



# Consultation Report for the Revocation of the Maybank, Wolstanton, Porthill AQMA

In fulfilment of Part IV of the Environment Act 1995  
Local Air Quality Management

Date: February 2025

Information	Newcastle-under-Lyme Borough Council Details
<b>Local Authority Officer</b>	Rob Thomas (Environmental Protection Team)
<b>Department</b>	Environmental Protection, Regulatory Services
<b>Address</b>	Newcastle-under-Lyme Borough Council Castle House Barracks Road Newcastle under Lyme ST5 1SR
<b>Telephone</b>	01782 717717
<b>E-mail</b>	<a href="mailto:environmental_health@newcastle-staffs.gov.uk">environmental_health@newcastle-staffs.gov.uk</a>
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# 1 Background Information

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children, the elderly, and those with existing heart and lung conditions. There is also often a strong correlation with equalities, because areas with poor air quality are also often less affluent areas<sup>1,2</sup>. Newcastle-under-Lyme Borough Council has been taking action to reduce air pollution across the borough to reduce risk to human health and the environment as a whole.

Under the Environment Act 1995 all District and Borough local authorities (often called ‘second tier’ Councils) are obliged to review and assess air quality in line with the Government’s air quality strategy. The Department for Environment, Food and Rural Affairs (DEFRA) has the national lead, and closely supervises the work of local authorities in relation to their air quality duties.

The National Air Quality Strategy sets out Air Quality Objectives for certain pollutants and local authorities are required to ensure that these objectives are met.

These Air Quality Objectives consist of

- concentrations for each particular air pollutant which are considered to be acceptable in terms of what is scientifically known about the effects of each pollutant on health and on the environment,
- an averaging period for each air pollutant,
- a compliance date by which the Objective should be achieved.

Where there is evidence that there will be sustained exceedances of one or more Air Quality Objective, then the second-tier authority has a legal duty to declare an Air Quality Management Area (AQMA).

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<sup>1</sup> Public Health England. Air Quality: A Briefing for Directors of Public Health, 2017

<sup>2</sup> Defra. Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

Newcastle-under-Lyme Borough Council has been assessing air quality across the Borough for more than 20 years and publishing regular annual reports on progress with this. Copies of the annual reports can be found in the [Air Quality Management section](#) of the Borough Councils website.

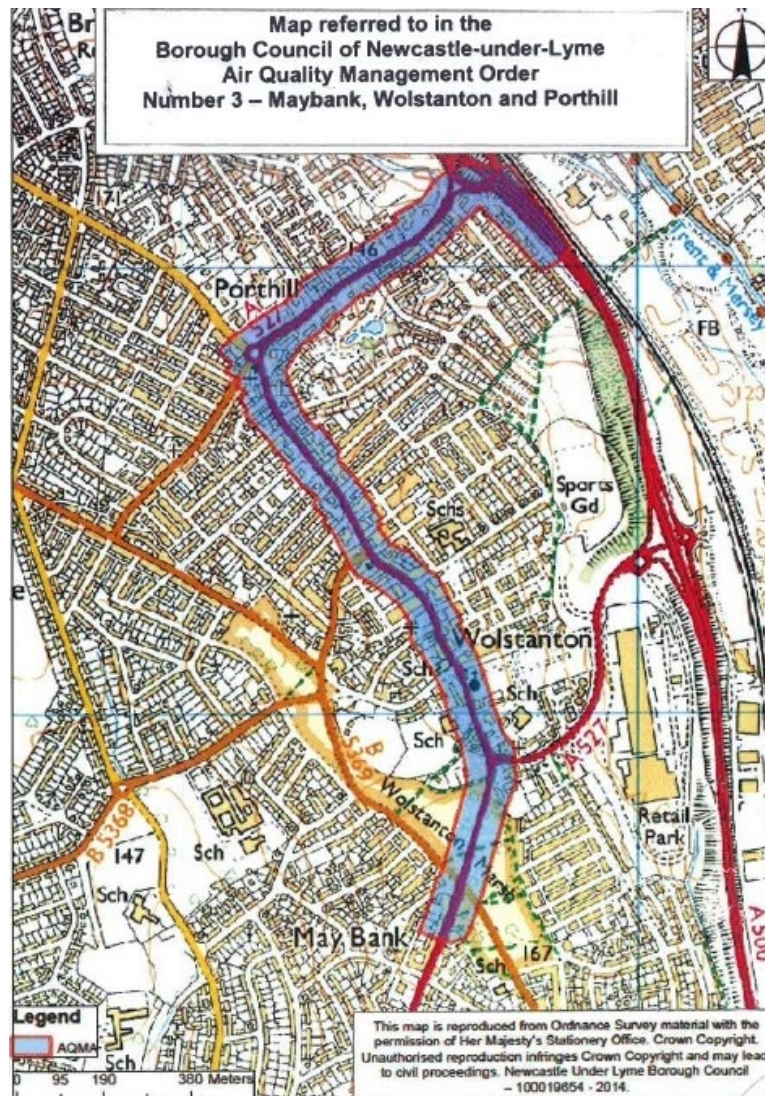
Previously, air quality monitoring data from the Borough Councils network of monitoring locations led to the conclusion that the Air Quality Objective for nitrogen dioxide (NO<sub>2</sub>) of 40µg/m<sup>3</sup> (micrograms per cubic meter) measured as an annual mean was being exceeded in four discrete areas of the Borough, namely:

