



Consultation Report for the Revocation of the Kidsgrove AQMA

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

Date: 4th July, 2025.

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1 Background Information

Air pollution is associated with several adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancers. 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 inequalities because areas with poor air quality are also often less affluent areas^{1,2}. 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 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).

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.

Air quality monitoring data from the Borough Councils network of monitoring locations led to the conclusion that the Air Quality Objective for nitrogen dioxide (NO₂) of 40µg/m³ (micrograms per cubic

¹ Public Health England. Air Quality: A Briefing for Directors of Public Health, 2017

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

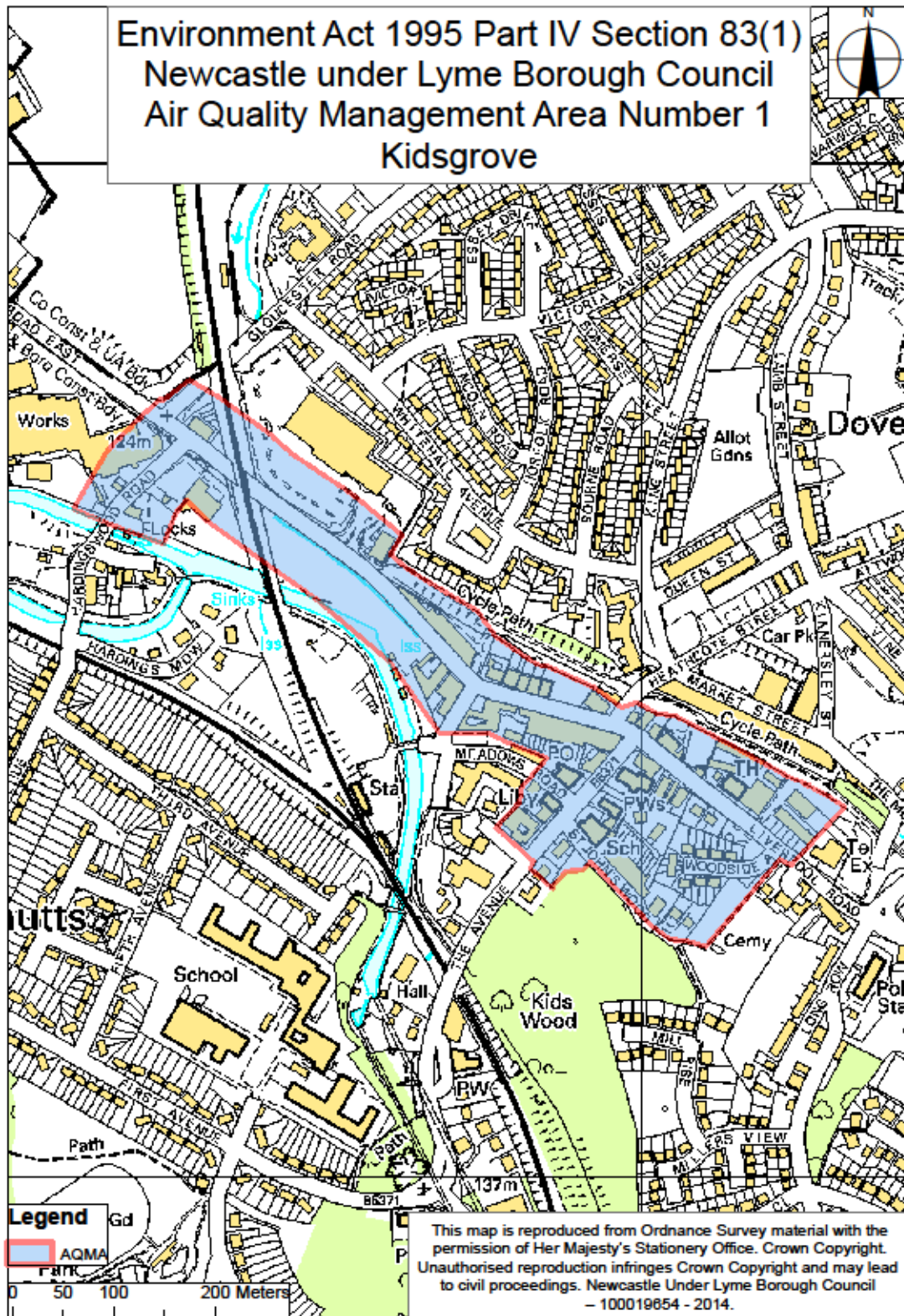
meter) measured as an annual mean was being exceeded in four discrete areas of the Borough, namely:

- 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 is road traffic.

