



2020 Air Quality Annual Status Report (ASR)

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

08/10/2020

The Borough of Pendle

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Executive Summary: Air Quality in Our Area

Air Quality in the Borough of Pendle

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 and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas^{1,2}.

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion³.

The main issue of air pollution in Pendle is nitrogen dioxide from road vehicles, emissions are therefore monitored in areas of heavy traffic. In 2011, following exceedances of the NOX (nitrogen dioxide), limit, an Air Quality Management Area was declared in Colne in 2011. In 2019 the threshold limit for nitrogen dioxide was not exceeded in any locations.

Information on air quality management in Pendle can be found via the following link:
http://www.pendle.gov.uk/info/20048/pollution_and_air_quality/93/air_quality.

The general trend across the Borough over the last year has been an increase in air quality, as NOX has decreased at most monitoring sites across the Borough. This is specifically true in the AQMA where NOX has made small decrease over the last few years, and would suggest that the traffic flow measures introduced by the LCC (Lancashire County Council) Highways department and the Borough of Pendle over the last five years, such as smart traffic lighting systems and the introduction of 20mph zones, is having the desired effect. This can also be said to be true for the areas where we have had previous exceedances in Brierfield and Barrowford. If this trend continues it is probable that there will be no requirement to declare these areas as AQMA's.

¹ Environmental equity, air quality, socioeconomic status and respiratory health, 2010

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

³ Defra. Abatement cost guidance for valuing changes in air quality, May 2013

The Borough of Pendle looks to manage and improve air quality through:

- internal mechanisms such as monitoring, planning, education and encouragement.
- conditioning developments with air quality in mind, such as fitting car charging points,
- actions with schools,
- projects with the cycling hub and,
- in 2019 the Borough of Pendle Council officially recognised the climate change as an emergency.

We also look to work closely with partnership agencies such as Lancashire County Council, neighbouring authorities, the Environment Agency and Defra to help control and reduce the pollution put into the atmosphere. The results of which can be seen in the success full reduction in air pollution in the AQMA.

As well as partnership agencies we also look to work with other organisations operating in our region such as the University of Central Lancashire, and the National Cycle Network.

The 2017 ASR report referred to various ongoing projects, this section will give a brief update on some of this projects.

1. The Colne Skipton Railway link, this project is reported to be in stage 2 of the Department of Transports Railway Enhancements Pipeline process (the Develop stage), however at this time it has not been agreed that this link will be reinstated. .
2. There is still much work to be done on the East Lancashire Cycle Network, it is not yet complete. It is our understanding that this is likely to be taken forward through development of the East Lancashire Local Cycling and Walking Infrastructure Plan.
3. The East Lancashire highways and transport master plan has not been updated since its adoption and publication in 2014. All master plans will be updated in line with Local Travel Plan (LTP4) but there is currently no

timescale for when this will be as work on LTP4 has been delayed due to the Covid-19 pandemic.

Actions to Improve Air Quality

The main actions the Borough of Pendle continue to take that helps to improve air quality are:

- In 2019 the Borough of Pendle announced that it is classing climate change as an emergency, as a result of this we hope to see more funding and political will on climate change issues, including air quality.
- The Borough of Pendle are committed to education within schools on climate change issues, and have planned to do an air quality monitoring exercise at school gates. To compare term time and holidays times, to look at the effect of the school run and idling vehicles on air quality in the vicinity. This would involve older primary children and is part of a Lancashire County Council education initiative. It is hoped that children will encourage parents to walk rather than drive whenever possible.
- The Borough of Pendle are keen to get their staff onto more sustainable modes of transport, and have been pushing the cycle to work scheme and have encouraged staff to sign up to love to ride. The Council are looking into improving changing facilities for staff to increase travel options.
- Education on cycling will continue, at the Steven Burke Sports Hub through yearly events including local cycling groups, and Summer Jam at the BMX track.
- The Borough of Pendle also offer a car loan to buy scheme for staff, this helps staff buy new cars which are less polluting.
- Working with LCC highways authority to improve flow of traffic in potentially congested areas. This can be seen in Colne in the AQMA, and in Brierfield and Barrowford in the potential AQMA's.
- Working with the planning department to ensure where possible air quality/ climate change actions are considered during the development stage. This has led to new developments having car charging points designed in.
- Looking at opportunities to install car charging points in Council carparks.
- In February 2020 the Climate change summit was held at the University of Lancaster which included representatives of local government, NHS, and local/ national industry representatives. There was much discussion about the need for regional level funding bids to improve sustainable transport across the region.

Conclusions and Priorities

The main conclusions are that air quality is improving across the borough, with regards to the yearly and bias adjusted averages, we had no exceedance in 2019. We have had monthly exceedances especially in January 2019, where 43 of 56 sites exceeded the limit, the same pattern can be observed each year where January and February sees the highest level of Nitrogen Dioxide. It is believed that this is a result of more people feeling forced into less sustainable ways of travelling (in the car) to avoid the colder weather, causing more traffic and more congestion.

Our main aim for the next year are to continue to improve air quality on the main roads in urban areas such as Colne, Brierfield and Barrowford. We will look to achieve this by continuing to implement measures to improve the flow of traffic through these areas, and through education, access to information and awareness. These will mainly be focusing on active travel, use of public transport and will look to link in where possible with our initiatives on healthy life styles and tackling obesity.

With regards to the AQMA in Colne we are going to continue with the monitoring that is in place and review it again in a year, and we hope to be in a position to justify revoking the AQMA.

The main barriers to achieving these goals are:

- Pendle Borough Council are not the Highway Authority and therefore do not have control of these budgets
- The difficulty in recruiting suitably experienced staff
- Staff resources reallocated to Covid related work
- The impact of Covid on the ability to hold events

The Council are looking into the potential for using the Road Traffic, (vehicle emission) (fixed penalty) (England) regulations 2002, to issue fixed penalty fines for persistent idling vehicles. We are considering incorporating this into the school education/ monitoring programme discussed above:

1. The children would be educated to understand that it is wrong for a vehicle to be running while parked, and told to encourage their parents to follow this practice.
2. A letter will be sent to parents educating them about the need to stop idling at the schools, and making them aware of a potential fine for doing so.
3. The driver would then be warned if found idling at the school, and asked to switch off their engine.
4. The driver will be issued with a fine if idling persists.