- Liverpool Road, Kidsgrove
- Newcastle-under-Lyme Town Centre
- Maybank-Wolstanton-Porthill
- Little Madeley; which revocation is subject of this report.

The dominant source of nitrogen dioxide emissions in each of these areas was road traffic.

An AQMA, Air Quality Management Area 3, was declared on the 15th January 2015 in relation to parts of Maybank, Wolstanton and Porthill. The area covered by this AQMA is illustrated in Figure 1.

Figure 1. AQMA 3 - Maybank, Wolstanton, Porthill Areas



## 2 Historical Air Quality in Maybank, Wolstanton & Porthill

Detailed analysis of air quality in the Maybank, Wolstanton, Porthill area during 2015 led to the following conclusions:

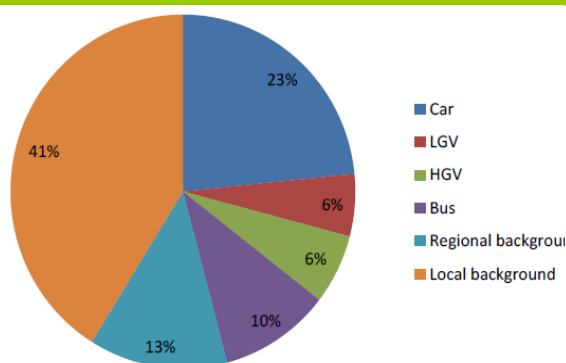
A combination of air quality monitoring and air quality dispersion modelling calculated that 104 households (residential properties) were predicted to be exposed to airborne concentrations of nitrogen dioxide (NO<sub>2</sub>) above 40µg/m<sup>3</sup> averaged over a calendar year. These properties were concentrated at the bottom of Porthill Bank / Vale View and in May Bank, High Street.

The biggest single source of NO<sub>2</sub> was identified as being 'background' which was identified as contributing between 41 – 44% of all NO<sub>2</sub>. The total concentration of a pollutant comprises those from explicit local emission sources such as roads, chimneystacks, etc., and those that are transported into an area by the wind from further away. If all the local sources were removed, all that would remain is that which comes in from further away; it is this component that is called 'background'.

