of the NO<sub>2</sub> annual mean AQO of 40  $\mu\text{g m}^{-3}$  are shown in red and **bold**.

NO<sub>2</sub> annual means in excess of 60  $\mu\text{g m}^{-3}$ , indicating a potential exceedance of the NO<sub>2</sub> 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 0.88 was applied to the data

## Appendix C Details of planning applications for 2021/2022 by Focus Area

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
<b>HAYES FOCUS AREA</b>			
<b>Planning Ref</b>	<b>12795/APP/2021/1584</b>		
MURRAY ENGINEERING (HAYES) LTD SILVERDALE ROAD HAYES UB3 3BN 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 sq.m of Class E space at ground and basement levels and 22 residential units above including car parking, cycle parking, refuse with associated works.		The level of mitigation required to the proposed development for traffic emissions is £13,578.	Therefore, a section 106 agreement with the LAP of £13,578 was 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 are required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.
<b>Planning Ref</b>	<b>76655/APP/2021/3039</b>		
KEITH HOUSE NORTH HYDE ROAD HAYES UB3 4PU Demolition of the existing warehouse and re-development of the site to provide a mixed-use development, comprising flexible commercial floorspace (Use Class E(g)(ii) and (iii)) and 376 no. Shared-Living units (Sui Generis) with associated landscaping, amenity, parking and revised vehicle and pedestrian access.		The level of mitigation required associated with the operation phase of the proposed development is calculated using Defra's Damage Cost Approach. The total level of mitigation required to the proposed development for traffic emissions is £21,173. The proposed development is not air quality neutral.	Therefore, a section 106 agreement with the LAP of £21,173 was 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. In addition, two Air Quality conditions are required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.
<b>Planning Ref</b>	<b>28877/APP/2020/3991</b>		
UNIT 6 & UNIT 7 SILVERDALE INDUSTRIAL	The development site is located on the Silverdale	Given the sensitive location in terms of air quality, and the location within Hayes Focus	Assuming no mitigation is offered, the total amount is due, and a section 106 agreement with the LAP of £11,380 is to be paid for Hillingdon to deliver its air quality local action plan and or implement specific measures on/along the road

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
<p>ESTATE SILVERDALE ROAD HAYES</p> <p>Change of use from Use Class B2 (General Industrial) to Sui Generis for use as van sales, external display, van repair workshop and MOT centre, parts storage and distribution centre involving alterations to elevations, including new vehicle access doors</p>	<p>Industrial Estate off Silverdale Road. The area around the development site is made up of a range of different uses which include light industrial, Royal Mail Depot, motor vehicle body repair workshop and other commercial uses. The proposed Change of Use of existing light industrial building with ancillary offices to light commercial van dealership incorporating new and used van sales, parts storage, and motor vehicle repair workshop with MOT testing facilities and PDI Centre for new and used motor vehicles will have to be considered in the scope of impact on local air quality.</p>	<p>Area, the proposed development will have to be both air quality neutral and air quality positive. Given that there is no Transport Assessment to ascertain the likely vehicle generation associated with the proposed change of use, it was assumed that the proposal is air quality neutral, which equates to 25 vehicle movements per day. However, the proposal is not air quality positive, and the vehicle emissions generated by the proposal will have to be mitigated. The level of mitigation required to the proposed development for traffic emissions is £11,380. Should a Travel Plan be provided by the applicant, a 5% Flat rate reduction can be applied. Should any other contribution to improve air quality be made, further reductions can be considered.</p>	<p>network affected by the proposal that reduce vehicle emissions and or reduces human exposure to nitrogen dioxide levels. A condition is required to secure definition of routes to be allowed and vehicles being Euro6/VI or cleaner. Quality conditions are required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London. This can be part of a Travel Plan to be secured by a bond</p>
<p><b>Planning Ref</b></p>	<p><b>36678/APP/2021/3370</b></p>		
<p>3 VIVEASH CLOSE HAYES UB3 4RY</p> <p>Redevelopment of the site to erect a part 10 storey and part 11 storey residential led development comprising 128 flats and a 122 sq.m commercial space / residents lounge (Class E) with associated access (including Public Access Improvements) and landscaping works</p>	<p>Given the accessible location of the site, the proximity of Haye and Harlington Station and the car-free nature of the proposed development, it is considered that the majority of person trips will be undertaken by sustainable modes of travel and only a very small number of trips will</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.</p> <p>Based on the sample of TRICS sites and the proposed development of 129 dwellings would be expected to attract</p>	<p>Once all deductions were applied, the remaining value of mitigation due is £7,637. Flat rate deductions applied are as follow: Travel Plan (10%), Green Sustainable Measures (5%), contribution to long term LBH strategic long-term strategies (e.g. multimodal shift) (10%), totalling a reduction of £7,637.</p> <p>Therefore, a section 106 agreement with the LAP of £7,637 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.</p>

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
following demolition of existing light industrial building	be by private car. Therefore, the development is considered Air Quality Neutral	servicing vehicles. The proposed commercial use provides 122 square metres of E class land use and will likely be occupied by a use such as a coffee shop or cafe. It is considered that a use such as a café/coffee shop will likely result in delivery/servicing trips per day associated with restocking food and drinks as well as customer trips. Therefore, the total emissions associated with these activities (which still exclude uber/taxis/visitors/and a small use of private car by residents) needs to be mitigated. The level of mitigation required to the proposed development for traffic emissions is £7,637.	In addition, two Air Quality conditions are required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.
<b>Planning Ref</b>	<b>71737/APP/2021/4535</b>		
GETHCELN HOUSE DAWLEY ROAD HAYES Proposed demolition of existing office and warehouse/workshops and erection of one flexible use class B1(c)/B2/B8 building comprising 3 units with associated access and parking	The proposed extended development is located in the Hayes Focus Area, originating traffic emissions which will add to the current exceedances. Based on the information provided, the proposal is not air quality neutral for transport emissions.	The development is not Air Quality Neutral and further action is required to reduce emissions.	Therefore, a section 106 agreement with the LAP of £7,283 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 reduces human exposure to pollution levels. In addition, two Air Quality conditions are required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London
<b>Planning Ref</b>	<b>76550/APP/2021/4499</b>		
LAND AT AUSTIN ROAD HAYES Hybrid planning application seeking OUTLINE permission (with all matters reserved) for residential floorspace (Class C3) including demolition of all	Based on the information provided in the Transport Assessment report to support the planning application, the proposal is air quality neutral for transport emissions. Due	The development is not Air Quality Positive and further action is required to reduce emissions.  Mitigation measures to reduce emissions can be applied on-	Therefore, a section 106 agreement with the LAP of £4,778 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 reduces human exposure to nitrogen dioxide levels. In addition, two Air Quality conditions are 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
<p>existing buildings and structures; erection of new buildings; provision of a community centre (up to 140sq.m of Use Class F2(b) floorspace); new pedestrian and vehicular access; associated amenity space, open space, landscaping; car and cycle parking spaces; plant, refuse storage, servicing area and other works incidental to the proposed development; and FULL planning permission for Blocks A and B comprising 80 residential units (Class C3); new pedestrian and vehicular access; associated amenity space and landscaping; car and cycle parking; refuse storage, servicing area, and other associated infrastructure to include temporary highways and landscaping works. Details: Comprising a maximum of 500 residential units and (Use Class C3) and 140sq.m of community floorspace (Use Class F2(b)) at ground floor in a series of buildings ranging in height from 2 to 12 storeys with associated access and car parking for 113 vehicles and 912 cycle parking, landscape and amenity areas and associated servicing</p>	<p>to the size of the proposed development and length of its construction period, the demolition and construction phase will pose significant impacts on local air quality, being classed as High risk for dust soiling and medium risk for human health. Therefore, suitable mitigation during the construction phase is required, managed and delivered through the implementation of an Environmental Construction Management Plan (CEMP).</p>	<p>site or off-site. Where this is not practical or desirable, pollutant off-setting will be applied. The level of mitigation required associated with the operation phase of the proposed development is calculated using Defra's Damage Cost Approach.  The level of mitigation required to the proposed development for traffic emissions is £7,963. Once all deductions were applied, the remaining value of mitigation due is £6,191. Flat rate deductions applied are as follow: Green Sustainable Measures (5%), Travel Plan (10%), contribution to long term LBH strategic long-term strategies (social support, modal shift strategies, etc, 20%), totalling a reduction of £3,185.</p>	
<b>Planning Ref</b>	<b>76551/APP/2021/4502</b>		
LAND AT AVONDALE DRIVE HAYES	Based on the information provided in the Transport	As per the London Plan and LBH Local Action Plan 2019-	