LCC provide information through their website about personal wellbeing, fitness, and active travel is now being pushed as a way of helping the environment as well as improving physical and mental health. <https://www.lancashire.gov.uk/roads-parking-and-travel/active-travel/> . Pendle endorse this policy and provide information through the website.

Local Engagement and How to get Involved

Engagement will be subject to Covid restrictions and the availability of staff resources

The council will with other local organisations help to organise events to educate residents to the benefits of walking and cycling, and look to raise awareness of climate changes issues in schools, around the topic of school runs, and idling vehicles.

We will look to educate and provide information to the public on the things that individuals can do to make a difference, such as:

- Using public transport
- Travelling actively through walking and cycling.
- Not using the car where possible.
- Changing to electric vehicles see <https://www.gov.uk/plug-in-car-van-grants>
- Not having garden bonfires, most of the urban areas of the Borough are smoke control areas. See <https://smokecontrol.defra.gov.uk/index.php>
- Ensuring that business dispose of their waste in an ethical legal manner and do not burn it.

There is currently no air quality action groups in the area, to counter this we intend to setup a Facebook group to help raise awareness and participation with the local community. Through this we hope to encourage better practice, more active travel, and more participation in local events and initiatives such as Love To Ride.

Further information on air quality can be found on the DEFRA website, through the UK air quality information resource, by following this link <https://uk-air.defra.gov.uk>.

Further information on air quality can also be sourced from the council website at https://www.pendle.gov.uk/info/20048/pollution_and_air_quality/93/local_air_quality_management

The Borough of Pendle in 2019 made a commitment to reducing unhealthy weight in our communities (the area has the 2nd highest rate of obesity in Lancashire), and are working with partnership agency to help improve the health of the residents of the Borough and reduce obesity, through programs such as the Childhood Obesity Trailblazer Program, and Together an Active Future.

The Childhood Obesity Trailblazer Program, this mainly targets fast food outlets and health eating education within the restaurant to encourage the provision of healthier menus and products, such as not selling energy drinks to under 18's.

The Borough is also involved in Together an Active Future, this program looks at barrier to exercise, and innovative approaches to help people to become more active more often.

From an air quality perspective it is hoped that improving the fitness/health of residents will increase active travel in the areas and therefore reduce air pollution from road traffic.

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1 Local Air Quality Management

This report provides an overview of air quality in The Borough of Pendle during 2019. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by the Borough of Pendle to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England can be found in Table E.1 in Appendix E.

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMA) are declared when there is an exceedance or likely exceedance of an air quality objective of 40 $\mu\text{g}/\text{m}^3$. After declaration, the authority must prepare an Air Quality Action Plan (AQAP) within 12-18 months setting out measures it intends to put in place in pursuit of compliance with the objectives.

A summary of AQMA declared by the Borough of Pendle can be found in Table 2.1. Further information related to declared or revoked AQMA, including maps of AQMA boundaries are available online at https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=194. Alternatively, see Appendix D: Map(s) of Monitoring Locations and AQMA, which provides for a map of air quality monitoring locations in relation to the AQMA(s).

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	City / Town	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance (maximum monitored/modelled concentration at a location of relevant exposure)				Action Plan		
						At Declaration		Now		Name	Date of Publication	Link
Colne Air Quality Management Area	01/04/2011	Nitrogen Dioxide To reduce the annual average to below the trigger level.	Colne	AQMA is a mixed use area with a busy road / junction that is a bit of a bottle neck and often has stationary traffic.	YES	40.1ugm3	ugm3	29.28	ugm3	Bureau Avista UK limited 2015, Colne AQMA plan.	2015	https://www.pendle.gov.uk/downloads/file/10289/air_quality_annual_status_report

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☒ The Borough of Pendle confirm the information on UK-Air regarding their AQMA(s) is up to date.

2.2 Progress and Impact of Measures to address Air Quality in Pendle Borough Council.

Unfortunately due to staff changes and problems with recruitment of suitably experienced staff, the Borough of Pendle have not submitted an Air Quality Annual Status Report for two years. Throughout this period however the department has continued monitor and record the results on the NOX tubes analysis.

The Borough of Pendle has taken forward a number of direct measures during the current reporting year of 2019 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2.

More detail on these measures can be found in their respective action plans, i.e. Colne Air Quality Action Plan. Key measures are:

1. Over the last 5 years a number of transport infrastructure projects have been ongoing across the borough to help improve road safety for all uses (motor vehicles, cyclist & pedestrians).
 - A. As part of the continuous improvement to the Colne bypass, Vivary Way and the AQMA area, LCC highways department in conjunction with the Borough Pendle have fitted interlinked traffic light system to reduce congestion along the whole length of the bypass. In 2020 LCC will be carry out an “optimisation project” to ensure that the traffic lights are working together best they can to ensure flow of traffic. They will also be fitting a HGV detection system onto the bypass to give HGVs priority so they can pass through quicker. In theory this sounds good, but the highways agency has noticed an increase in air pollution in some areas where this has been used, as result of passenger vehicles being made to wait so much longer. It is hoped however that this will not be the case in Colne, and that this will further help to improve area quality in the area, and the AQMA.
 - B. At junction 13 of the M65 there has been traffic lights fitted to the bottom end of the dumbbell rounder about, to help control the flow of traffic going onto Gisburn Road and through Barrowford (an area we were previously concerned would need to be designated an AQMA). This appears to have

had the desired effect, and is help to reduce congestion and hence increase air quality, we will however continue to monitor the area.

C. In Brierfield (an area we were previously concerned would need to be designated an AQMA). LLC highways department has narrowed the road, to increase the size of the pavement to make it more pedestrian and cycle friendly and have introduced smart traffic lights at the junction of Colne Road, Burnley Road, Halifax Road, and Railway Street. This project was finished in 2019, however there was concern that the narrowing of the road could lead to further congestion, however at this stage this doesn't seem to be the case, we will continue to monitor.

2. The Borough is leading by example, through actions such as;

- declaring climate change an emergency,
- replacing the work fleet with new less polluting models,
- encouraging active and sustainable travel for staff,
- encouraging take up of the cycle to work scheme, and love to ride scheme,
- car loan to buy scheme.
- healthy eating and life style programs

3. The Borough is working with Lancashire County Council to promote active travel to and from school.

The Borough of Pendle expects the following measures to be addressed over the course of the next reporting year:

A. In conjunction with Lancashire County Council, we plan to actively work with older primary school children to educate them and parents about the pollution caused by the school run, to reduce the incidents of vehicles idling at the school gates,(and other areas of the Borough) and increase active travel to and from school. The impact of which is intend to educate and shock children and adults into not using the car where other options are available and hence reduce pollution going into the atmosphere.