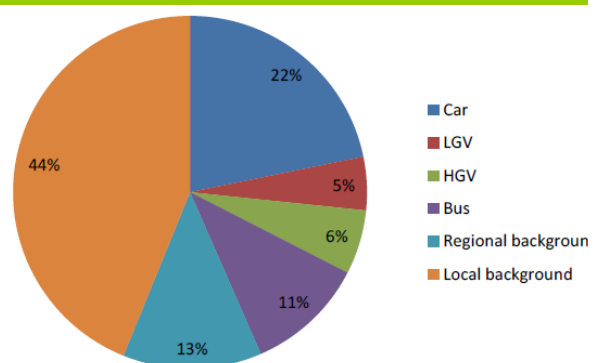
The biggest single 'local' sources of NO<sub>2</sub> were identified as being from

- Cars (22 – 23%)
- Buses (10 – 11%)
- Heavy Goods Vehicles (6%)
- Light Goods Vehicles (5-6%)

**Figure 2** Percentage contribution to the annual mean NO<sub>2</sub> concentration in Porthill Bank



**Figure 3** Percentage contribution to the annual mean NO<sub>2</sub> concentration in May Bank High Street



The relatively high contribution of local traffic emissions at Porthill Bank were due to traffic congestion particularly at peak periods, traffic volume and low speeds, as well as increased engine loading due to the terrain. The contribution at May Bank High Street was due to the influence of the traffic lighted road junction, the puffin crossing serving the shops and local car park, as well as the high traffic volume and relatively low traffic speeds.

It was established that it would be necessary to reduce local traffic emissions by 9.5%, in order to meet the Air Quality Objective for NO<sub>2</sub>, and an Air Quality Action Plan (AQAP) was published in 2015 to work towards this goal.

### 3 Recent Air Quality in Maybank, Wolstanton & Porthill

Since the declaration of the AQMA, the Borough Council has continued to monitor air quality within this AQMA and at many other locations to track the impact of national and local measures to improve air quality.

The presence of nitrogen dioxide in the air at a local level can be influenced by a number of factors. The most important is whether there are significant local emissions sources. The dominant source of nitrogen emissions is road traffic. However, other combustion sources such as commercial and industrial fossil fuel heating systems can also make a contribution.

Nitrogen dioxide is a relatively stable gas in the atmosphere and so nitrogen dioxide can travel large distances, meaning that NO<sub>2</sub> produced elsewhere can contribute to background concentrations in Newcastle under Lyme, and vice versa.

Meteorological factors can also have a significant influence. Relatively strong winds and strong sunlight can tend to disperse or cause chemical breakdown of NO<sub>2</sub>. On the other hand, atmospheric inversions can inhibit dispersion, and cold weather can encourage people to turn on their heating and travel by car rather than walk – both of which adds to nitrogen dioxide emissions.

These variable factors mean that monitoring of nitrogen dioxide must take place over a long timescale, often years, in order to develop a meaningful idea about trends in air quality.

