

# Clean Air Barnet Insight Report 2024 Breathe London Air Quality - Barnet.

## Air Quality - getting better but still not good enough

This Clean Air Barnet Insight Report is based on analysis of available Breathe London air quality data. The data may have some gaps at times when Breathe London monitors were not working.

The report is intended to inform decisions and actions to improve our air quality.

### Summary

- **Barnet had fewer Breathe London monitors at the end of 2024 than at the start of the year.**
- **2024 annual average air quality in Barnet met the UK legal limits but exceeded World Health Organization (WHO) guidelines.**
- **Barnet had too many breaches of WHO average daily targets.**
- **Monthly averages in Barnet were lowest in April and highest in November.**
- **Most Barnet locations are in the bottom 50% of London Breathe locations for annual average levels of NO<sub>2</sub> and PM<sub>2.5</sub>.**
- **Barnet air quality has improved since 2022 but PM<sub>2.5</sub> improvements may be slowing.**
- **2024 air quality across London improved at most Breathe London locations with many locations seeing greater improvements than achieved in Barnet.**

### Analysis

#### Barnet had fewer Breathe London monitors at the end of 2024 than at the start of the year.

Breathe London<sup>1</sup> Air Quality nodes measure Nitrogen Dioxide (NO<sub>2</sub>) and Particulate Matter (PM<sub>2.5</sub>).

At the start of 2024 Barnet had 11 nodes in operation, four of which had also been operating for all of 2022 and 2023. These four ceased operating on December 14th, 2024, due to funding by the London Mayor being paused. Nodes at Golders Green and Fairway School ceased operating mid-2024 due to funding ending. At the end of the year there were only 5 active nodes. At the time of writing this report it is not clear what will happen to the Breathe London network in 2025.

In the appendix we provide a list of Barnet nodes, start and end dates and a map showing locations.

#### 2024 Annual Average Air Quality in Barnet met the UK limits but exceeded WHO guidelines

The 9 Barnet locations met the UK annual limits but exceeded the World Health Organisation (WHO) NO<sub>2</sub> and PM<sub>2.5</sub> annual average air quality guidelines (10µg/m<sup>3</sup> and 5µg/m<sup>3</sup> respectively).

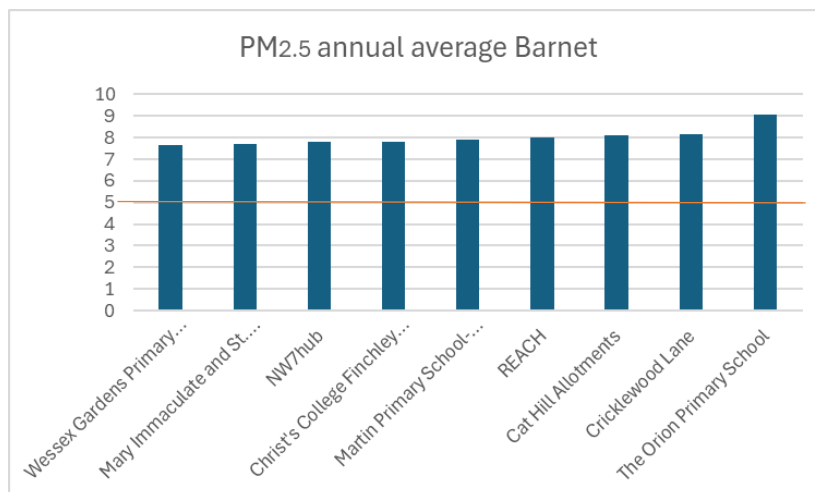
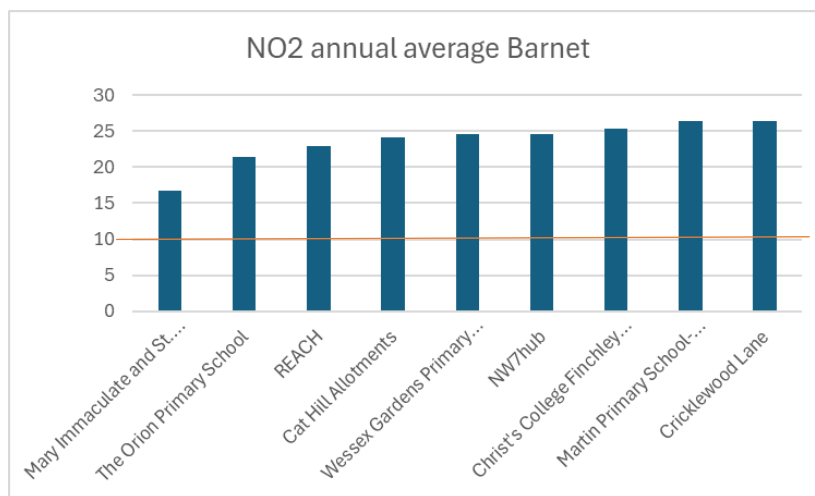
The NO<sub>2</sub> annual average was lowest at Mary Immaculate (located by a quiet road) and highest at Cricklewood Lane. Eight of the nine locations had averages between 21.5 and 26.5µg/m<sup>3</sup> - more than twice the WHO guideline.