- B. To promote inclusion of climate change and air quality issues into planning applications submitted to the Council, eg,
 - Installation of car charging points on new developments, to make use of an electric car practically feasible.
 - Development of high energy efficient homes.
- C. Completion of changing facilities at Council buildings. To encourage more staff to actively travel to work, and lead by example for other employers in the Borough.
- D. Creating a Pendle air quality Facebook group. To help educate, inform and hopefully give access to a group of local residents that care about the environment enough to want to help setup and attend meetings to discuss the issues.

The principal challenges and barriers to implementation that the Borough of Pendle anticipates facing are funding post covid19, limits on staff time, and the political will to push projects through.

Progress on the following measures has been slower than expected due to unfilled positions within the department, constraints on staff time, department priorities, and the covid19 outbreak has also altered priorities and redirected staff.

The Borough of Pendle anticipates that the measures stated below and in Table 2.2 will achieve compliance in the Colne Air Quality Management Area in 2021.

With regards to the Table 2.2 above, we hope that further actions will not be required, and that next year we will be able to apply to revoke the Colne AQMA, as the data collected indicates that this will be the case. We will however continue to monitor the area, and carry out education programs, and encourage active travel etc. to hopefully continue to see improvements in air quality, throughout the Borough but specifically in urban areas.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	EU Category	EU Classification	Date Measure Introduced	Organisations involved	Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
1	6.Introduction of 20mph speed restrictions	Traffic Management	Reduction of speed limits, 20mph zone	2016	LCC, BPC	LCC	Improved traffic flow through the AQMA, & reductions in nox	Reduce pollution to below the AQ objective for NO2	Ongoing.	2020/21	North Valley route management Strategy. There are no special speed limit, but a package of measures has been introduced to improve traffic flow through the AQMA.
2	25. Comment on planning applications	Policy guidance and development control	Air quality planning and policy guidance	ongoing	BPC	BPC	Introduction of east Lancs wide planning document.	New developments to be at least air quality neutral	Implementation on-going	Ongoing	Viability issues
3	26. Contribute to and influence forthcoming development policies for LCC	Policy and guidance development control	Regional groups Co-ordinating programmes to develop area wide strategies to reduce emissions and improve air quality	2017 ongoing	LCC, PBC	LCC	Reduce air pollution to below AQ objective throughout the Borough	Increased inclusion of air quality considerations within county and borough wide policy development,	Senior public health officer appointed by LCC to Co-ordinate area wide strategies	ongoing	LLC initiatives, and commitment required from all stake holder to achieve.
4	24. Work in partnership with LCC to increase uptake and implement action of travel plans	Promoting travel alternatives	School travel plans/ work place travel plans	2017 ongoing	LCC, PBC	LCC/ BPC	Reduction in Road Traffic	Reduce pollution to below AQ objective for NO2	LCC provide sustainable travel resources for schools, PBC officer's carrier education, and awareness exercise with primary schools.	ongoing	Barriers will be reviewed 2021. Awaiting update from LLC.
5.	4. Improvement in traffic flows and speeds within the AQMA	Traffic Management	UTC Congestion management and traffic reduction	2016	LLC, PBC	LLC, and PBC	Reduce pollution to below AQ objective for NOX	Reduce congestion and increase average vehicle speeds through AQMA	It appears we have achieved the goal, we are going to monitor the situation with an eye to apply for the revocation of the AQMA next year.	2021	Air pollution increases.
6.	Encouraging model shift	Promote travel alternatives	Promoting cycling, walking and other sustainable forms of transport	Dec, 2018	LLC, PBC	LLC, PBC	Reduce pollution to below the AQ objective for Nox	Reduce vehicle use, increase use of public transport	Strategy agreed	Ongoing	Lack of participation from target audience.

7.	16. Promote the use of cleaner alternative fuels	Promoting low emission transport	Public vehicle procurement prioritising uptake of low emission vehicles,	March 2016	PBC	PBC	Unlikely to affect pollution in the AQ	Introduce new electric or hybrid vehicles to the Council fleet.	The council fleet has been updated.	Completed 2020	Electric and hybrid vehicles proved too expensive at this stage, and the infrastructure to support them wasn't in place. Euro NCAP 6 vehicles were purchased, which is an improvement on the previous fleet vehicles.
8.	17. Establish and implement a rolling programme for replacing older vehicles with new cleaner ones	Promoting low emission transport	Public vehicles procurement – prioritising uptake of low emission vehicles	September 2019	PBC	PBC	Unlikely to affect pollution in the AQ	Improve average Euro class of the whole council fleet. Encourage take up of the car loan scheme, encourage take up of the diesel scrappage scheme.	completed	ongoing	The Council fleet has been updated with Euro Encap 6 vehicles and the size of the fleet has been reduced.
9.	19. Investigate options for better travel planning amongst Council employees	Promoting travel alternatives	Personalised travel planning	Dec 2018	PBC	PBC	Unlikely to affect pollution in the AQ	Reduce number of Council staff driving to work	ongoing	ongoing	The Council is in the process of building staff changing facilities, and is pushing the cycle to work scheme, and schemes such as love to ride.
10.	27. Authorised and regularly inspected.	Environmental Permits	Other measure through the permit systems and economics	complete	PBC	PBC/ private business	Unlikely to affect pollution in the AQ	Reduce industrial emissions through encouraging business to adopt new/ cleaner technology and methods. Where encouragement and education fails enforcement will be considered.	Ongoing	ongoing	No industrial processes currently affect air quality in the AQMA
11.	Fixed penalties for idling cars.	Promoting low emission transport	Public vehicle, change of behaviour	2020	PBC	PBC	Reduction in air pollution across the borough.	Improved awareness, Increased air quality, while reducing NO2	ongoing	2021	Adoption and authorisation of legislation.
12.	Creation of an Air Quality Facebook group.	Promoting travel alternatives	Promoting sustainability	2020	PBC	PBC	Education and awareness	Increase awareness of the issues, and the number of people using	ongoing	ongoing	In the process of setting up the group, and attracting members.