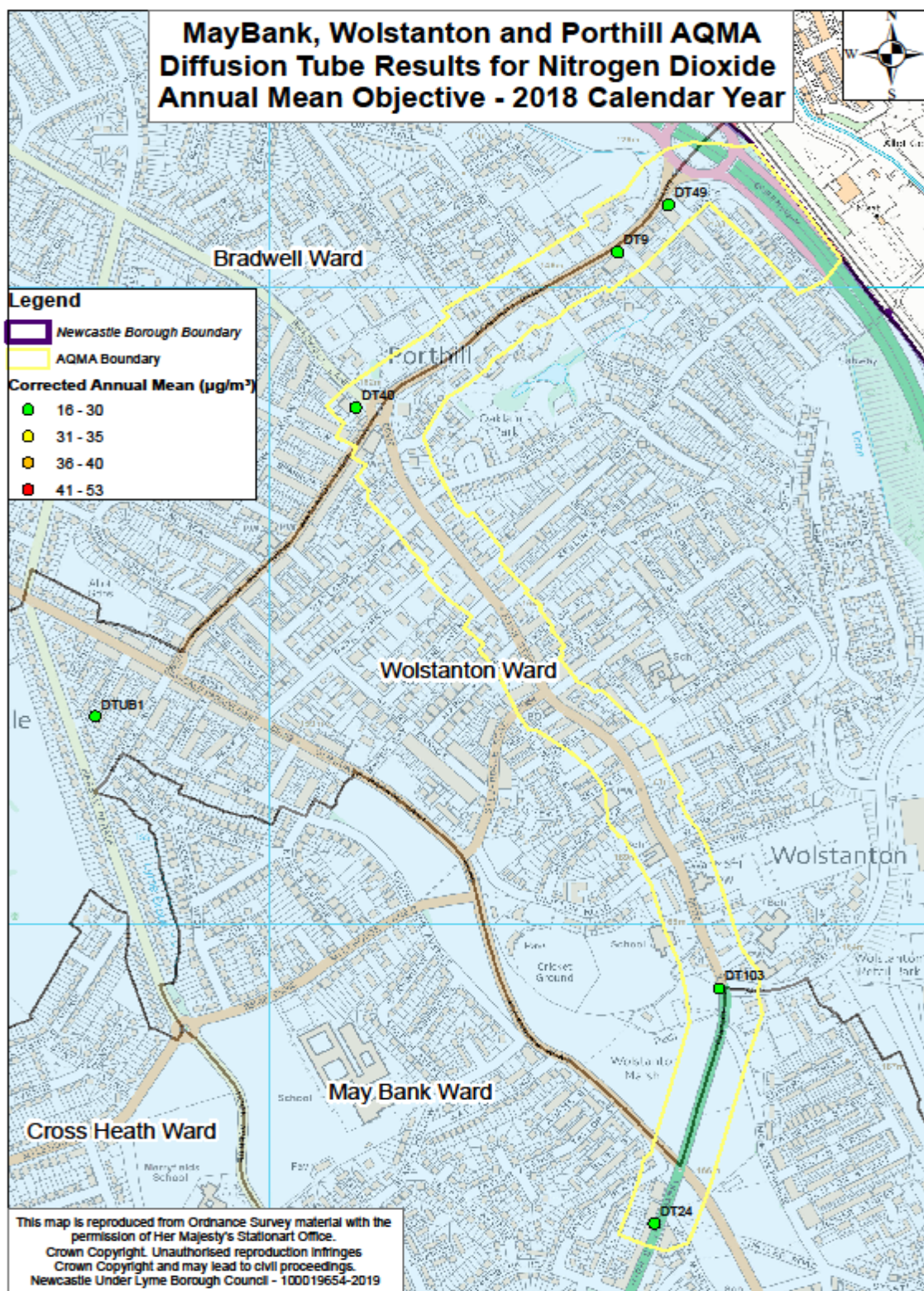
Trends in some of these factors over the past decade are illustrated in the following section of this report.

#### Air Quality Monitoring within the AQMA

The Borough Council has been monitoring air quality at various locations in the Maybank-Wolstanton-Porthill for a number of years. The locations where we monitor air quality are chosen to represent worst-case exposure to traffic emissions and to provide the best representation of where residents are exposed to these emissions over the course of a full year. Usually this means