An AQMA was declared on 15 January 2015 for Kidsgrove. The area covered by this AQMA is illustrated in Figure 1.

Figure 1. AQMA 1 - Kidsgrove



2 Historical Air Quality in Kidsgrove

Detailed analysis of air quality in Kidsgrove during 2015 led to the following conclusions:

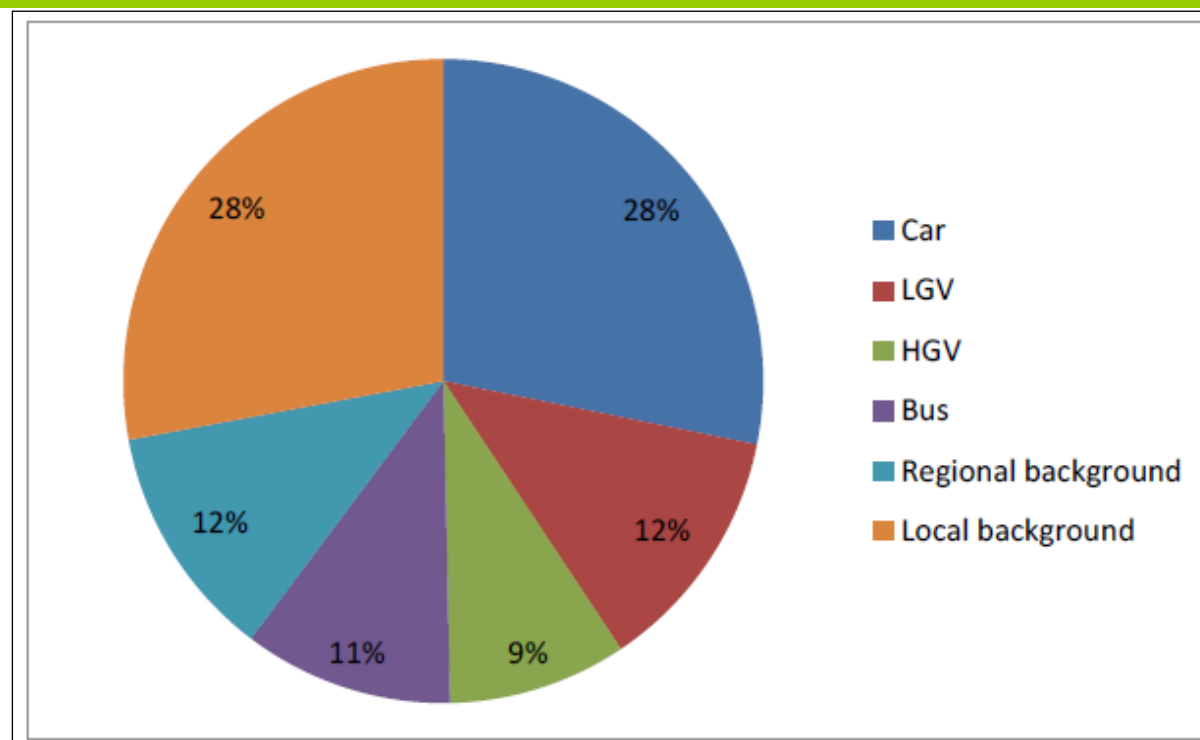
A combination of air quality monitoring and air quality dispersion modelling calculated that 36 households (residential properties) with an estimated total population of 72 people were predicted to be exposed to airborne concentrations of nitrogen dioxide (NO₂) above 40µg/m³ averaged over a calendar year. These properties were along Liverpool Road close to two junctions, one with Heathcote Street and one with Gloucester Road.

The largest sources of NO₂ were identified as being regional and local 'background' which was identified as contributing 40% of all NO₂. 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 contribution from local sources of NO₂ were identified as being from

- Cars (28%)
- Light Goods Vehicles (12%)
- Buses (11%)
- Heavy Goods Vehicles (9%)

Figure 2 Percentage contribution to the annual mean NO₂ concentration in Kidsgrove in 2015



The causes of the exceedance of the Air Quality Objective were attributed to emissions from slow moving and queuing traffic at peak times particularly at the traffic lights at the two junctions.