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2.3 PM_{2.5} – Local Authority Approach to Reducing Emissions and/or Concentrations

As detailed in Policy Guidance LAQM.PG16 (Chapter 7), local authorities are expected to work towards reducing emissions and/or concentrations of PM_{2.5} (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that PM_{2.5} has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

The Borough of Pendle do not currently measure for PM_{2.5} however all the actions listed in 2.2 will be reducing PM_{2.5} as well as NOX.

Action plan measures 4, 6, and 9, (see table 2.2 above) should have an effect in reducing PM_{2.5} emissions by reducing the number of vehicles on the road.

The Borough has several designated Smoke Control Areas, covering the densely populated areas, and these are enforced where necessary. The Council responds to any complaint about smoke from chimneys or rubbish burning and works proactively to advise on the harm done by smoke emissions, and where education fails we will take enforcement action.

Lancashire County Council have set out an ambitious cycling and walking strategy, called “Actively Moving Forward”, which aims to increase the number of people actively travelling across the region by 2028. Through improving and increasing access to infrastructure, alongside training and promotional activities.

As part of the Lancashire cycling and walking strategy, work has now commenced on developing Local Cycling and Walking Infrastructure Plans (LCWIPs).

Connecting East Lancashire is a ‘smarter travel choices’ campaign designed to encourage smarter and greener ways of travelling in East Lancashire. A dedicated team of Business Travel Planners is working with individuals and organisations across east Lancashire to support a shift towards more sustainable and active forms of travel.

The County Council is working with district planners to ensure air quality is a key consideration of Local Plans, alongside wider public health issues, supporting district Councils in developing policies that seek to ensure new developments do not

contribute to increasing levels of air pollution and that requirements for appropriate mitigation are in place.

The County Council is working with Lancaster and Birmingham University to develop evidence based guidance for the development of green infrastructure as an approach to mitigating the health impacts of road transport emissions.

The Road Safety Team work with schools, workplaces and community to encourage safe and sustainable modes of travel. Initiatives for schools are promoted through the Safer Travel Moodle and include: a series of cycling and walking safety training programmes: guidance and resources for teachers to encourage safe and active travel; and support for creating travel plans.

Lancashire County Council is working with BP Chargemaster to deliver 150 electric car charging points across the county. The charging network will be accessible to drivers from all over the country and will support local and national efforts to increase the number of drivers purchasing electric vehicles.

Health Impact Data Information about the impact of air pollution on health is available on the Lancashire Insights webpages (see links below) and Public Health has calculated the mortality ranking for Lancashire for PM_{2.5} using the methodology outlined in the Air Quality Briefing for Directors of Public Health (Defra, 2017). Initial analysis of cardiovascular disease and respiratory illness prevalence by GP practice in relation to AQMAs has also been carried out. However, there are many contributing factors to these conditions so further work is needed to provide evidence of a direct correlation. Further analysis of health data is planned

Spatial Planning

There is closer working between Public Health and both county and district planning teams to consider how future local plans can mitigate the effect of poor air quality, as well as address wider public health issues, such as improved opportunities for physical activity and access to green and open space. Public Health is also working with the Lancashire Air Quality Officers Group to support the adoption of Air Quality Planning Policy Guidance across the Lancashire sub-region. The guidance has been developed by Lancaster City Council to assist developers to support action through the planning system to improve air quality.

Transport Planning

Many air quality problems are due to high volumes of traffic. The Strategic Highways Planning team are involved in air quality action planning to aid in the identification of highway measures that can reduce these and local Highways and Transport Masterplans (accessed online, 4th August 2017) have been developed in consultation.

Better transport planning has the biggest impact on reducing pollution locally, specifically: reducing queues at and around junctions therefore removing waiting times; moving congestion away from junctions with high buildings that create canyons at junctions; and smoothing the flows of traffic particularly at motorway junctions. Several AQMAs in the county have helped to shape the County Council's investment decisions (e.g. Broughton bypass).

Transport Schemes Funding is continually being sought for transport infrastructure projects identified in the Highways and Transport Master Plans.

Network Management In relation to management of the road network, sign-only 20mph areas have been introduced in many residential areas in Lancashire to reduce accidents and encourage walking and cycling, these will have a small effect on reducing particulate

Pendle Borough Council

An AQMA layer has been added to the County Council's mapping system enabling transport planners and network management to utilise this information when making decisions about the network.

In built up areas with traffic signal junctions, minimisation of start stop of traffic flow is currently achieved by the use of smart traffic light systems. This software controls signal timings which minimises overall traffic delay (reducing stop starts) in a road network. The County Council also collects traffic count data to support district air quality modelling.

The Borough of Pendle has its own cycling strategy, "Pendle's Cycling Legacy Strategy 2016 - 2021", which has focused on improving physical infrastructure for cycling with the ultimate aim of increasing the number of cyclists for leisure, travel to school, college and work. The strategy is going to focus on missing links between existing cycle paths, to provide a continuous circular route around the Borough, and look to maintain existing towpaths such as the canal.

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3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

This section sets out what monitoring has taken place and how it compares with objectives.

The Borough of Pendle has no automatic/ continuous monitoring stations, all monitoring is through NOX tubes positioned at 56 sites across the borough, with the AQMA and other areas of potential concern being monitored more closely with the positioning of more tubes in these areas.

3.1.2 Non-Automatic Monitoring Sites

The Borough of Pendle undertook non- automatic (passive) monitoring of NO₂ at 56 sites during 2019. Table A.1 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided in https://uk-air.defra.gov.uk/aqma/details?aqma_ref=689. Further details on Quality Assurance/Quality Control (QA/QC) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g. “annualisation” and/or distance correction), are included in Appendix C.

3.1.3 Nitrogen Dioxide (NO₂)

Table A.2 in Appendix A compares the ratified and adjusted monitored NO₂ annual mean concentrations for the past 5 years with the air quality objective of 40µg/m³.

Note that the concentration data presented in Table A.2 represents the concentration at the location of the monitoring site, following the application of bias adjustment (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

The bar chart in figure A.1 shows the annual mean concentration of NOX for each tube location for the last 5 years, the horizontal orange line shows the fresh hold value of 40ug/m³, it can be seen on the graph that the NOX is slowly dropping across the borough, over the last few years.

The bar chart in figure A.2 shows the annual mean concentration of Nox for each tube location within the AQMA for the last 5 years, and this also demonstrates the reduction in NOX in the AQMA.

For diffusion tubes, the full dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 includes distance corrected values, only where relevant.