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
<p>Hybrid planning application seeking OUTLINE permission (with all matters reserved) for residential floorspace (Class C3) including demolition of all existing buildings and structures; erection of new buildings; new pedestrian and vehicular accesses; associated amenity space, open space, landscaping; car and cycle parking spaces; plant, refuse storage, servicing area and other works incidental to the proposed development; and FULL planning permission for Block A comprising 30 residential units (Class C3); new pedestrian access; associated amenity space and landscaping; cycle parking, refuse storage, and other associated infrastructure. Details: Comprising a maximum of 240 residential units in a series of buildings ranging in height from 2 to 10 storeys with associated access and car parking for 82 vehicles and 440 cycle parking, landscape and amenity areas and associated servicing</p>	<p>Assessment report to support the planning application, the proposal is air not quality neutral for transport emissions and not air quality positive. Due to the size of the proposed development and length of its construction period, the demolition and construction phase will pose significant impacts on local air quality, being classed as High risk for dust soiling and medium risk for human health for the track-out routes of the construction lorries. Therefore, suitable mitigation during the construction phase is required, managed and delivered through the implementation of an Environmental Construction Management Plan (CEMP).</p>	<p>2024, developments need to be neutral as minimum and positive in Focus Areas, contributing to the reduction of air pollutant emissions in these sensitive locations. LBH requires new developments to incorporate air quality positive design measures from the outset and suitable mitigation measures to reduce pollution, especially in areas where the air quality is already poor (LBH Air Quality Local Action Plan 2019-2024), namely Focus Areas. The development is not Air Quality Neutral and further action is required to reduce emissions.</p> <p>Mitigation measures to reduce emissions can be applied on-site or off-site. Where this is not practical or desirable, pollutant off-setting will be applied. The level of mitigation required associated with the operation phase of the proposed development is calculated using Defra's Damage Cost Approach.</p>	<p>OUTLINE APPLICATION: The level of mitigation required to the proposed development for traffic emissions for the outline application is £96,878. Once all deductions are applied, the remaining value of mitigation due is £58,127. Flat rate deductions applied are as follow: Green Sustainable Measures (5%), Travel Plan (15%), contribution to long term LBH strategic long-term strategies (multi modal shift strategies, 20%), totalling a reduction of £38,751. Therefore, for the Outline application, a declaration that either a) a section 106 agreement with the LAP of £58,127 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 reduces human exposure to nitrogen dioxide levels at the detailed stage; or b) endeavours will be made at the detailed stage to make the proposal air quality neutral for air quality. The Section 106 value due will be determined and secured at the detailed stage.</p> <p>DETAILED APPLICATION: The level of mitigation required to the proposed development for traffic emissions for the detailed application is £6,193. Once all deductions were applied, the remaining value of mitigation due is £3,716. Flat rate deductions applied are as follow: Green Sustainable Measures (5%), Travel Plan (15%), contribution to long term LBH strategic long-term strategies (social support, modal shift, 20%), totalling a reduction of £2,477.</p> <p>Therefore, For the DETAILED application, a section 106 agreement with the LAP of £3,716 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 reduces human exposure to nitrogen dioxide levels. In addition, two Air Quality conditions are required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.</p>
<b>WEST DRAYTON/YIEWSLEY FOCUS AREA</b>			
<b>Planning Ref</b>	<b>1058/APP/2021/3423</b>		
PADDINGTON PACKET BOAT PUBLIC HOUSE HIGH ROAD COWLEY UXBRIDGE			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
Demolition of the public house (Sui Generis) and erection of purpose-built student accommodation (Sui Generis) and associated common areas and facilities, landscaping, amenity space, bicycle and motorcycle parking, and refuse storage. Details: Demolition of the public house (Sui Generis) and erection of a four-storey, purpose-built student accommodation (Sui Generis) comprising 61 no. studio rooms, and associated common areas and facilities, landscaping, amenity space, bicycle and motorcycle parking, and refuse storage.			
<b>Planning Ref</b>	<b>24596/APP/2021/4248</b>		
91 STATION ROAD WEST DRAYTON Erection of a three-storey building with lower ground floor level to accommodate student accommodation and a retail shop, following demolition of existing hot food takeaway and mini-cab premises with associated access works		Based on the information provided in the Transport Assessment report to support the planning application, the proposal is air quality neutral and air quality positive for transport emissions.  The energy model for the proposed development is unknown at the time of writing and therefore not possible to ascertain if the proposal is air quality neutral Air Quality / Positive for building emissions. This will be met by a condition. Should the proposal not be air quality neutral and or air quality	In addition, the following conditions will apply. See text below. Condition Air Quality - Low Emission Strategy No development shall commence until a low emission strategy (LES) has been submitted to and approved in writing by the Local Planning Authority. The LES shall be focused on making the Travel Plan ambitious and make full use of the PTAL of the application site, and secure building emissions are air quality neutral and in alignment with the cleanest technologies in the market for energy production. It shall specify as a minimum the following  1) A clear and effective strategy to encourage residents to  a) use public transport; b) cycle / walk to work where practicable; c) enter car share schemes; d) purchase and drive to work zero emission vehicles.  2) Provision of a clean supply of energy to the student accommodation. Any CHP or gas boiler will have to conform with the London Ultra Low NOx requirements. The boilers to be specified to meet ultra-low NOx emissions standards of < 40mg/kWh.