In order to meet the Air Quality Objective for NO₂ it was established that it would be necessary to reduce overall NO₂ exposure by 12%, which would require a 23.5% reduction in local traffic emissions if there was no reduction in background NO₂.

An Air Quality Action Plans (AQAPs) have been implemented to work towards this goal and since and a number of measures have been taken to reduce the NO₂ concentrations to below the air quality objective. These measures are described within the action plans and our air quality reports – links to these are provided within the references and papers section of this report.

3 Recent Air Quality in Kidsgrove

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 several 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 contribute.

Nitrogen dioxide is a relatively stable gas in the atmosphere and so nitrogen dioxide can travel large distances, meaning that NO₂ 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 NO₂. 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 means that monitoring of nitrogen dioxide must take place over a long timescale, often years, to develop a meaningful idea about trends in air quality.

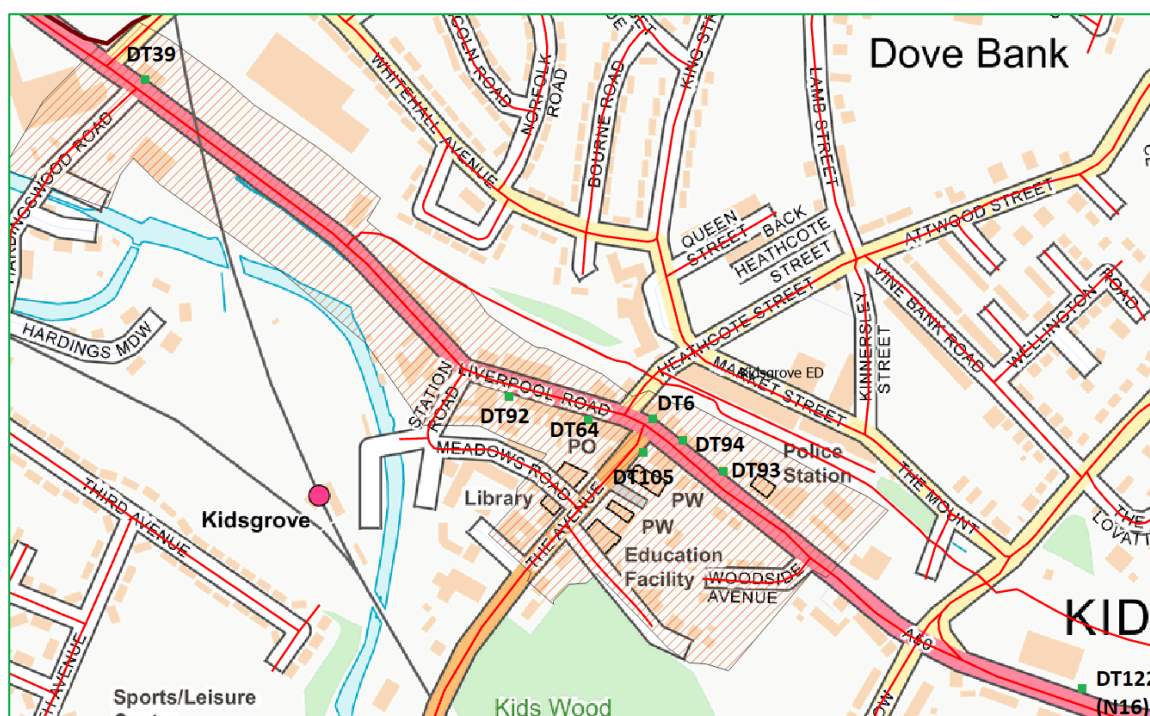
Trends in some of these factors over the past decade are illustrated in the following section of this report.