Following the biased adjustment, there were no monitoring points that showed a yearly exceedance for the annual threshold limit of $40\mu\text{g}/\text{m}^3$ in 2019, and as stated above the trend throughout the Borough is a drop in NOX pollution.

In Brierfield where there had been exceedances in previous years, and in which the number of NOX tubes had been increased to monitor the situation more closely, as there were concerns we may have to designate it an AQMA. There has been a reduction in NOX, this is mainly believed to be a result of the new traffic light system which helps keep traffic flowing (junction of Halifax and Burnley Road). We are going to keep monitoring this area over the next year, however it is now believed that this area will not need to be designated as an AQMA, and we hope to be in a position to reduce the number of NOX tubes in the area in the future.

The situation in Barrowford is very similar to Brierfield, there have been exceedances in the past, however the trend in the area shows a reduction in NOX, again believed to be as a result of traffic flow measures that were introduced. As a result it is believed that the area will not need to be designated an AQMA. We will however continue to monitor the area for the next year, however we hope to be in a position to reduce the number of NOX tubes in the area thereafter.

The general trend over recent years shows a decrease in NOX across the whole of the Borough, we intend to keep the current sampling strategy for the next year, and hope to be in a position to apply to revoke the AQMA in Colne, at which stage we will review the sampling strategy.

Table A.1 – Details of Non-Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
PEN3,4,54	92 Skipton Rd, Colne	Roadside	389,410	440,463	NO ₂	YES (which AQMA)	0	6	NO	2.5
PEN 5, 6	Town Hall, Albert Rd, Colne	Roadside	388,820	440,045	NO ₂	No	2	3.5	NO	2.5
PEN 7, 8	Junc Lord St/ Albert Rd, Colne	Roadside	388,389	439,924	NO ₂	No	0	2	NO	2.5
PEN11, 12	25 Gisburn Rd, Barrowford	Roadside	385,734	438,965	NO ₂	No	0	2.5	NO	2.5
PEN 13, 14	Brunswick St, Nelson	Roadside	386,109	437,634	NO ₂	No	0	6	NO	2.5
PEN 17	62 Burnley Rd, Brierfield	Roadside	384,610	436,118	NO ₂	No	0	2	NO	2.5
PEN 28	Pendle Business Centre	Urban Background	386,296	437,592	NO ₂	No	25	31	NO	2.5
PEN 36	22 Langroyd Rd, Colne	Roadside	389,102	440,540	NO ₂	No	0	3	NO	2.5
PEN 46	52 Albert Rd, Colne	Roadside	388,655	440,002	NO ₂	No	0	6	NO	2.5

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PEN 47	Jaipur, 19 Albert Rd, Colne	Roadside	388,711	439,999	NO2	No	0	5	NO	2.5
PEN 50	59 Burnley Rd	Roadside	387,922	439,500	NO2	No	0	2	NO	2.5
PEN63, 64	100 Skipton Rd, Colne	Roadside	389,425	440,490	NO2	No	0	5	NO	2.5
PEN 65, 66	60 Windsor St, Colne	Roadside	389,159	440,488	NO2	YES (which AQMA)	0	4	NO	2.5
PEN 67/68	44 Windsor St, Colne	Roadside	389,207	440,484	NO2	YES (which AQMA)	0	4	NO	2.5
PEN 69/ 70	32 Windsor St, Colne	Roadside	389,250	440,482	NO2	YES (which AQMA)	0	4	NO	2.5
PEN 71	Rowlands, 7 Albert Rd, Colne	Roadside	388,755	440,026	NO2	No	0	4	NO	2.5
PEN 72	82 Burnley Rd, Brierfield	Roadside	384,587	436,098	NO2	No	0	1	NO	2.5
PEN 73	92 Burnley Rd, Brierfield	Roadside	384,576	436,006	NO2	No	0	1.5	NO	2.5
PEN 74	14 Gisburn Rd, Barrowford	Roadside	385,728	438,925	NO2	No	0	2	NO	2.5
PEN 75	17 Gisburn Rd, Barrowford	Roadside	385,732	438,936	NO2	No	0	2.5	NO	2.5
PEN 76,77	9 Langroyd Road, Colne	Roadside	389, 081	440,519	NO2	No	0	2	NO	2.5
PEN 78, 79	10 Langroyd Rd, Colne	Roadside	389, 098	440,508	NO2	No	0	2	NO	2.5
PEN 82/ 83	257 North Valley Rd, Colne	Roadside	389,061	440,482	NO2	No	0	4	NO	2.5
PEN 84/ 85	Junc Lord St/ Albert Rd, Colne	Roadside	389,079	440,492	NO2	No	0	2.5	NO	2.5

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PEN86/87	Likkle Monkeys, Langroyd Rd, Colne	Roadside	389,105	440,484	NO2	No	25	4	NO	2.5
PEN 90	37 Parker St, Colne	Roadside	388,138	440,143	NO2	No	0	2	NO	2.5
PEN 91/92	3 Burnley Rd, Brierfield	Roadside	384,664	436,365	NO2	No	0	3.2	NO	2.5
PEN93/ 94	62 Colne Rd, Brierfield	Roadside	384,682	436,650	NO2	No	0	3.5	NO	2.5
PEN 95/ 96	145 Gisburn Road, Barrowford	Roadside	385,975	439,719	NO2	No	0	4.3	NO	2.5
PEN 97/98	2 Brookbank, Gisburn Rd, B'ford	Roadside	386,101	439,797	NO2	No	0	3.5	NO	2.5
PEN 99	18 Burnley Road, Brierfield	Roadside	384, 683	436, 357	NO2	No	0	2	NO	2.5

Notes:

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

(2) N/A if not applicable.