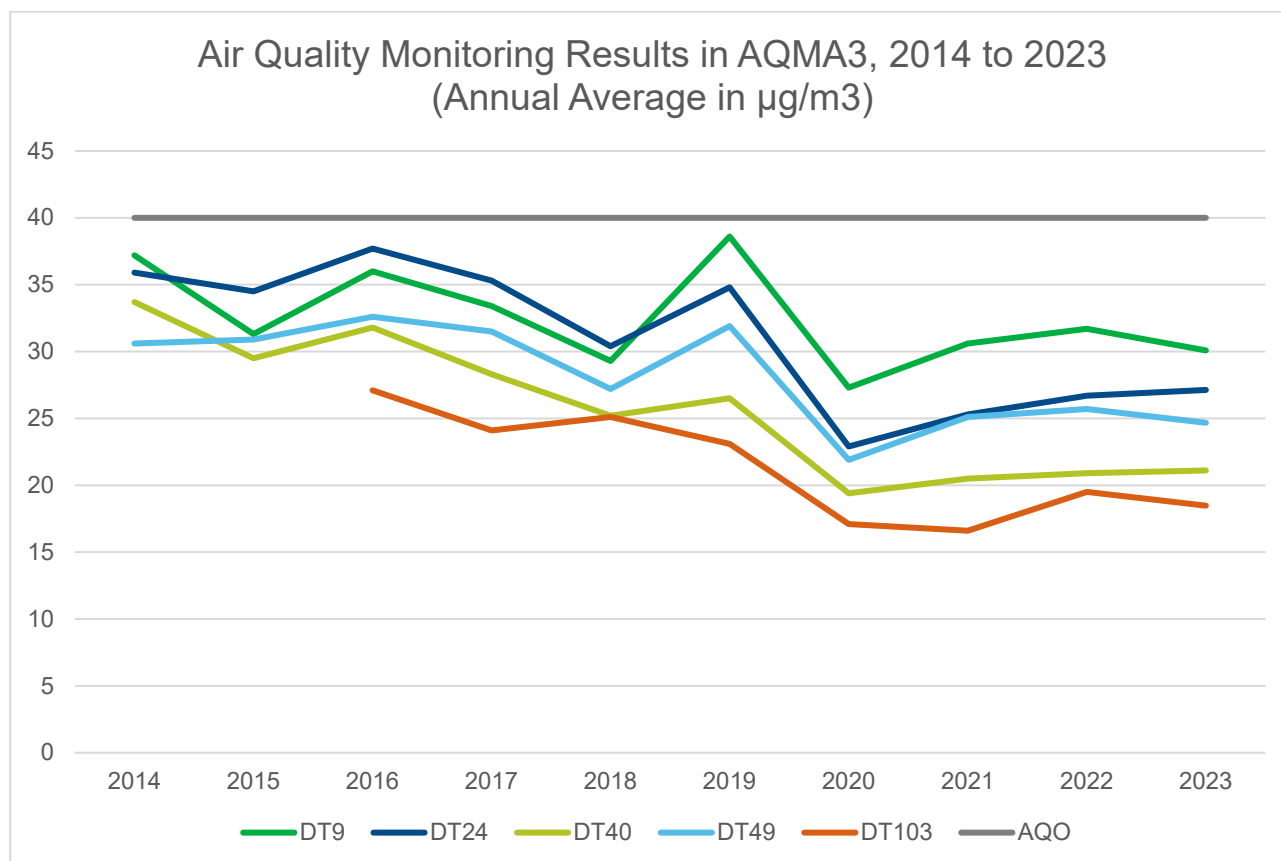
monitoring air quality close to the façade of residential dwellings. Figure 4 is a map of the long-term monitoring locations in the Maybank-Wolstanton-Porthill AQMA.

**Figure 4 - Map of monitoring - AQMA 3: Maybank, Wolstanton, Porthill**



The monitoring data from the various monitoring locations in the Maybank-Wolstanton-Porthill AQMA is summarised in Figure 5 and is presented in Table 1 for the calendar years 2014 to 2023.

**Figure 5 Air Quality Monitoring Results in AQMA3, 2014 to 2023**



**Table 1 Air Quality Monitoring Results in AQMA3, 2014 to 2023**

Location	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Reduction
DT9	37.2	31.3	36	33.4	29.3	38.6	27.3	30.6	31.7	30.1	19.1%
DT24	35.9	34.5	37.7	35.3	30.4	34.8	22.9	25.3	26.7	27.1	24.4%
DT40	33.7	29.5	31.8	28.3	25.2	26.5	19.4	20.5	20.9	21.1	37.4%
DT49	30.6	30.9	32.6	31.5	27.2	31.9	21.9	25.1	25.7	24.7	19.4%
DT103	-	-	27.1	24.1	25.1	23.1	17.1	16.6	19.5	18.5	31.8%