PM<sub>2.5</sub> was also lowest at Wessex Gardens Primary (slightly lower than at Mary Immaculate) and was highest at The Orion Primary School. Averages ranged between 7.7 and 9.0µg/m<sup>3</sup> - over 50% higher than the WHO guideline. Meeting WHO guidelines will require improvements of around 50-60% in NO<sub>2</sub> levels and 30-40% in PM<sub>2.5</sub> levels.

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<sup>1</sup> <https://www.breathelondon.org/>

Barnet annual average 2024	NO2	PM2.5
Cat Hill Allotments	24.2	8.1
Christ's College Finchley Breathe	25.3	7.8
Cricklewood Lane	26.5	8.2
Martin Primary School	26.4	7.9
Mary Immaculate and St. Peter's Church	16.7	7.7
NW7 Hub	24.6	7.8
REACH	22.9	8.0
The Orion Primary School	21.5	9.0
Wessex Gardens Primary School	24.6	7.7



Part year average	NO2	PM2.5
Fairway School and Childrens Centre	17.9	7.3
Golders Green Underground Station	29.3	6.9

### Barnet had too many breaches of WHO average daily targets.

The World Health Organisation has set a target of no more than four days in a year being above the average daily guideline for NO<sub>2</sub> (25 µg/m<sup>3</sup>) and PM<sub>2.5</sub> (15 µg/m<sup>3</sup>). This target was exceeded at all locations in Barnet. There were between 50 and 168 daily breaches of NO<sub>2</sub> and between 24 and 44 of PM<sub>2.5</sub>.

The number of breaches suggests that the annual averages are not influenced by a small number of high spikes of “poor” air but is a result of many days of “fair” air – a health concern for exposure for long periods.

Daily Breaches of WHO guidelines	NO <sub>2</sub>	PM <sub>2.5</sub>
Cat Hill Allotments	131	33
Christ’s College Finchley	151	33
Cricklewood Lane	166	31
Martin Primary School	168	37
Mary Immaculate and St. Peter’s Church	50	31
NW7 Hub	141	24
REACH	128	28
The Orion Primary School	110	44
Wessex Gardens Primary School	150	27

### Monthly averages were lowest in April and highest in November when they were two to three times higher.

April saw the lowest NO<sub>2</sub> monthly averages at eight locations and lowest PM<sub>2.5</sub> at 7 locations.

November saw the highest NO<sub>2</sub> monthly averages at seven of the nine operating locations and highest PM<sub>2.5</sub> at all nine.