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
		<p>positive, further action will be required to reduce emissions.</p> <p>Of extreme importance though is the fact that the proposed development is in the vicinity of likely exceedances of the annual mean limit value for nitrogen dioxide (please see map attached) and therefore it is strongly recommended that the façade of the building is as far from the road as possible. Any ventilation system to be deployed is to extract air from the rear of the building, away from the main road and if possible be fitted with NOx/NO<sub>2</sub> filters.</p>	<p>3) The design of the building is set back from the road as far as possible (at least 5 to 10 metres). Any ventilation system to be deployed is to extract air from the rear of the building, away from the main road and if possible be fitted with NOx/NO<sub>2</sub> filters.</p> <p>The measures in the agreed scheme shall be maintained throughout the life of the development.</p> <p>Reason - As the application site is within an Air Quality Management Area, and to reduce the impact on air quality in accordance with 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 T4, and paragraphs 174(e), 186 and 188 of the National Planning Policy Framework (2021).</p> <p>Conditions - Reducing Emissions from Demolition and Construction</p> <p>A No development shall commence until a Plan has been submitted to, and approved in writing by, the LPA. This must demonstrate compliance (drawn up accordance with) the GLA Control of Dust and Emissions from Construction and Demolition SPG (or any successor document).</p> <p>Reason: Compliance with London Plan Policy SI 1 and in accordance with Mayor of London "The Non-road mobile machinery (standard condition recommended by Mayor of London, London Local Air Quality Management Policy Guidance 2019)</p> <p>B All Non-Road Mobile Machinery (NRMM) of net power of 37kW and up to and including 560kW used during the course of the demolition, site preparation and construction phases shall comply with the emission standards set out in chapter 7 of the GLA's supplementary planning guidance "Control of Dust and Emissions During Construction and Demolition" dated July 2014 (SPG), or subsequent guidance. Unless it complies with the standards set out in the SPG, no NRMM shall be on site, at any time, whether in use or not, without the prior written consent of the local planning authority. The developer shall keep an up-to-date list of all NRMM used during the demolition, site preparation and construction phases of the development on the online register at <a href="https://nrmm.london/">https://nrmm.london/</a>."</p> <p>Reason: Compliance with the London's Low Emission Zone for non-road mobile machinery as per requirements of the London Environment Strategy</p>
<p><b>Planning Ref</b></p>	<p><b>35810/APP/2021/1234</b></p>		

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
<p>TAVISTOCK WORKS TAVISTOCK ROAD YIEWSLEY UB7 7QX Demolition of existing building and replacement with an up to 8-storey building comprising residential units and associated car parking, landscaping and amenity space. Detailed description: Provision of 32 units (14 x 1 bedroom, 14 x 2 bedroom and 4 x 3 bedroom)</p>	<p>The proposed development is not air quality neutral for transport emissions.</p>	<p>The level of mitigation required associated with the operation phase of the proposed development is calculated using Defra's Damage Cost Approach.</p>	<p>The mitigation measures proposed were evaluated in terms of likely emission reductions onto local air quality. Wherever quantifiable, these are calculated and subtracted from the overall value due. When no quantification is possible, a flat rate discount is applied. The total level of mitigation required to the proposed development for traffic emissions is £27,388. Once all deductions were applied, the remaining value of mitigation due is £20,541. Flat rate deductions applied are as follow: Travel Plan (10%), Green Measures (5%), Long Term Strategic Modal Shift Measures (10%). Therefore, a section 106 agreement with the LAP of £20,541 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.</p> <p>In addition, two Air Quality conditions are required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London</p>
<p><b>Planning Ref</b></p>	<p><b>38058/APP/2021/1327</b></p>		
<p>LAND AT RAINBOW INDUSTRIAL ESTATE TROUT ROAD YIEWSLEY UB7 7XT Installation of two portacabins and retention of entrance gates and proposed change of use for Use Class Sui Generis including container storage; open and closed storage of building and scaffolding materials; storage of aggregate materials; vehicle storage and sales for a period of 36 months (part retrospective application)</p>	<p>It is noted that the proposal seeks a change of use for Use Class Sui Generis including container storage; open and closed storage of building and scaffolding materials; storage of aggregate materials. It is also noted that in same postcode of the application site, there is a Builder company. No cumulative assessment was undertaken to ascertain the impact of having construction vehicles coming in and out of the application site (this includes both traffic emissions and fugitive emissions due to track out). In addition, no air quality assessment of the</p>	<p>under the Environmental Protection Act 1990, dust nuisance, if it is a regular problem which is substantially affecting resident's health or well-being, or interfering with the use and enjoyment of homes, is considered statutory nuisance. The proposed development has the potential to generate high risk of nuisance to the nearby residents during its operation phase. The applicant has not provided suitable information on the following:</p> <p>a) Impacts of transportation of stored materials on local residential areas, namely lorries carrying construction materials to and from the application site; these can include emissions from</p>	<p>Reason for Refusal Lack of information to ascertain the level of dust nuisance to nearby residential areas and mitigation to be deployed at receptors most likely to be affected by the operation of the proposed development due to traffic exhaust emissions (for example residential locations R8, R9, and R10). If it were to be approved a section 106 agreement with the LAP of a minimum of £37,293 up to £115,251 would have 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.</p>

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
	<p>impacts on local air quality and premises of fugitive emissions from within the site was submitted to the LA for evaluation.</p> <p>Therefore, the LBH has no sufficient information to calculate the total level of mitigation required, nor what measures would be needed to make sure the risk of dust nuisance would be minimised.</p>	<p>track-out, fugitive emissions from stockpiling construction materials, and increased congestion due to large size vehicle movements to and from the site to deposit/collect the stored materials. No cumulative assessment of the total vehicle movements (both cars, vans and lorries) with other existing activities in the vicinity of the site was undertaken.</p> <p>b) Plans and measures to mitigate fugitive emissions likely to originate from the application site during operation through a Dust Management Plan;</p> <p>c) Plans and measures to manage traffic routes for material transportation lorries to avoid sensitive and congested areas of the Focus Area through a Traffic Management Plan</p>	
<b>Planning Ref</b>	<b>38058/APP/2021/1327</b>		
<p>LAND AT RAINBOW INDUSTRIAL ESTATE TROUT ROAD YIEWSLEY UB7 7XT</p> <p>Installation of two portacabins and retention of entrance gates and proposed change of use for Use Class Sui Generis including container storage; open and closed storage of building and scaffolding materials; storage of aggregate materials; vehicle</p>		<p>The level of mitigation required to the proposed development for traffic emissions is £37,293 for a period of three years.</p>	<p>Therefore, a section 106 agreement with the LAP of £37,293 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.</p> <p>In addition, an Air Quality condition is required to develop and implement a Low Emission Strategy to minimise traffic emissions to the possible maximum extent</p>

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
storage and sales for a period of 36 months (part retrospective application)			
<b>Planning Ref</b>	<b>73420/APP/2020/4268</b>		
<p>LINK PARK HEATHROW THORNEY MILL ROAD WEST DRAYTON, UB7 7EZ</p> <p>(Cross Borough Boundary Application) Outline planning application with the details of access, appearance, landscaping, layout and scale reserved for later determination. Demolition and redevelopment to comprise a data centre (Use Class B8 (Data Centre) or Sui Generis (Data Centre) of up to 55,000 sq.m (GEA) including ancillary offices, internal plant and equipment and substation. In addition to the above the Development may also include: car parking; provision of external plant and equipment and fuel storage; creation of servicing areas and provision of associated services, including waste, refuse, cycle storage and lighting; and for the laying out of the buildings; routes and open spaces within the development; realignment of railhead; all associated and ancillary works and operations including but not limited to: demolition; earthworks; and provision of attenuation</p>	<p>The proposal will bring significant adverse emissions into the AQMA which will add to current levels of air pollution in the area.</p> <p>The proposed development will include 24 units of diesel fuel oil backup generators, which, as widely known across London Boroughs, can produce significant levels of pollution. As per the National Planning Policy Framework (NPPF) and the LBH Local Action Plan, these emissions are required to be mitigated. The updated air quality addendum does not specify suitable mitigation. It is also noted that the modelled results did not account for any backup activity per year (which is the purpose of the devices) and therefore the impact on local air quality has been underestimated. Finally, the proposed development is contrary to the London Plan, being not air quality neutral, with a total annual emission level associated with the backup diesel generators</p>	<p>The modelled results reported in the Air Quality Addendum Report submitted to support the planning application indicate that the proposed development produces impacts ranging mainly from moderate to substantial adverse when Kohler diesel backup generators are installed, and produces impacts of moderate adverse nature when Cat Low Emissions backup generators are installed, creating new exceedances and exacerbating current ones in both cases – this is a material consideration for air quality. As mentioned above, no suitable mitigation is offered.</p>	<p>Therefore, LBH recommends refusal on the grounds of air quality being a material consideration. The proposal is contrary to the London Plan, leading to further deterioration of existing poor air quality, creating new areas that exceed air quality limits and delaying the date at which compliance will be achieved in areas that are currently in exceedance of legal limits. In addition, the proposed development is not air quality neutral.</p> <p>The proposal is also contrary to the NPPF, with no suitable mitigation (e.g. use of cleaner backup generator fuelled technologies - e.g. gas fuelled backup generators- coupled with efficient Selective Catalytic Reduction) being considered in the application.</p> <p>Furthermore, there are no clear mechanisms to reduce exposure of the affected sensitive receptors at the London Borough of Hillingdon, with excessive pollution being emitted, which will contribute to background concentrations and counterfeit the LA efforts of improving air quality and safeguard human health.</p>