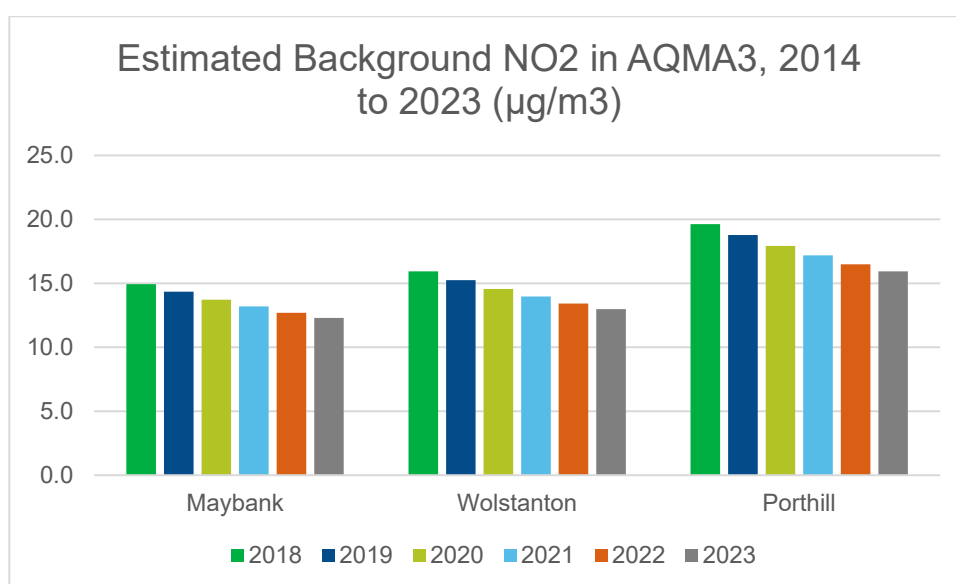
#### Estimated Background NO<sub>2</sub> in the AQMA

Data for 2024 has not been included within this report as it has yet to be ratified before publication. However, it appears to follow the trend above.

Each year the Department for the Environment, Farming and Rural Affairs (DEFRA) publish estimates of background air quality for each 1km square across the UK.

The published estimated background concentrations of NO<sub>2</sub> in the AQMA are shown in Figure 6.