Monitoring Data in the AQMA

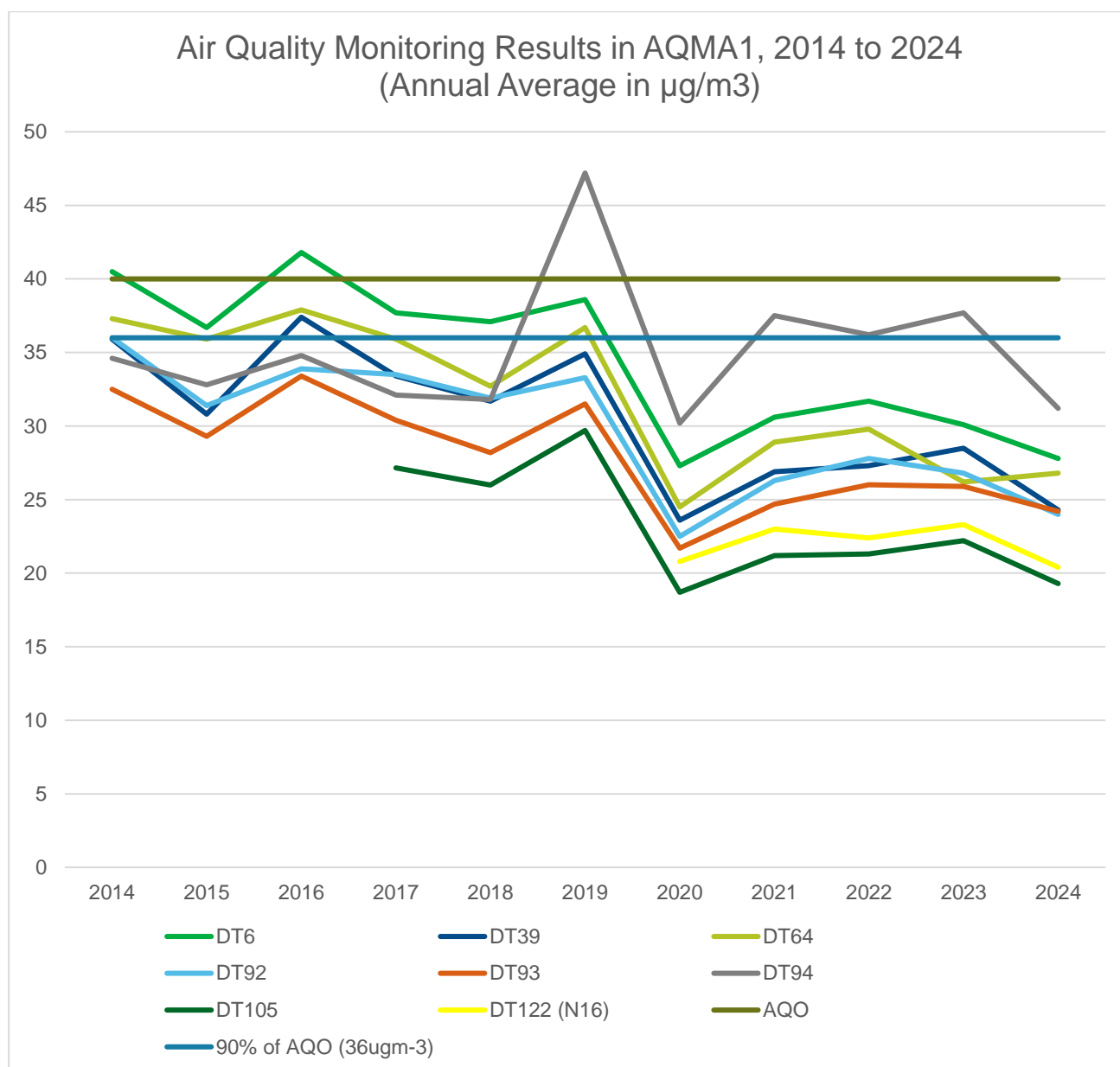
The Borough Council has been monitoring air quality at various locations in Kidsgrove for a number of years. The locations where we monitor air quality are chosen to represent worst-case exposure to traffic emissions and to provide the best representation of where residents are exposed to these emissions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

Figure 3 shows a map of the long-term monitoring locations in and near the Kidsgrove AQMA.

The monitoring data from the various monitoring locations in and near the Kidsgrove AQMA is shown in **Error! Reference source not found.**⁴ and presented in Table 1 for the calendar years 2014 to 2024.