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
infrastructure and engineering operations.	proposed being unacceptable		
<b>Planning Ref</b>	<b>73420/APP/2021/4388</b>		
<p>LINK PARK HEATHROW THORNEY MILL ROAD WEST DRAYTON, UB7 7EZ</p> <p>(Cross Borough Boundary Application) Outline planning application with the details of access, appearance, landscaping, layout and scale reserved for later determination. Demolition and redevelopment to comprise a data centre (Sui Generis (Data Centre)) of up to 55,000sq.m (GEA) (excluding gantries) including ancillary offices, internal plant and equipment and substation. In addition to the above the Development may also include: car parking; provision of external plant and equipment and fuel storage; creation of servicing areas and provision of associated services, including waste, refuse, cycle storage and lighting; and for the laying out of the buildings; routes and open spaces within the development; all associated and ancillary works and operations including but not limited to: demolition; earthworks; provision of attenuation infrastructure, engineering operations.</p>	<p>The proposed development is contrary to the London Plan, being not air quality neutral</p>	<p>The proposed development will include 24 units of diesel fuel oil backup generators, which, as widely known across London Boroughs, usually produce significant levels of air pollution, with a heavy load of annual emissions associated with key pollutants for LAQM, namely: nitrogen dioxide - NO2 (for which the LBH AQMA is declared), and particulate matter - PM10 and PM2.5. 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 effects of this pollutant on human health. As per the National Planning Policy Framework (NPPF) and the LBH Local Action Plan, these emissions are required to be mitigated.</p>	<p>Therefore, LBH recommends refusal on the grounds of air quality being a material consideration. The proposal is contrary to the London Plan not being air quality neutral and leading to further deterioration of existing poor air quality and is contrary to the NPPF, with no suitable mitigation (e.g. use of cleaner backup generator fuelled technologies - e.g. gas fuelled backup generators- coupled with efficient Selective Catalytic Reduction) being considered in the application.</p> <p>Furthermore, there are no clear mechanisms to reduce exposure of the affected sensitive receptors at the London Borough of Hillingdon, with excessive pollution being emitted, which will contribute to background concentrations and counterfeited the LA efforts of improving air quality and safeguard human health.</p> <p>Given the level of impacts predicted at the LBH, with the pollution burden estimated on Hillingdon residents, and given the level of annual emissions of pollutants NOx and PM2.5 into the atmosphere which no doubt will contribute to worsening of background levels, it is recommended the application is refused.</p>
<b>Planning Ref</b>	<b>76795/APP/2021/3704</b>		

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
<p>LAND AT YIEWSLEY LIBRARY &amp; FORMER YIEWSLEY POOL FALLING LANE OTTERFIELD ROAD YIEWSLEY UB7 8AB</p> <p>Demolition of existing Yiewsley Library Building and the erection of a new residential building on the Yiewsley Library site (Falling Lane) and the erection of a new mixed-use building on the former Yiewsley Swimming Pool site (Otterfield Road), with a replacement library at ground floor level and residential uses above.</p> <p>Detailed Description: Demolition of existing Yiewsley Library Building and the erection of a 5-storey residential building, comprising 50 dwellings, with 38 undercroft parking spaces. The Otterfield Road site proposed the erection of a 6-storey building, comprising 50 dwellings, with 55 car parking spaces.</p>	<p>The development is not Air Quality Neutral and further action is required to reduce emissions.</p>	<p>Mitigation measures to reduce emissions can be applied on-site or off-site. Where this is not practical or desirable, pollutant off-setting will be applied. The level of mitigation required associated with the operation phase of the proposed development is calculated using Defra's Damage Cost Approach. The mitigation measures proposed were evaluated in terms of likely emission reductions onto local air quality. Wherever quantifiable, these are calculated and subtracted from the overall value due. When no quantification is possible, a flat rate discount is applied. The level of mitigation required to the proposed development for traffic emissions is £61,752. Once all deductions were applied, the remaining value of mitigation due is £18,526. Flat rate deductions applied are as follow: Travel Plan (15%), Green Sustainable Measures (5%), contribution to long term LBH strategic long-term strategies (50%), totalling a reduction of £43,226.</p>	<p>Therefore, a section 106 agreement with the LAP of £18,526 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.</p> <p>In addition, two Air Quality conditions are required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.</p>
<b>A40 / LONG LANE FOCUS AREA</b>			
<b>Planning Ref</b>	<b>6683/APP/2020/4068</b>		
DOUAY MARTYRS SCHOOL, CARDINAL HUME CAMPUS 86 LONG LANE ICKENHAM		the proposal is air quality neutral, and the capacity of the school (in terms of pupils) will	The development is considered clean by design, projected to have no detrimental effects on parking capacity, vehicle traffic and neighbouring amenity in the surrounding area. Therefore, no additional mitigation was required. Two

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
Demolition of existing buildings, construction of new single storey permanent school building to rear, construction of temporary teaching accommodation for part of construction period at ground and first floor levels, new hard and soft landscaping		not increase as a result of the proposed refurbishment and redevelopment of the site. As such, the total trips generated by the school will not vary significantly following the proposed newbuild facility and refurbishment/extension.	Air Quality conditions were required to both further develop the existing University's Travel Plan to make it more effective and measurable and manage the construction fleet as per Mayor requirements
<b>Planning Ref</b> <b>24596/APP/2021/4248</b>			
91 STATION ROAD WEST DRAYTON Erection of a three-storey building with lower ground floor level to accommodate student accommodation and a retail shop, following demolition of existing hot food takeaway and mini-cab premises with associated access works	Based on the information provided in the Transport Assessment report to support the planning application, the proposal is air quality neutral and air quality positive for transport emissions.	The energy model for the proposed development is unknown at the time of writing and therefore not possible to ascertain if the proposal is air quality neutral Air Quality / Positive for building emissions. This will be met by a condition. Should the proposal not be air quality neutral and or air quality positive, further action will be required to reduce emissions.	In addition, the following conditions will apply.  Condition Air Quality - Low Emission Strategy Conditions - Reducing Emissions from Demolition and Construction
<b>A40 SWAKELEYS ROAD FOCUS AREA</b>			
<b>Planning Ref</b> <b>17488/APP/2021/1971</b>			
IMPERIAL COLLEGE, SPORTS GROUND SIPSON LANE HARLINGTON Installation of Multi-Use Games Area and associated development, including 3m high chain link boundary fencing and 6 x 8m high floodlighting columns			Two Air Quality conditions are required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London
<b>UXBRIDGE ROAD FOCUS AREA</b>			
<b>Planning Ref</b> <b>15407/APP/2020/4165</b>			