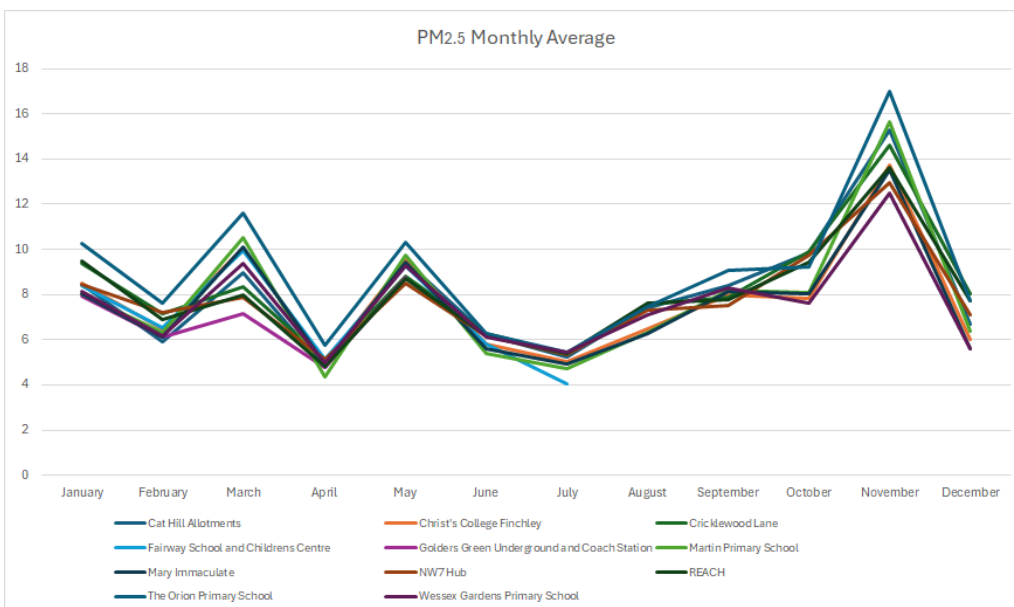
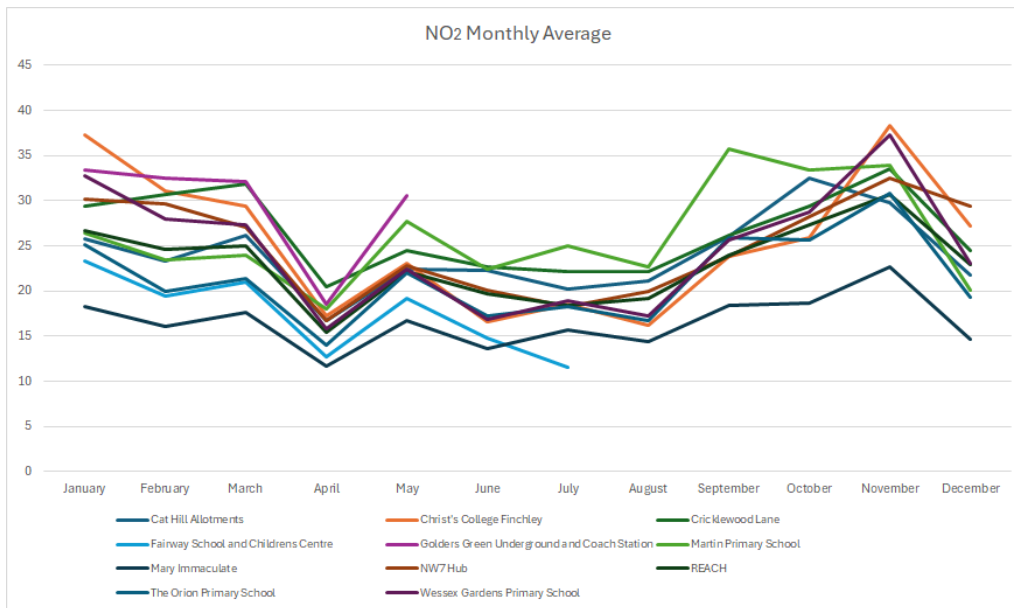
November NO<sub>2</sub> was around twice as high as April levels and PM<sub>2.5</sub> nearly three times as high.

	NO <sub>2</sub> monthly average range µg/m <sup>3</sup> .	PM <sub>2.5</sub> monthly average range µg/m <sup>3</sup> .
April	11.7 – 20.4	4.3 – 5.8
November	22.6 - 38.4	12.5 - 17.0

Mary Immaculate had the lowest NO<sub>2</sub> monthly average for eleven months. Martin Primary was the highest in four months, Golders Green three, Cricklewood Lane and Christ’s College Finchley two each and NW7 Hub one.

The lowest monthly average PM<sub>2.5</sub> was shared across seven locations. The Orion had the highest average in nine months, Cricklewood Lane two and REACH one.

The charts for monthly averages show that levels of pollution move up and down across the year in similar patterns across all locations suggesting that hyper-local emissions are not the only factor impacting on air quality.



**Barnet air quality has improved since 2022 but PM2.5 improvements may be slowing.**

Available Breathe data for the four locations operating between 2022 and 2024 shows that air quality improved over the two year period by 9 to 16% (NO<sub>2</sub>) and 7 to 25% (PM<sub>2.5</sub>).