Figure 3 - Map of monitoring locations - AQMA 1: Kidsgrove**Table 1 Air Quality Monitoring Results in AQMA1, 2014 to 2024**

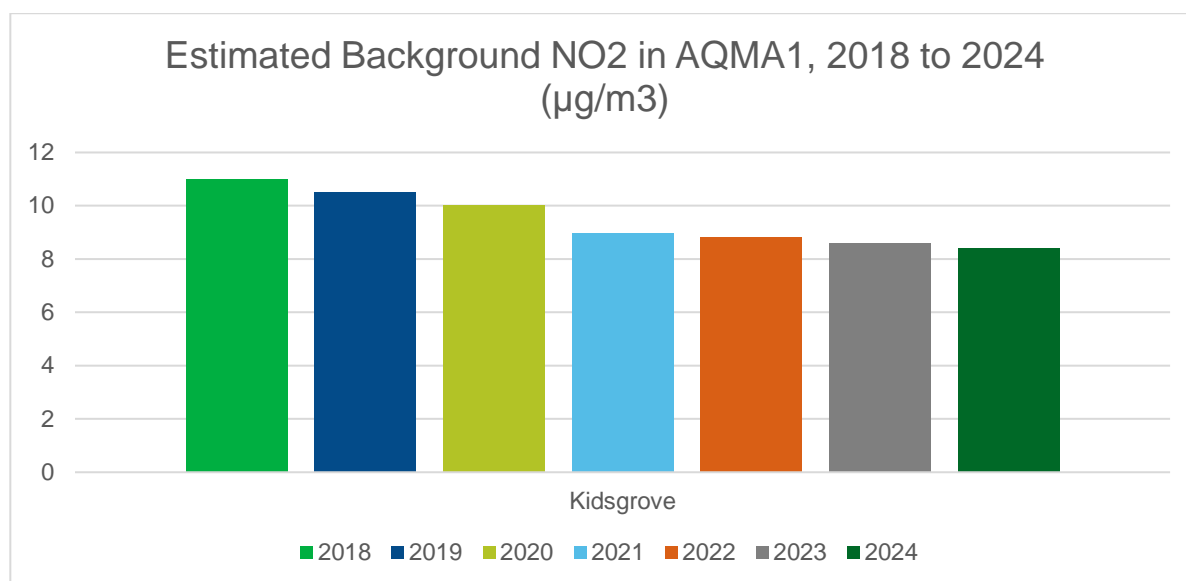
Location	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Reduction
DT6	40.5	36.7	41.8	37.7	37.1	38.6	27.3	30.6	31.7	30.1	27.8	31.4%
DT39	35.9	30.8	37.4	33.4	31.7	34.9	23.6	26.9	27.3	28.5	24.3	32.3%
DT64	37.3	35.9	37.9	35.9	32.7	36.7	24.5	28.9	29.8	26.2	26.8	28.2%
DT92	36	31.4	33.9	33.5	31.9	33.3	22.5	26.3	27.8	26.8	24.0	33.3%
DT93	32.5	29.3	33.4	30.4	28.2	31.5	21.7	24.7	26	25.9	24.2	25.5%
DT94	34.6	32.8	34.8	32.1	31.8	47.2	30.2	37.5	36.2	37.7	31.2	9.8%
DT105	-	-	-	27.15	25.99	29.7	18.7	21.2	21.3	22.2	19.3	28.9%
DT122 (N16)	-	-	-	-	-	-	20.8	23	22.4	23.3	20.4	1.9%

Figure 4 Air Quality Monitoring Results in AQMA1, 2014 to 2024

Background Estimated NO_2 in the AQMA

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_2 in the AQMA are shown in Figure 5.

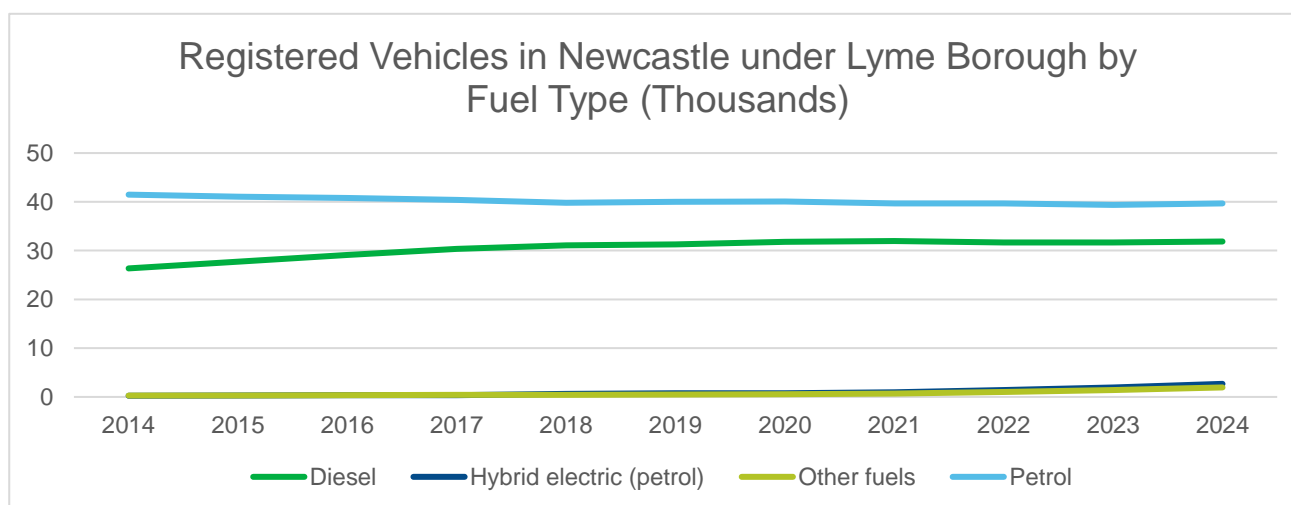
Figure 5 Estimated Background NO₂ in AQMA1, 2014 to 2023