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
<p>PARKSIDE HOUSE DE SALIS ROAD HILLINGDON UB10 OTG Construction of two additional storeys to the existing building to provide 8 x two-bedroom flats</p>		<p>The level of mitigation required associated with the operation phase of the proposed development is calculated using Defra's Damage Cost Approach.</p> <p>The mitigation measures proposed were evaluated in terms of likely emission reductions onto local air quality. Wherever quantifiable, these are calculated and subtracted from the overall value due. When no quantification is possible, a flat rate discount is applied. The level of mitigation required associated with the additional traffic emissions resulting from the additional number of residential units in relation to the proposed number of dwellings (1331/APP/2017/1883) is £50,527.</p>	<p>Therefore, a section 106 agreement with the LAP of £50,527 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.</p>
<b>A40/SOUTH RUISLIP FOCUS AREA</b>			
<b>Planning Ref</b>	<b>73901/APP/2021/37</b>		
<p>LANZ FARM 33 HARMONDSWORTH LANE HARMONDSWORTH Conversion of existing barn into 5no. flats with associated amenity space and parking provision</p>		<p>Using B1 as a proxy to calculate the air quality neutral status using the worst-case scenario traffic data, the proposed development is not air quality neutral for transport emissions. LBH requires new developments to incorporate air quality positive design measures from the outset and suitable mitigation measures</p>	<p>Once all deductions were applied, the remaining value of maximum mitigation due is £337,513. Flat rate deductions applied are as follow: Green Measures (5%).</p> <p>Therefore, a section 106 agreement with the LAP of a maximum £337,513 is recommended 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.</p>

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
		<p>to reduce pollution, especially in areas where the air quality is already poor (LBH Air Quality Local Action Plan 2019-2024), namely Focus Areas. The level of mitigation required associated with the operation phase of the proposed development is calculated using Defra's Damage Cost Approach.</p> <p>Assuming a worst-case scenario, the total level of mitigation required to the proposed development is £355,277. The mitigation measures proposed were evaluated in terms of likely emission reductions onto local air quality. Wherever quantifiable, these are calculated and subtracted from the overall value due. When no quantification is possible, a flat rate discount is applied.</p>	<p>An Air Quality condition is required to develop and implement a Low Emission Strategy and another to comply with the Mayors construction requirements</p>
<b>Planning Ref</b>	<b>73901/APP/2021/37</b>		
<p>VICTORIA RETAIL PARK VICTORIA ROAD RUISLIP HA4 0EL Erection of ancillary retail park coffee pod including car park and landscape alterations.</p>	<p>Using B1 as a proxy to calculate the air quality neutral status using the worst-case scenario traffic data, the proposed development is not air quality neutral for transport emissions.</p>	<p>Given the application is also within the AQMA, a reasonable scenario assuming only 20% of the cars (20% of 819 AADT = 164cars) would affect the air quality sensitive areas, the total level of mitigation required to the proposed development is £38,995. The mitigation measures proposed were evaluated in terms of likely emission reductions onto local</p>	<p>Therefore, a section 106 agreement with the LAP of a maximum £37,045 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 are required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London</p>

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
		<p>air quality. Wherever quantifiable, these are calculated and subtracted from the overall value due. When no quantification is possible, a flat rate discount is applied.</p> <p>Once all deductions were applied, the remaining value of mitigation due is £37,045. Flat rate deductions applied are as follow: Green Measures (5%).</p>	
<b>OSSIE GARVIN FOCUS AREA</b>			
<b>Planning Ref</b>	<b>39704/APP/2020/4259</b>		
<p>EALING COUNCIL OUTBOROUGH MIDDLESEX Application for the approval of Reserved Matters pursuant to outline planning permission reference 171562VAR dated 16/10/2017, condition 2 pertaining to the third phase of development (Phase 3): details relating to Layout, Appearance, Scale and Landscaping (Out of Borough Consultation from London Borough of Ealing)</p>	<p>The proposed development is located within London Borough of Hillingdon Air Quality Management Area (AQMA) and London Borough of Ealing AQMA. The proposed development is located within the LBH catchment areas of two Focus Areas: Hayes Focus Area and Ossie Garvin Focus Area, bringing traffic emissions which will add to current exceedances. In addition, it is in the catchment area of GLAs Southall High Street from Ossie Garvin Roundabout to Southall Park and Hayes Town Botwell Lane/Pump Lane.</p>	<p>The level of mitigation required associated with the operation phase of the proposed development is calculated using Defra's Damage Cost Approach. The calculations undertaken are deemed to be underestimated as they did not account for any energy centre nor vehicles servicing the site operation. The level of mitigation required to the proposed development for traffic emissions is £62,680.</p>	<p>Two Air Quality conditions are proposed to secure required mitigation and manage site plant emissions.</p>

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<b>Planning Ref</b>			
<b>69827/APP/2021/1565</b>			
<p>15-17 UXBRIDGE ROAD HAYES MIDDLESEX UB4 OJN Erection of a ground, mezzanine and 12 upper floors plus roof top plant and basement apart-hotel (Use Class C1) building to provide guest rooms and associated ancillary facilities, and associated landscaping/public realm works</p>		<p>The level of mitigation required associated with the operation phase of the proposed development is calculated using Defra's Damage Cost Approach.</p> <p>The mitigation measures proposed were evaluated in terms of likely emission reductions onto local air quality. Wherever quantifiable, these are calculated and subtracted from the overall value due. When no quantification is possible, a flat rate discount is applied.</p>	<p>The level of mitigation required to the proposed development for traffic emissions is £87,395. Once all deductions were applied, the remaining value of mitigation due is £65,546. Flat rate deductions applied are as follow: Travel Plan (15%), Green Sustainable Measures (5%), contribution to long term LBH strategic multimodal shift strategies (5%), totalling a reduction of £21,849.</p> <p>Therefore, a section 106 agreement with the LAP of £65,546 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.</p> <p>In addition, two Air Quality conditions are required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.</p>
<b>M4 CORRIDOR FOCUS AREA</b>			
<b>Planning Ref</b>			
<b>39207/APP/2021/3065</b>			
<p>FORMER GSK OFFICES, STOCKLEY PARK IRON BRIDGE ROAD WEST DRAYTON Redevelopment of the site to provide a last mile delivery centre (Use Class B8) and ancillary offices together with associated van storage deck and parking, access arrangements, landscaping and infrastructure</p>	<p>As per the new London Plan and the London Borough of Hillingdon Local Action 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 not air quality neutral with regard to transport-related emissions.</p>	<p>development should suitably mitigate air quality impacts on local air quality and be consistent with the local air quality action plan. Its guidance explicitly addresses (Paragraph: 008) mitigation options to ensure new development is appropriate for its location and unacceptable risks are prevented; mitigation options include planning conditions and obligations contributing to funding measures, including those identified in air quality action plans and low emission strategies, designed to offset the impact on air quality arising from new development.</p>	<p>The level of mitigation required associated with the operation phase of the proposed development is calculated using Defra's Damage Cost Approach.</p> <p>The total level of mitigation required to the proposed development for traffic emissions is £808,986.</p> <p>The mitigation measures proposed were evaluated in terms of likely emission reductions onto local air quality. Wherever quantifiable, these are calculated and subtracted from the overall value due. When no quantification is possible, a flat rate discount is applied. Flat rate deductions that can be applied are as follow: Travel Plan (15%), Green Measures (5%), Strategic Multi-Modal Shift (15%), plus £206, 032 reduction fee due to previous contributions to the LBH Local Action Plan for the same site. The measures contained in the air quality report will be discussed with the LBH so that a schedule of implementation for the selected measures is agreed. If no additional measures/contributions are possible, once all deductions are applied, the remaining value of mitigation due is £360,258.</p> <p>Therefore, a section 106 agreement with the LAP of £360,258 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</p>