Table A.2 – Annual Mean NO₂ Monitoring Results

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2019 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ^{(3) (4)}				
							2015	2016	2017	2018	2019
PEN 3,4,54	389,410	440,463	Roadside	Diffusion Tube	100	92	-	35.1	33.7	33.7	26.8
PEN 5, 6	388,820	440,045	Roadside	Diffusion Tube	100	83	34.1	38.5	34.8	29.5	31.1
PEN 7, 8	388,389	439,924	Roadside	Diffusion Tube	100	83	29.6	30.8	32.8	30.8	29.3
PEN 11, 12	385,734	438,965	Roadside	Diffusion Tube	100	92	29.7	32.6	28.8	27.4	29.6
PEN 13, 14	386,109	437,634	Roadside	Diffusion Tube	100	100	30.3	30.5	31	27.7	31.7
PEN 17	384,610	436,118	Roadside	Diffusion Tube	100	92	34.6	36	35.6	38.8	34.7
PEN28	386,296	437,592	Urban Background	Diffusion Tube	100	92	16.1	16	17.1	15	17.4
PEN 36	389,102	440,540	Roadside	Diffusion Tube	100	83	30.7	33.1	28.6	29.3	30.2
PEN46	388,655	440,002	Roadside	Diffusion Tube	100	100	35	33.2	30.9	26.2	29.9
PEN 47	388,711	439,999	Roadside	Diffusion Tube	100	100	33.2	35.1	34.9	30.7	31.4
PEN 50	387,922	439,500	Roadside	Diffusion Tube	100	100	31.9	33.5	33.7	30.4	30.4
PEN 63, 64	389,425	440,490	Roadside	Diffusion Tube	100	92	27.7	31.6	29.4	28.1	27.1
PEN 65, 66	389,159	440,488	Roadside	Diffusion Tube	100	100	35.4	37	39.9	30.5	29.9
PEN 67, 68	389,207	440,484	Roadside	Diffusion Tube	100	75	33.7	37.1	35.5	32	32.8
PEN 69, 70	389,250	440,482	Roadside	Diffusion	100	92	33.3	36.2	33.2	29.3	29.8

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				Tube							
PEN 71	388,755	440,026	Roadside	Diffusion Tube	100	100	33.4	34.9	35.2	32	31.2
PEN 72	384,587	436,098	Roadside	Diffusion Tube	100	100			31.4	29	30.6
PEN 73	384,576	436,006	Roadside	Diffusion Tube	100	100			32.5	31.2	32
PEN 74	385,728	438,925	Roadside	Diffusion Tube	100	100			29.4	27.9	29.4
PEN 75	385,732	438,936	Roadside	Diffusion Tube	100	92			35	28.9	31.5
PEN 76, 77	389, 081	440,519	Roadside	Diffusion Tube	100	75				26.3	28
PEN 78, 79	389, 098	440,508	Roadside	Diffusion Tube	100	92				31.6	31.7
PEN 82, 83	389,061	440,482	Roadside	Diffusion Tube	100	92			30.9	28.2	31
PEN 84, 85	389,079	440,492	Roadside	Diffusion Tube	100	92			40.7	36.3	37.6
PEN 86, 87	389,105	440,484	Roadside	Diffusion Tube	100	100			40.3	37.4	37.9
PEN 90	388,138	440,143	Roadside	Diffusion Tube	100	83			28.3	23.6	26.7
PEN 91, 92	384,664	436,365	Roadside	Diffusion Tube	100	100			39.1	31.4	37.5
PEN 93, 94	384,682	436,650	Roadside	Diffusion Tube	100	96			35.6	30.6	35.1
PEN 95, 96	385,975	439,719	Roadside	Diffusion Tube	100	100			30.1	28.1	28.9
PEN 97, 98	386,101	439,797	Roadside	Diffusion Tube	100	100			28.4	26	26.8
PEN 99	384, 683	436, 357	Roadside	Diffusion Tube	100	75			34.7	34.5	37.7
PEN 1,2	388, 749	440,382	Roadside	Diffusion Tube	100	100	26.2	29.3			

PEN 16	383, 959	437,080	Roadside	Diffusion Tube	100	100	25.8	28			
PEN 31	389, 443	440,461	Roadside	Diffusion Tube	100	100	29	31.6			
PEN 37	389,081	440,539	Roadside	Diffusion Tube	100	100	28.4	29.4			
PEN 38	389, 124	440, 719	Roadside	Diffusion Tube	100	100	27	27.9			
PEN 41	388, 652	440, 351	Roadside	Diffusion Tube	100	100	29.9	28.1			
PEN 55, 56, 57	389, 424	440, 466	Roadside	Diffusion Tube	100	100	32.4	34.5			

RE THEN PASTE COMPLETED DATA ROWS FROM EXCEL TEMPLATE

- ☒ Diffusion tube data has been bias corrected (confirm by selecting in box)
- ☐ Annualisation has been conducted where data capture is <75% (confirm by selecting in box)
- ☐ Reported concentrations are those at the location of the monitoring site (bias adjusted and annualised, as required), i.e. prior to any fall-off with distance adjustment (confirm by selecting in box)

Notes:

Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

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

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per Boxes 7.9 and 7.10 in LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(4) Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