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 6.

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

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

Figure 6 Registered Road Vehicles by Fuel Type in Newcastle under Lyme Borough

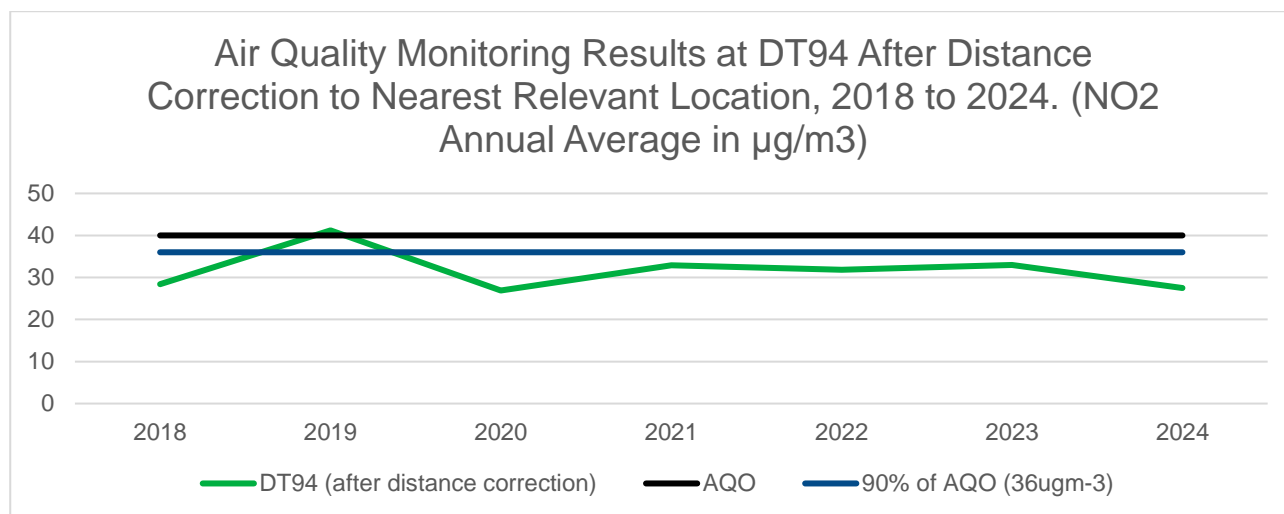
Conclusions

The air quality monitoring data summarised in Figure 4 and Table 1 illustrates the following key findings:

- There was a significant improvement in air quality in 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 shown in relatively low air quality concentrations within monitoring results in 2020.
- Other than at DT94 (which is discussed below), air quality monitoring results in 2022 did not return to the levels measured pre-Covid, and the results in 2023 and 2024 appear to show a clear and sustained downward trend.
- Since 2017, only one location *appears* to have exceeded the annual mean air quality objective, namely DT94 (located at 116 Liverpool Road) in 2019. However, on further investigation, it has been identified that this diffusion tube was moved from the façade to the roadside in 2019, i.e. much closer to the road. Therefore, the concentration at the façade would be much lower than reported in figure 4 and the reductions observed since 2014 seen elsewhere would also have been achieved at DT94 if it had remained in the original location.
- There has been a downward trend in measured NO₂ at all monitoring locations in Kidsgrove since 2014 (or since monitoring began in the cases of DT105 and DT122). The greatest reduction, 33.3%, was observed at monitoring location DT92 which is at the terraced row of shops on the south side of Liverpool Road between the junctions with Station Road and Heathcote Street.
- The measured NO₂ at all monitoring locations in Kidsgrove have all remained consistently lower than the Air Quality Objective for nitrogen dioxide (NO₂) of 40µg/m³ since 2020. This is important because statutory guidance published by DEFRA states that "*There should not be any declared AQMAs for which compliance with the relevant objective has been achieved for a consecutive five-year period.*" (LAQM TG22, para 3.57, page 50). Therefore, revocation of an AQMA should be required where there is five consecutive years evidence that air quality is consistently lower than the Air Quality Objective for nitrogen dioxide (NO₂) of 40µg/m³.

Distance correction calculations have been conducted in relation to the monitoring results obtained at DT94 to predict the concentration of NO₂ at the façade of the nearby houses. These concentrations are shown in Figure 7,

Figure 7 – Air Quality Monitoring Results at DT94 After Distance Correction to the Nearest Relevant Receptor 2018 to 2024.



After distance correction, the measured NO₂ at DT94 at a relevant location, rather than roadside is shown to have been less than 36µg/m³ 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 (NO₂) of 40µg/m³ for 3 consecutive years (LAQM TG22 para 3.57). As shown in figures 4 and 7, concentrations of NO₂ across all sites have been more than 10% lower than the Air Quality Objective for nitrogen dioxide (NO₂) of 40µg/m³ (i.e. less than 36µg/m³) at relevant locations for five years.

The registered vehicle numbers in Table 2 and Figure 6 show that that diesel and petrol vehicles, both of which emit NO₂ in their exhaust gases, still dominate the make up of the vehicle fleet in the Borough of Newcastle under Lyme, but it can be seen 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 is expected to continue. It is therefore anticipated that the amount of NO₂ emitted from vehicles in the area is unlikely to increase in the future.

Given that there is an ongoing downward trend shown by monitoring within Kidsgrove, the background NO₂ levels are falling, there is a continued modernisation of the vehicles using the road network and that the existing monitored NO₂ levels have been more than 10% lower than the annual mean Air Quality Objective for nitrogen dioxide (NO₂) of 40µg/m³ at relevant locations for five years, we are confident that the compliance with the Air Quality Objective within AQMA 1 Kidsgrove will be sustained.

We have 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 Kidsgrove.

The Borough Council is therefore considering whether it is appropriate to revoke the AQMA 1: Kidsgrove.

The purpose of this Revocation 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 Kidsgrove AQMA.
2. To set out the legal, environmental, economic and social implications of revoking or not revoking the AQMA.
3. To seek stakeholder views, based on the evidence provided about whether revoking the AQMA is the right course of action.

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:

- Continuing to monitor air quality in Kidsgrove, and across the rest of the Borough, particularly in support of the Kidsgrove Town Bid project.
- 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 Kidsgrove AQMA, we have also prepared a revised draft Air Quality Action Plan, which is planned to go to consultation later in 2025. This revised draft not only considers more recent evidence and potential action to reduce NO₂, 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 PM₁₀ and PM_{2.5}), both of which have emerged in the last few years as airborne pollutants of increasing concerns to medical experts.

5 Purpose of the Consultation

We are writing to you both to notify you on our intention to revoke the AQMA and also to invite feedback should you think there are any other factors that need to be considered.

If you wish to make any representation with regards to these proposals, please email us with your comments at Environmental Health at Environmental_Health@newcastle-staffs.gov.uk by **6th August, 2025**.

In particular, we would appreciate your views on the following questions:

1. Do you think that the current evidence supports the revocation of the Kidsgrove AQMA?
Yes / No. If 'No', could you please explain why.
2. What further evidence do you think is necessary to support the revocation of the Kidsgrove AQMA?
3. What measures do you think need to be considered to sustain air quality improvements in Kidsgrove?

6 What Happens Next?

We begin a 4-week Statutory Consultation – **9th July, 2025**.

Feedback from the consultation will be summarised in a report to the Council's Licensing and Public Protection Committee prior to the next meeting on 19th August, 2025. This Committee will make the decision about whether or not to revoke the AQMA.

The AQMA will be revoked if the Committee approves the revocation 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 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/>