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
		<p>The London Plan (March 2021) equally recognises the need to mitigate impacts on air quality by development, requiring development to be air quality positive specially within focus areas, actively contributing to reduce pollutant emissions to the atmosphere. LBH requires new developments to incorporate air quality positive design measures from the outset and suitable mitigation measures to reduce pollution, especially in areas where the air quality is already poor (LBH Air Quality Local Action Plan 2019-2024), namely Focus Areas. Furthermore, policy DME1 14 of the London Borough of Hillingdon Local Plan (part 2), requires active contribution towards the continued improvement of air quality, especially within the Air Quality Management Area.</p>	<p>emissions and or reduce human exposure to pollution levels. In addition, two Air Quality conditions are required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.</p>
<b>A4 CORRIDOR FOCUS AREA</b>			
<b>Planning Ref</b>	<b>41632/APP/2021/1301</b>		
<p>NCP HEATHROW FLIGHT PATH BATH ROAD SIPSON Provision of a new vehicular access to existing NCP car park via A4 Bath Road.</p>		<p>The application site falls within the A4 Corridor Focus Area (FA), which is a zone identified by both the Greater London Authority (GLA) and London Borough of Hillingdon (LBH) as experiencing pollutant concentrations above the limit value to safeguard human health, with high density of</p>	<p>The following Air Quality conditions are required.</p> <p>Condition Air Quality 1 – Green Wall/ Fence (to be agreed with the Landscape Officer)</p> <p>Condition Air Quality 2 - Reducing Emissions from Demolition and Construction</p>

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
		<p>population being exposed to such hazardous levels.</p> <p>However, the proposed development does not bring additional emissions into the study area. Therefore, there are no constraints in terms of air quality</p>	
<b>NORTHWOOD EAST FOCUS AREA</b>			
<b>Planning Ref</b>	<b>1464/APP/2021/1848</b>		
<p>ST EDMUND THE KING CHURCH PINNER ROAD NORTHWOOD MIDDLESEX Demolition of existing scout headquarters building and store/garage and proposed replacement with a new scout headquarters building incorporating the store</p>			<p>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>
<b>Planning Ref</b>	<b>23658/APP/2021/1296</b>		
<p>NORTHWOOD &amp; PINNER COTTAGE HOSP &amp; NORTHWOOD HEALTH CENTRE PINNER ROAD NORTHWOOD HA6 1TH Partial demolition, refurbishment and extension of the existing Cottage Hospital to provide a state-of-the-art health centre and the comprehensive redevelopment of the remaining Site to provide residential (Use Class C3) accommodation and ancillary works including car parking, cycle parking,</p>	<p>The additional vehicle movements brought by the proposal into the local network amount to a net increase of 566 additional vehicles in relation to the existing facilities. Using trip generation rates reported in the Transport Assessment, the proposed development is not air quality neutral for transport emissions</p>	<p>development should suitably mitigate air quality impacts on local air quality and be consistent with the local air quality action plan. Its guidance explicitly addresses (Paragraph: 008) mitigation options to ensure new development is appropriate for its location and unacceptable risks are prevented; mitigation options include planning conditions and obligations contributing to funding measures, including those identified in air quality action plans and low emission strategies, designed to offset the impact on air quality</p>	<p>The total level of mitigation required to the proposed development for traffic emissions is £215,383. The mitigation measures proposed were evaluated in terms of likely emission reductions onto local air quality. Wherever quantifiable, these are calculated and subtracted from the overall value due. When no quantification is possible, a flat rate discount is applied. Flat rate deductions that can be applied are as follow: Travel Plan (15%), Green Measures (5%), Strategic Multi-Modal Shift (15%). The measures are to be discussed with the LBH so that a schedule of implementation for the selected measures is agreed. If no additional measures/contributions are possible, once all deductions are applied, the remaining value of mitigation due is £150,768. Therefore, a section 106 agreement with the LAP of £150,768 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.</p>

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
landscaping and associated works.		arising from new development. The level of mitigation required associated with the operation phase of the proposed development is calculated using Defra's Damage Cost Approach for both NOx and PM2.5 emissions.	
<b>Planning Ref</b>			
<p>NORTHWOOD &amp; PINNER COTTAGE HOSP &amp; NORTHWOOD HEALTH CENTRE PINNER ROAD NORTHWOOD HA6 1TH</p> <p>Partial demolition, refurbishment and extension of the existing Cottage Hospital to provide a state-of-the-art health centre and the comprehensive redevelopment of the remaining Site to provide residential (Use Class C3) accommodation and ancillary works including car parking, cycle parking, landscaping and associated works</p>	<p>The additional vehicle movements brought by the proposal into the local network amount a net increase of 566 additional vehicles in relation to the existing facilities. Using trip generation rates reported in the Transport Assessment, the proposed development is not air quality neutral for transport emissions.</p>	<p>The level of mitigation required associated with the operation phase of the proposed development is calculated using Defra's Damage Cost Approach.</p> <p>The total level of mitigation required to the proposed development for traffic emissions is £215,383.</p> <p>The mitigation measures proposed were evaluated in terms of likely emission reductions onto local air quality. Wherever quantifiable, these are calculated and subtracted from the overall value due. When no quantification is possible, a flat rate discount is applied. Flat rate deductions that can be applied are as follow: Travel Plan (15%), Green Measures (5%), Strategic Multi-Modal Shift (15%). The measures are to be discussed with the LBH so that a schedule of implementation for the selected measures is agreed. If no additional</p>	<p>Therefore, a section 106 agreement with the LAP of £150,768 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.</p>

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
		measures/contributions are possible, once all deductions are applied, the remaining value of mitigation due is £150,768.	
<b>RUISLIP TOWN CENTRE FOCUS AREA</b>			
<b>Planning Ref</b>	<b>1209/APP/2021/2550</b>		
<p>RUISLIP MANOR SPORTS &amp; SOCIAL CLUB GROSVENOR VALE RUISLIP Retention of 2 no. portacabins and a covered stand (Retrospective).</p>	<p>In order to estimate the additional vehicle emissions associated with the proposed development that need to be mitigated, and as a proxy for business-as-usual conditions, it was assumed that 251 vehicles would be added to the road network 6 times per year (this is taking into account information contained in the Transport Statement and information facilitated by the applicant).</p>	<p>As per the London Plan and LBH Local Action Plan, developments need to be neutral as minimum and contribute actively to reduce pollution in Focus Areas, contributing to the reduction of emissions in these sensitive areas. As standard LBH practice, the level of mitigation required associated with the operation phase of the proposed development is calculated using Defra's Damage Cost Approach for pollutants NOx and PM2.5. The mitigation measures proposed were evaluated in terms of likely emission reductions onto local air quality. Wherever quantifiable, these are calculated and subtracted from the overall value due. When no quantification is possible, a flat rate discount is applied. The total level of mitigation required to the proposed development for traffic emissions is £123,013. After the flat discounts considered were applied (£24,603), the</p>	<p>Therefore, a section 106 agreement with the LAP of £1618 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. In addition, Two Air Quality conditions are required to deliver a robust Travel Plan, and construction emissions as required by the Mayor of London.</p>