In 2024, compared to 2023, NO<sub>2</sub> levels continued to reduce. The Orion Primary School and Wessex Gardens Primary Schools both improved by 9%, Martin Primary Schools improved 5% and Cat Hill Allotments 2%.

PM<sub>2.5</sub> shows a different picture with Cat Hill Allotments and Wessex Gardens reducing by 6% and 3% respectively while The Orion Primary School saw no improvement and Martin Primary School saw an increase of 5%.

NO <sub>2</sub>	2022	2023	2024	Change 24/22	Change 24/23
Cat Hill Allotments	26.6	24.6	24.2	9%	2%
Martin Primary School	30.4	27.9	26.4	13%	5%
The Orion Primary School	25.7	23.5	21.5	16%	9%
Wessex Gardens Primary School	29.3	26.9	24.6	16%	9%

PM <sub>2.5</sub>	2022	2023	2024	Change 24/22	Change 24/23
Cat Hill Allotments	10.9	8.7	8.1	25%	6%
Martin Primary School	8.5	7.5	7.9	7%	-5%
The Orion Primary School	10.2	9.0	9.0	11%	0%
Wessex Gardens Primary School	9.1	7.9	7.7	16%	3%

## Comparison of Barnet with other London locations

### Most Barnet locations are in the bottom 50% of London Breathe locations for annual average levels of NO<sub>2</sub> and PM<sub>2.5</sub>

Breathe London 2024 averages have been calculated for 187 nodes with NO<sub>2</sub> data and 184 nodes with PM<sub>2.5</sub> data.

Seven Barnet locations were ranked in the bottom 40% for NO<sub>2</sub> while Mary Immaculate and St. Peter's Church had the 8<sup>th</sup> best annual average.

Piccadilly Circus in Westminster was ranked 73<sup>rd</sup> – better than seven of the Barnet locations.

NO <sub>2</sub>	Ranking (out of 187)	Ranking %
Mary Immaculate and St. Peter's Church	8	4%
The Orion Primary School	58	31%
REACH	81	43%
Cat Hill Allotments	114	61%
Wessex Gardens Primary School	118	63%
NW7 Hub	119	64%
Christ's College Finchley Breathe	129	69%
Martin Primary School	141	75%
Cricklewood Lane	144	77%

For PM<sub>2.5</sub>, eight Barnet locations were in the bottom 50% and The Orion Primary School was 171<sup>st</sup> out of 184.

Piccadilly Circus in Westminster was ranked 157<sup>th</sup> – worse than eight of the Barnet locations.

PM2.5	Ranking (out of 184)	Ranking %
Wessex Gardens Primary School	79	43%
Mary Immaculate and St. Peter's Church	84	46%
NW7 Hub	99	54%
Christ's College Finchley Breathe	100	54%
Martin Primary School	107	58%
REACH	116	63%
Cat Hill Allotments	126	68%
Cricklewood Lane	133	72%
The Orion Primary School	171	93%

### 2024 air quality across London improved at most Breathe London locations with many locations seeing greater improvements than achieved in Barnet.

NO<sub>2</sub> 2023 and 2024 data is available for 110 locations and PM<sub>2.5</sub> for 105 locations (including the four Barnet locations mentioned above).

In 2024, the NO<sub>2</sub> annual average improved at 105 of 110 locations and PM<sub>2.5</sub> improved at 98 of 105 locations.

NO<sub>2</sub> improved by more than 5% at 66 locations and by more than 10% at 16 locations. Comparing Barnet locations to the rest of London shows that Wessex Gardens Primary School and The Orion Primary School had the 23<sup>rd</sup> and 25<sup>th</sup> highest percentage improvement (9%). Martin Primary School and Cat Hill Allotments were ranked 63<sup>rd</sup> and 100<sup>th</sup> respectively.

In absolute terms, Wessex Gardens Primary School, which saw the largest NO<sub>2</sub> improvement in Barnet (2.3 µg/m<sup>3</sup>), was 19<sup>th</sup> out of 110. The Orion Primary School (2.0 µg/m<sup>3</sup>) was 36<sup>th</sup>, Martin Primary School (1.5 µg/m<sup>3</sup>) 50<sup>th</sup>, and Cat Hill Allotments (0.4 µg/m<sup>3</sup>) was 100<sup>th</sup>.