Figure A.1 – Trends in Annual Mean NO₂ Concentrations

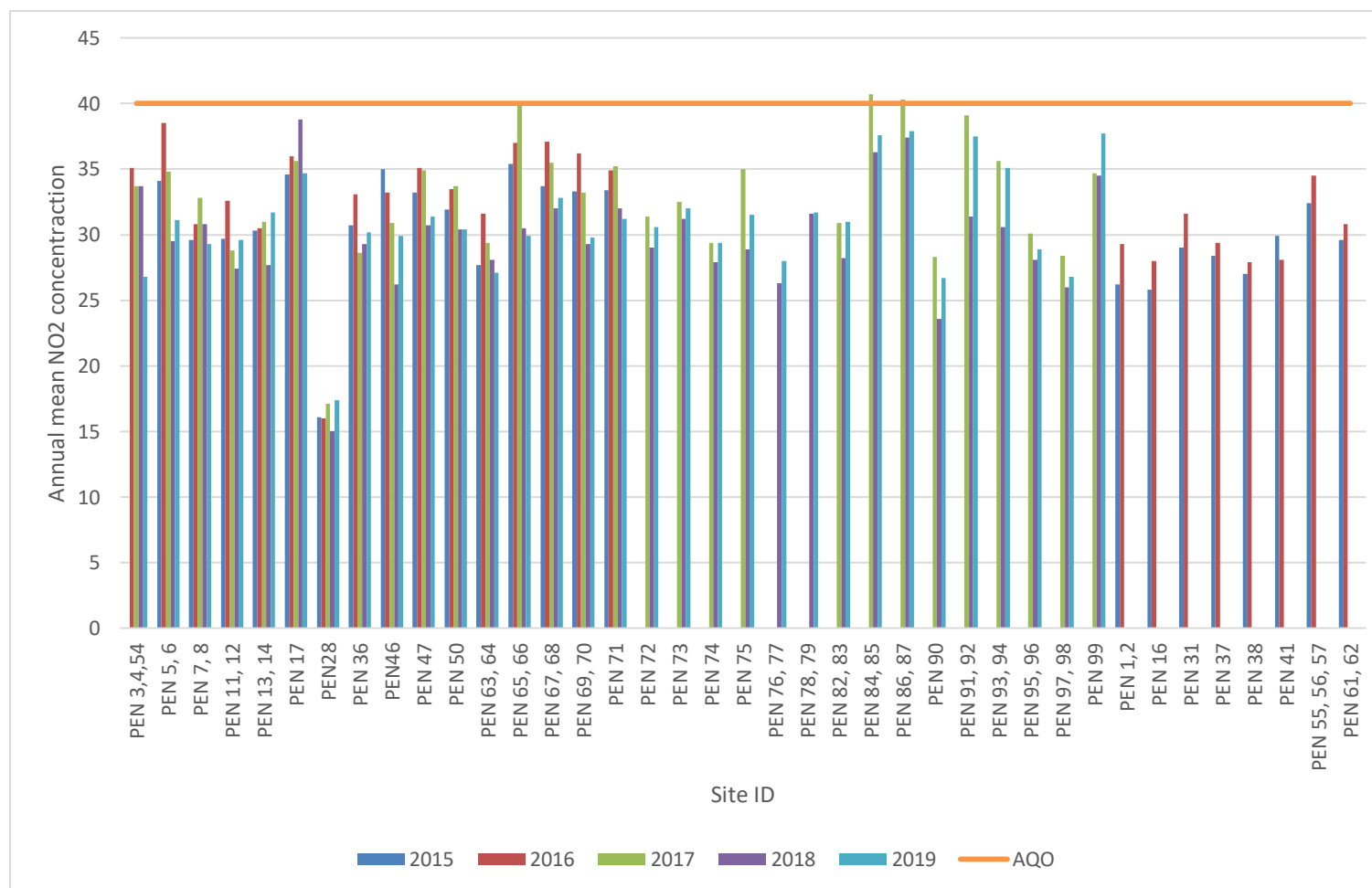
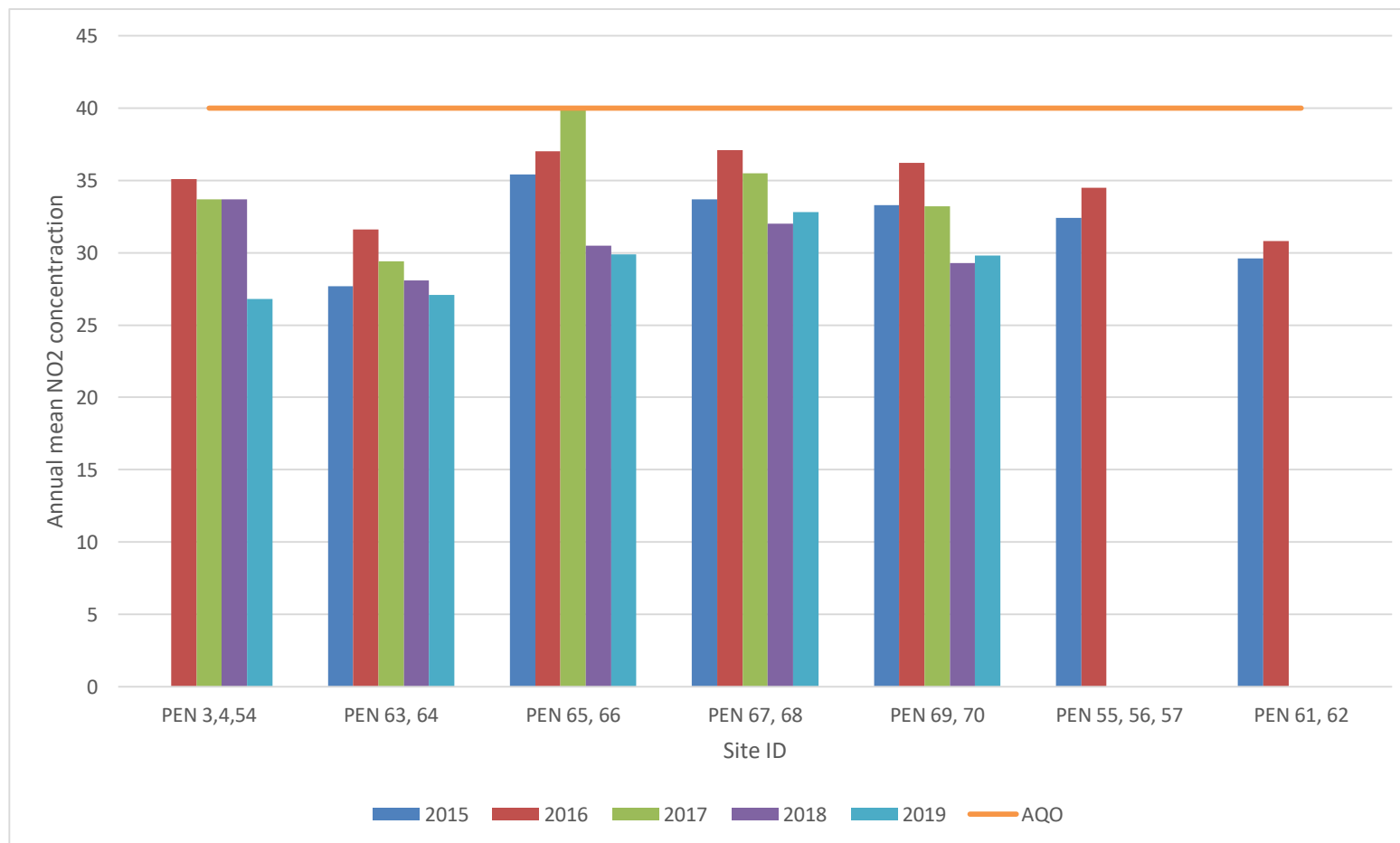