**Figure 6 Estimated Background NO<sub>2</sub> in AQMA3, 2014 to 2023**



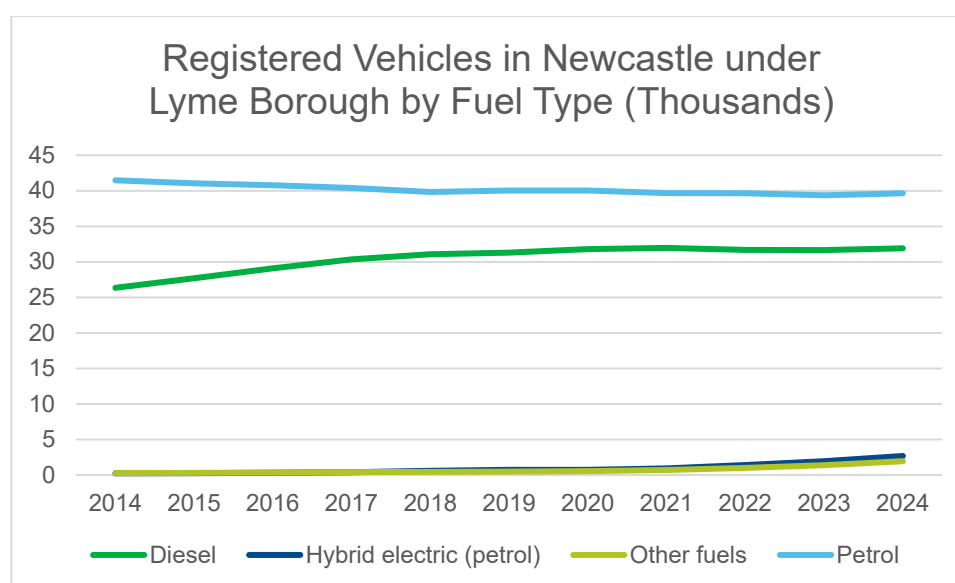
### Changing Vehicle Types

DVLA publish data each quarter about the number of registered vehicles by vehicle type, fuel type and keepership.

The published data of the total number of vehicles registered in Newcastle under Lyme Borough by fuel type is shown in Table 2 and Figure 7.

**Table 2 Registered Road Vehicles by Fuel Type in Newcastle under Lyme Borough**

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
<b>Diesel</b>	38.6%	39.9%	41.2%	42.4%	43.2%	43.1%	43.5%	43.6%	43.0%	42.6%	41.9%
<b>Hybrid electric</b>	0.4%	0.4%	0.5%	0.5%	0.8%	1.0%	1.0%	1.3%	1.9%	2.6%	3.5%
<b>Other fuels</b>	0.4%	0.4%	0.5%	0.6%	0.6%	0.7%	0.8%	1.0%	1.4%	1.9%	2.6%
<b>Petrol</b>	60.7%	59.2%	57.8%	56.5%	55.3%	55.2%	54.8%	54.1%	53.8%	52.9%	52.1%

**Figure 7 Registered Road Vehicles by Fuel Type in Newcastle under Lyme Borough**

## Commentary

The air quality monitoring data in Figure 5 and Table 1 illustrates three key findings:

- Firstly, **there has been sustained decline in measured NO<sub>2</sub> at all monitoring locations in the Maybank-Wolstanton-Porthill AQMA since 2014.** The greatest reduction of 37.4% has been observed at monitoring location DT40 which is at the Porthill Road / High Street roundabout. The lowest reduction of 19.1% has been observed at monitoring location DT9, which is on the relatively steep stretch of road on Porthill Bank heading west from the A500 Porthill Roundabout.
- Secondly, **the measured NO<sub>2</sub> at all monitoring locations in the Maybank-Wolstanton-Porthill AQMA have all remained consistently lower than the Air Quality Objective for nitrogen dioxide (NO<sub>2</sub>) of 40µg/m<sup>3</sup>.**

- Thirdly, **the measured NO<sub>2</sub> at all monitoring locations in the Maybank-Wolstanton-Porthill AQMA have been less than 36µg/m<sup>3</sup> since 2020.** This is important because statutory guidance published by DEFRA states that *“Due to the inherent uncertainties of dispersion modelling, consideration should be given to predicted concentrations being 10% below the relevant objective before an amendment or revocation of an AQMA is completed”* (LAQM TG22 para 3.53) and revocation of an AQMA should be considered where there is robust evidence that air quality is consistently 10% lower than the Air Quality Objective for nitrogen dioxide (NO<sub>2</sub>) of 40µg/m<sup>3</sup> for 3 consecutive years (LAQM TG22 para 3.57).

There was a significant reduction in measured NO<sub>2</sub> within 2020 as a direct result of the restrictions in movement due to Covid-19 and the resulting reduction in traffic volumes. These restrictions also occurred to a lesser extent in 2021, and this is reflected in relatively low air quality monitoring results in this year.

However, air quality monitoring results in 2022 and 2023 did not return to the levels measured pre-Covid, and there is a clear and sustained downward trend overall since 2014.

The registered vehicle numbers in Table 2 and Figure 7 illustrate that diesel and petrol vehicles – both of which emit NO<sub>2</sub> in their exhaust gases, still dominate the vehicle fleet in the Borough of Newcastle under Lyme, but that hybrid electric and other fuels are rapidly forming a significant proportion of the fleet. Hybrid electric and other fuels have increased from 1.8% of the fleet in 2020 (1,277 vehicles) to 6.1% of the fleet in 2024 (4,628 vehicles) and this rapid increase in non-petrol and diesel is predicted to continue.