PM<sub>2.5</sub> improved by more than 5% at 68 locations and by more than 10% at 11 locations. Martin Primary School in Barnet (ranked 105<sup>th</sup> out of 105) saw the highest increase in annual average of all locations (5%). The Orion Primary School was 101<sup>st</sup>, Cat Hill Allotments was 59<sup>th</sup> and Wessex Gardens Primary School 88<sup>th</sup>.

In absolute terms, Cat Hill Allotments (0.5 µg/m<sup>3</sup> improvement) was 58<sup>th</sup> out of 105, Wessex Gardens Primary School (0.2 µg/m<sup>3</sup>) was 87<sup>th</sup>, The Orion Primary School (no improvement) was 101<sup>st</sup> and Martin Primary School (0.3 µg/m<sup>3</sup> increase) 104<sup>th</sup>.

The best and worse averages for NO<sub>2</sub> were lower in 2024 compared to 2023. The best PM<sub>2.5</sub> average was also lower in 2024, but the worse average was unchanged.

	2023 range of annual averages	2024 range of annual averages
NO <sub>2</sub>	15.7 - 40.8 µg/m <sup>3</sup>	13.2 - 36.6 µg/m <sup>3</sup>
PM <sub>2.5</sub>	6.6 - 10.2 µg/m <sup>3</sup>	6.2 - 10.2 µg/m <sup>3</sup>

## Appendix - Barnet Breathe nodes

Table 1: Recorded operating dates for Breathe London Barnet nodes

Node	Start Date	Status at 31/12/2024
The Orion Primary School	10/6/2021	End 14/12/2024
Wessex Gardens Primary School	10/6/2021	End 14/12/2024
Martin Primary School-Playground	21/7/2021	End 14/12/2024
Cat Hill Allotments	4/9/2021	End 14/12/2024
Residents Action on Climate and Health (REACH)	7/7/2023	Active
Cricklewood Lane	7/7/2023	Active
Christ's College Finchley	16/6/2023	Active
Golders Green Underground and Coach Station	27/7/2023	End 26/6/2024
NW7 Hub	7/9/2023	Active
Fairway School and Children's Centre	22/9/2023	End 13/7/2024
Mary Immaculate and St Peter's Church (Chipping Barnet Food Bank)	17/11/2023	Active

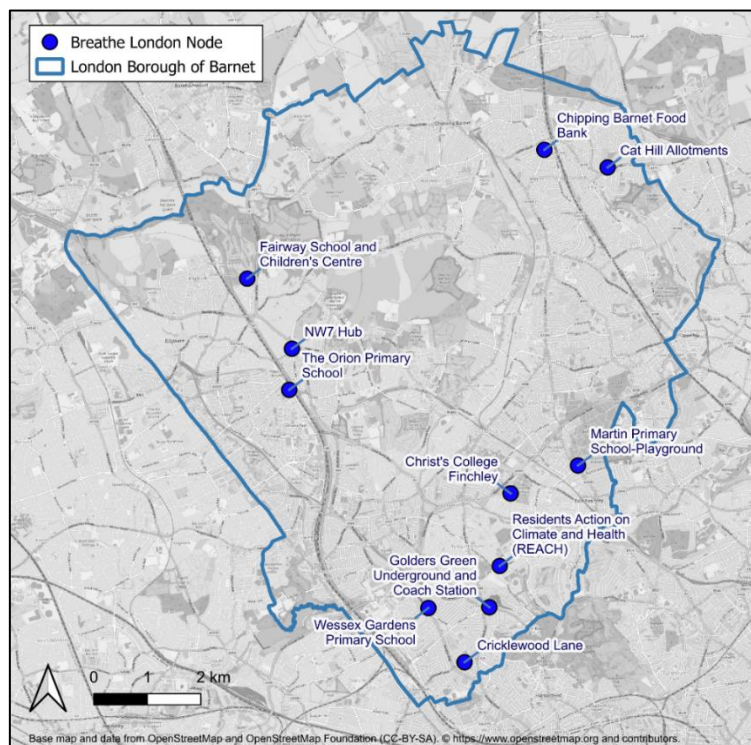


Figure 1: Location of Breathe London Nodes within Barnet (Chipping Food Bank is located at Mary Immaculate and St. Peter's Church in New Barnet)