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
		total annual emission fee was £98,411. Since the applicant indicated that big events only occur maximum 6 times per year, a rationing was calculated, which indicated a fee of £270 per event. Considering 6 big events per year, this equated to a £1618 fee.	
<b>UXBRIDGE FOCUS AREA</b>			
<b>Planning Ref</b>	<b>6270/APP/2021/3877</b>		
	Proposals are required to improve air quality within Focus Areas. In addition, the proposal is not air quality neutral for transport emissions.	The development is not Air Quality Neutral and further action is required to reduce emissions to acceptable levels. The proposal does not include suitable mitigation measures to remove the emissions associated with the operation of the proposal and therefore is contrary to local, regional, and national policies.	Reason for Refusal - The proposed development produces excessive pollutant emissions into the atmosphere, is not air quality neutral, and no suitable mitigation has been provided. As such, the development is contrary to Policy EM8 of the Hillingdon Local Plan: Part 1 (2012), Policy DME1 14 of the Hillingdon Local Plan: Part 2 (2020), Policy SI 1 (Part B) of the London Plan (2021) and Paragraph 186 of the National Planning Policy Framework (2021).
<b>Planning Ref</b>	<b>12019/APP/2021/2298</b>		
CEDAR HOUSE VINE LANE HILLINGDON Proposed change of use from Office (Class B1) to Assisted Living Care Beds (Class C2) with internal alterations	Proposals are required to improve air quality within Focus Areas. In addition, due to its nature, the proposed development has the potential to expose vulnerable individuals to air pollution. Based on the information provided, the proposal is not air quality neutral for transport emissions	As per the London Plan and LBH Local Action Plan 2019-2024, developments need to be neutral as minimum and positive in Focus Areas, contributing to the reduction of air pollutant emissions in these sensitive locations. LBH requires new developments to incorporate air quality positive design measures from the outset and suitable mitigation measures to reduce pollution, especially in areas where the air quality is already poor (LBH Air Quality Local Action Plan	The level of mitigation required to the proposed development for traffic emissions is £7,283. Once all deductions were applied, the remaining value of mitigation due is £6,191. Flat rate deductions applied are as follow: Green Sustainable Measures (5%), contribution to long term LBH strategic long-term strategies (10%), totalling a reduction of £1,092.  Therefore, a section 106 agreement with the LAP of £6,191 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 reduces human exposure to nitrogen dioxide levels. A condition is required to secure exposure reduction from the residents of the care home.

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
		<p>2019-2024), namely Focus Areas. Furthermore, policy DME1 14 of the emerging London Borough of Hillingdon Local Plan (part 2), requires active contribution towards the continued improvement of air quality, especially within the Air Quality Management Area. Finally, the London Plan (March 2021) requires development to be air quality neutral as minimum. The development is not Air Quality Neutral and further action is required to reduce emissions. In addition, exposure reduction measures need to be implemented to protect the care home residents from exposure to air pollution levels.</p> <p>Mitigation measures to reduce emissions can be applied on-site or off-site. Where this is not practical or desirable, pollutant off-setting will be applied. The level of mitigation required associated with the operation phase of the proposed development is calculated using Defra's Damage Cost Approach.</p>	
<b>Planning Ref</b>	<b>35755/APP/2021/4136</b>		
RIVER HOUSE RIVERSIDE WAY UXBRIDGE Demolition of existing buildings and the construction of a Class E(g)ii, E(g)iii, B2	The proposal is not air quality neutral for transport emissions.	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 £166,530. Flat rate deductions applied due to mitigation offered by the applicant are as follow: Travel Plan (to be secured by bond or condition to the occupier of the site) (15%), Green Sustainable Measures (5%), contribution to long term LBH strategic long-term strategies (0%; should any transport related

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
and B8 use employment unit with ancillary office accommodation, including new vehicular access, associated external yard areas, HGV and car parking, servicing, external lighting, landscaping, infrastructure and associated works		Mitigation measures to reduce emissions can be applied on-site or off-site. Where this is not practical or desirable, pollutant off-setting will be applied. The level of mitigation required associated with the operation phase of the proposed development is calculated using Defra's Damage Cost Approach for both NOx and PM <sub>2.5</sub> emissions.	<p>contributions be offered, the flat rate can be adjusted accordingly), totalling a reduction of £33,306.</p> <p>Therefore, a section 106 agreement with the LAP of £133,224 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 reduces human exposure to nitrogen dioxide levels. A condition is required to secure definition and implementation of the Travel Plan by the occupier of the site to achieve the 15% reduction sought. In addition, the following conditions will apply.</p> <p>Condition Air Quality - Low Emission Strategy Conditions - Reducing Emissions from Demolition and Construction</p>
<b>Planning Ref</b>	<b>39439/APP/2021/2230</b>		
	Using retail use to calculate the air quality neutral status using the worst-case scenario traffic data, the proposed development is air quality neutral for transport emissions	<p>LBH requires new developments to incorporate air quality positive design measures from the outset and suitable mitigation measures to reduce pollution, especially in areas where the air quality is already poor (LBH Air Quality Local Action Plan 2019-2024), namely Focus Areas. The level of mitigation required associated with the operation phase of the proposed development is calculated using Defra's Damage Cost Approach.</p> <p>The total level of mitigation required to the proposed development is £19,573. The mitigation measures proposed were evaluated in terms of likely emission reductions onto local air quality. Wherever quantifiable, these are calculated and subtracted from the overall value due. When</p>	<p>Once all deductions were applied, the remaining value of mitigation due is £16,637. Flat rate deductions applied are as follow: Travel Plan 10% (this is assuming Sainsbury retains one) and Green Measures (5%) as click and collect may reduce attraction to the shop itself.</p> <p>Therefore, a section 106 agreement with the LAP of a maximum £16,637 is recommended 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. In addition, an Air Quality condition is required to develop and implement a Low Emission Strategy and another for compliance with the Mayors construction requirements.</p>

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
		no quantification is possible, a flat rate discount is applied.	
<b>Planning Ref</b>	<b>39707/APP/2021/4456</b>		
<p>BUCKINGHAMSHIRE COUNTY COUNCIL OUTBOROUGH MIDDLESEX 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 (B8 (Data Centre)) of up to 163,000 sqm (GEA) delivered across 3 buildings. The scheme includes site wide landscaping and the creation of Parkland. The data centre buildings include ancillary offices, internal plant and equipment and emergency back-up generators and associated fuel storage. The development 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 650 metres of LBH Hillingdon Hospital Focus Area and approximately 550 metres of LBH Uxbridge Focus Area (please see Figure 1), 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. In addition, 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 which could be replaced by alternative cleaner technologies, which in turn 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 effects of this pollutant on human health.</p>	<p>The development is not sustainable 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 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.</p> <p>The proposed development is not sustainable, not air quality neutral, not clean by design 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, counterfeiting the LA efforts to improve air quality and safeguard citizen's health.</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
		<p>Given the significant number of diesel backup generators (171), 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>Finally, location plays a central role in the planning decision making process and the location of the proposed development is inappropriate given the LBH Plan allocated new homes area in the immediate vicinity of the proposed development (please see Figure 1). Therefore, new residents of this area would be exposed to unacceptable emission levels and resulting pollution concentrations from the operation of the proposed facility.</p>	
<b>Planning Ref</b>	<b>62106/APP/2021/2555</b>		
FORMER TARA KINDERGARTEN CROSS ROAD UXBRIDGE UB8 2UQ	The proposed development is to be car free and therefore		The total level of mitigation required to the proposed development for traffic emissions equates on average to 0.010 tonnes per year of NOx and 0.002 tonnes per year of PM2.5. Given the nature of the proposed development being