**As the background concentration of NO<sub>2</sub> can be seen to be decreasing, and there is a clear trend showing the increased uptake of lower emission vehicles, we are confident that the compliance with the Air Quality Objective in the Maybank, Wolstanton, Porthill AQMA 3 will be sustained.**

The Council has presented these results to central government, and they agree that the most proportionate way forward is to revoke the Air Quality Management Order which applies to Maybank, Wolstanton, Porthill.

The Borough Council therefore intends to revoke AQMA 3: Maybank-Wolstanton-Porthill. The purpose of this Consultation Report is therefore:

1. To provide stakeholders and interested parties with the most up to date evidence about air quality within the geographical area of the Maybank-Wolstanton-Porthill AQMA.
2. To set out the legal, environmental, economic and social implications of revoking or not revoking the AQMA.
3. To seek the views and comments of stakeholders and interested parties.

## 4 Implications of revoking the Air Quality Management Order

The revocation of the Order is a process which is set out in law (Part IV of the Environment Act 1995). In practice it will make no difference to the work we are doing to make the air in the Borough of Newcastle cleaner.

We Remain Committed to:

1. Continuing to monitor air quality in Maybank, Wolstanton and Porthill, and across the rest of the Borough.
2. Continuing our work, and that of our partner agencies such as Staffordshire County Council, to improve air quality.

In parallel with this review of the Maybank, Wolstanton and Porthill AQMA, we have also published a revised draft Air Quality Action Plan, which will also be subject to formal consultation shortly. This revised draft not only considers more recent evidence and potential action to reduce NO<sub>2</sub>, but also considers opportunities to link the Action Plan with local net zero ambitions and also to consider measures to reduce emissions of and exposure to respirable particulate (also known as PM<sub>10</sub> and PM<sub>2.5</sub>), both of which have emerged in the last few years as airborne pollutants of increasing concerns to medical experts.

## 5 Purpose of the Consultation

To notify stakeholders of our intention to revoke the AQMA and also to invite comments from .

If you wish to make any comments, please email us with your comments at Environmental Health at [Environmental\\_Health@newcastle-staffs.gov.uk](mailto:Environmental_Health@newcastle-staffs.gov.uk) no later than the 1<sup>st</sup> April 2025. Please provide your name, telephone number, email address, and postcode with your comments.

## 6 What Happens Next?

We will begin a 4-week Statutory Consultation – 1<sup>st</sup> March to 1<sup>st</sup> April, 2025.

Feedback from the consultation will be summarised in a report to the Councils Licensing and Public Protection Committee in spring / summer 2025. This Committee will make the decision whether or not to revoke the AQMA.

If the Committee decides to revoke the AQMA, the Council will write to DEFRA informing them of this proposal and seeking approval to progress with the revocation. The AQMA will be revoked if the Committee decision is endorsed by DEFRA and after the Council signs and seals a Revocation Order.

The Committee report and decision and (if issued) the Revocation Order will be published on the Council's website.

## References and Papers

- Newcastle-under-Lyme Borough Council Air Quality Action Plan (2019-2024) at <https://moderngov.newcastle-staffs.gov.uk/documents/s28367/4%20App%20AQAP%202019-2024.pdf>
- Newcastle-under-Lyme Borough Council Annual Status Reports at <https://www.newcastle-staffs.gov.uk/protection/air-quality-management>
- Air Quality Management Areas (AQMAs) at <https://uk-air.defra.gov.uk/aqma/>
- Air Quality Hub & LAQM at <https://laqm.defra.gov.uk/air-quality-hub/>
- Local Air Quality Management Technical Guidance LAQM.TG22. 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- DEFRA guidance documents at <https://laqm.defra.gov.uk/guidance/>