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
Demolition of the existing building (Use Class F1) and construction of a residential building comprising 9 no. residential apartments (Use Class C3), associated landscape works and parking	transport emissions will converge to zero		car free, traffic emissions will be converging to zero overtime. Therefore, no section 106 contribution is required in this instance. Two Air Quality conditions are required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.
<b>Planning Ref</b>	<b>72219/APP/2021/1535</b>		
1-3 BAKERS ROAD UXBRIDGE UB8 1RG Change of use of first floor from gymnasium to 1 x 2-bed and 1 x 1-bed self-contained flats (Use Class C3).		It is noted that the application site is on a first-floor premise (occupied by sports direct) facing a bus depot / bus stop with frequent bus idling occurrences which were not taken into account by the modelling exercise undertaken in the air quality report submitted to support the planning application. Therefore, there is the risk of outdoor polluted air ingress into the proposed application site. It is also noted that extract vents for the MVHR units are to be located on the side elevations of the property in order to avoid hazardous levels of pollution being drawn into the system from idling buses, cars, etc. and additional F7 (NO2) filters on the air intake to the unit are to be implemented and maintained throughout the lifetime of the operation of the site, servicing the first floor of the application site. The specification of the NO2 removal system provided by the applicant is accepted by LBH.	Two Air Quality conditions are required to manage suitable mechanical ventilation filtration, and 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
<b>Planning Ref</b>			
<b>74089/APP/2020/3305</b>			
<p>LAND OFF HAYES END ROAD HAYES END ROAD HAYES UB4 8EH</p> <p>Re-consultation on amended plans for Demolition of existing buildings and redevelopment of the site to provide a building of 4 storeys to provide residential units (Use Class C3) with associated residential amenity space, landscaping, car and cycle parking, refuse storage and access. Detailed Description: 27 residential units comprising 8 x 1-bedroom, 16 x 2-bedroom and 3 x 3-bedroom.</p>	<p>Using trip generation rates reported in the Transport Assessment, the proposed development is not air quality neutral for transport emissions for the C3 use proposed.</p>	<p>LBH requires new developments to incorporate air quality positive design measures from the outset and suitable mitigation measures to reduce pollution, especially in areas where the air quality is already poor (LBH Air Quality Local Action Plan 2019-2024), namely Focus Areas. The level of mitigation required associated with the operation phase of the proposed development is calculated using Defra's Damage Cost Approach.</p> <p>The mitigation measures proposed were evaluated in terms of likely emission reductions onto local air quality. Wherever quantifiable, these are calculated and subtracted from the overall value due. When no quantification is possible, a flat rate discount is applied.</p>	<p>The level of mitigation required to the proposed development for traffic emissions is £32,037.</p> <p>Once all deductions were applied, the remaining value of mitigation due is £27,231. Flat rate deductions applied are as follow: Travel Plan (10%), Green Sustainable Measures (5%).</p> <p>Therefore, a section 106 agreement with the LAP of £27,231 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.</p> <p>In addition, two Air Quality conditions are required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London.</p>
<b>HILLINGDON HOSPITAL FOCUS AREA</b>			
<b>Planning Ref</b>			
<b>4058/APP/2022/671 and 4058/APP/2021/4167</b>			
<p>HILLINGDON HOSPITAL PIELD HEATH ROAD HILLINGDON UB8 3NN</p> <p>Demolition of the following buildings within the grounds of Hillingdon Hospital: Busy Bees, Alderborne Unit, Elderly Day Hospital, Beaconsfield, Adult Audiology, Quebec</p>	<p>As per the London Plan, policy SI 1 Part D, in order to reduce the impact on air quality during the demolition phase development proposals must demonstrate how they plan to comply with the Non-Road Mobile</p>	<p>In alignment with the Mayor's construction management guidance (The Control of Dust and Emissions During Construction and Demolition Supplementary Planning Guidance), demolition impacts are to be minimised to the maximum possible extent</p>	<p>Routes for demolition traffic involved in the delivery/removal of equipment and materials to and from the Site agreed with LBH, TFL and other necessary authorities prior to demolition commencing. Routes to be avoided are marked in map attached to the S106. Movements of HGV large or abnormal loads to be addressed in advance with LBH, other relevant highway authorities and the Police in order to ensure compliance with regulations and advance notification for neighbours.</p>

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Planning Conditions Text/S106 Agreements/ Status/Outcome
Ward, Pinewood Ward, Osterley Ward, Churchill Ward, Middlesex Ward, Lister Ward, Pagett Ward Diabeticare Ward, Greenacres, Postgraduate Medical Centre, HV Plant Room, Annex Corridor and Partial Canteen (Prior Notification under Schedule 2, Part 11, Class B The Town and Country Planning (General Permitted Development) (England) Order 2015 (as amended)).	Machinery Low Emission standards and reduce emissions from the demolition of buildings following best practice guidance, namely The Control of Dust and Emissions During Construction and Demolition Supplementary Planning Guidance, Mayor of London, 2014	using good practice for mitigating and managing air quality impacts with the overarching aim of protecting public health and the environment. This guidance is to be applied in the demolition management plan to be developed and implemented during the demolition works	Two Air Quality condition are required to manage demolition emissions as required by the Mayor of London
<b>OUTSIDE FOCUS AREAS</b>			
<b>Planning Ref</b>	<b>2297/APP/2021/2704</b>		
<b>MINET JUNIOR SCHOOL AVONDALE DRIVE HAYES</b> Extensions, remodelling and refurbishment of the existing Nursery, Infant and Junior Schools	The Site is high-risk in relation to nuisance dust emissions. Consequently, a range of environmental management controls will need to be developed with reference to GLA'S guidance for high-risk sites. The mitigation measures would be included within a Construction Environmental Management Plan (CEMP) and implemented to prevent the release of dust to the atmosphere and / or being deposited on nearby receptors	The application site is not located within a Focus Area, and proposals will not result in a change of traffic in the local network. In addition, the proposed development is Air Quality Neutral. Notwithstanding this, the application site is within an AQMA and LBH recommends that mitigation measures listed in the School's Toolkit are considered to improve air quality in the area	An Air Quality condition was required to manage construction emissions for a High-Risk Site
<b>Planning Ref</b>	<b>3898/APP/2021/2048</b>		
HEDGEWOOD SPECIAL SCHOOL WEYMOUTH ROAD HAYES UB4 8NF		The proposed development is air quality neutral and within LBH AQMA but outside any of	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
Proposed installation of two double modular classrooms units for a temporary period of 5 years and expansion of staff car park with associated landscape works, including removal and relocation of existing temporary structures (Re-consultation: Additional Information Submitted)		the defined Focus Areas. However, given the special character of the proposed school, its catchment area is undefined, with students coming from all areas of the Borough, two conditions are required	
<b>Planning Ref</b>	<b>8393/APP/2021/2191</b>		
WIDEWATER PLACE, NORGINE HOUSE MOORHALL ROAD HAREFIELD Change of use from Offices to 49 residential flats (Use Class C3) (Application for Prior Approval under Schedule 2, Part 3, Class O of the Town and Country Planning (General Permitted Development) (England) Order 2015 (as amended))		The proposal is air quality neutral in alignment with the London Plan requirements both individually and cumulatively with application 47321/APP/2021/2190	Two Air Quality conditions are required to develop and implement a Low Emission Strategy and manage construction emissions as required by the Mayor of London
<b>Planning Ref</b>	<b>47321/APP/2021/2190</b>		