Figure A.2 – Trends in Annual Mean NO₂ Concentrations within the AQMA



Appendix B: Full Monthly Diffusion Tube Results for 2019

Table B.1 - NO₂ Monthly Diffusion Tube Results - 2019

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northi ng)	NO ₂ Mean Concentrations (µg/m ³)												Annual Mean		
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (factor) and Annualise d ⁽¹⁾	Distance Correcte d to Nearest Exposur e ⁽²⁾
PEN3	389,410	440,46 3	40.32	36.53	34.66	29.23	29.23	29.23	29.23	28.71	29.34	TM	38.66	33.14			
PEN4			48.41	41.77	29.42	23.36	26.63	23.65	26.16	24.15	27.82	TM	36.19	38.46			
PEN5			42.79	40.98	31.32	29.51	27.97	28.23	23.58	28.96	22.03	TM	40.84	39.53			
PEN6			43.84	39.76	31.80	27.36	27.11	27.03	26.32	27.27	26.39	TM	38.56	37.04	29.2	26.9	n/a
PEN7	388,820	440,04 5	48.79	TM	TM	31.07	30.10	30.56	28.32	24.00	35.55	37.35	37.12	34.48			
PEN8			47.57	TM	TM	31.56	31.69	32.74	29.64	24.68	31.09	36.75	37.96	34.36			
PEN9			48.18	TM	TM	31.13	30.90	31.65	28.98	24.34	33.32	37.05	37.54	34.42	33.8	31.1	n/a
PEN1 0	388,389	439,92 4	44.01	37.6	31.36	28.92	25.02	24.92	27.60	26.08	28.72	TM	35.26	37.57			
PEN1 1			45	39.91	TM	40.78	25.56	23.50	25.41	25.51	27.54	TM	30.36	38.99			
PEN1 2			44.5	38.8	31.36	34.85	25.29	24.21	26.50	25.80	28.13	TM	32.81	38.28	31.9	29.3	n/a
PEN1 3	385,734	438,96 5	43.53	45.28	34.55	26.07	27.45	27.00	27.16	27.77	26.24	30.79	35.37	40.02			

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PEN1 4			41.61	TM	29.32	27.47	25.81	24.69	26.77	27.75	29.31	TM	34.95	38.05			
PEN1 5			42.57	45.28	31.94	26.77	26.63	25.85	26.97	27.76	27.77	30.79	35.16	39.03	32.2	29.6	n/a
PEN1 6	386,109	437,634	40.64	47.38	32.14	30.59	29.09	27.59	29.96	31.68	28.87	36.02	37.30	41.75			
PEN1 4			42.95	47.86	42.49	28.62	22.55	28.16	28.34	34.30	29.24	30.11	33.92	46.04			
			41.795	47.62	37.32	29.61	25.82	27.88	29.15	32.99	29.06	33.07	35.61	43.90	34.5	31.7	n/a
PEN1 7	384,610	436,118	49.18	48.55	37.34	34.40	31.69	33.65	33.78	32.68	31.96	TM	39.86	41.89	37.7	34.7	n/a
PEN2 8	386,296	437,592	29.87	27.27	18.47	14.78	12.92	12.35	12.25	13.19	16.57	TM	25.19	24.91	18.9	17.4	n/a
PEN3 6	389,102	440,540	41.44	39.82	27.07	41.52	31.15	31.43	26.29	28.25	27.42	TM	TM	33.49	32.8	30.2	n/a
PEN4 6	388,655	440,002	41.94	33.45	30.93	29.78	31.31	23.75	29.52	24.91	48.86	31.65	32.46	32.05	32.5	29.9	n/a
PEN4 7	388,711	439,999	44.61	41.91	32.87	31.99	29.42	29.29	30.13	27.74	29.45	35.81	38.23	38.38	34.2	31.4	n/a
PEN5 0	387,922	439,500	43.86	40.5	31.78	29.33	28.46	26.04	27.54	30.56	27.87	34.55	32.07	44.36	33.1	30.4	n/a
PEN6 3	389,425	440,490	42.11	31.75	TM	36.21	26.08	25.76	25.03	22.82	28.21	32.06	36.29	31.46			
PEN6 4			41.02	33.73	25.6	31.64	26.39	27.68	22.44	23.67	18.87	25.10	36.04	32.24			
			41.6	32.74	25.6	33.93	26.23	26.72	23.73	23.24	23.54	28.58	36.17	31.85	29.49	27.1	n/a
PEN6 5	389,159	440,488	39.16	43.94	32.55	35.50	29.26	25.98	29.13	6.90	10.35	38.47	46.34	38.06			
PEN6 6			45.94	41.32	32.06	33.66	30.67	28.14	28.69	27.99	25.75	38.48	31.77	35.56			
			42.55	42.63	32.32	36.58	29.90	27.06	28.91	17.45	18.05	38.47	39.05	36.81	32.48	29.9	n/a
PEN6 7	389,207	440,484	44.49	41.23	TM	TM	TM	28.80	29.32	30.35	32.57	31.28	43.45	38.36			

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PEN6 8			50.21	41.87	TM	TM	TM	28.25	25.89	31.46	32.69	29.57	41.41	41.31			
			47.35	41.55	TM	TM	TM	28.53	27.60	30.90	32.63	30.42	42.43	39.84	35.7	32.8	n/a
PEN6 9	389,250	440,48 2	43.38	42.07	32.45	33.94	TM	28.95	29.13	26.75	30.17	29.06	32.82	35.54			
PEN7 0			46.05	37.61	29.5	32.69	TM	TM	25.52	28.14	32.00	28.40	24.21	35.42			
			44.7	39.84	30.98	33.32	TM	28.95	27.33	27.44	31.08	28.73	28.52	35.48	32.4	29.8	n/a
PEN7 1	388755	440026	41.79	42.41	32.63	36.44	29.42	30.60	30.51	29.07	28.07	38.55	30.74	36.98	33.9	31.2	n/a
PEN7 2	384587	436098	44.52	46.38	29.39	32.27	27.98	26.35	25.52	25.69	27.07	34.14	41.41	38.04	33.2	30.6	n/a
PEN7 3	384576	436006	46.85	41.41	27.65	40.45	30.18	33.06	26.26	28.39	28.97	30.21	44.60	39.61	34.8	32.0	n/a
PEN7 4	385728	438925	41.33	42.04	28.63	36.57	26.99	26.47	25.72	24.64	29.80	32.07	32.73	35.84	31.9	29.4	n/a
PEN7 5	385732	438936	46.35	47.42	38.13	27.55	29.60	5.85	31.86	32.35	29.71	TM	39.71	47.77	34.2	31.5	n/a
PEN7 6	389,081	440,51 9	43.13	TM	31.49	42.26	21.67	22.40	23.93	23.34	26.91	TM	TM	34.73			
PEN7 7			40.87	TM	30.97	44.53	24.56	26.23	23.64	24.41	28.48	TM	TM	33.57			
			42	TM	31.23	43.39	23.11	24.32	23.79	23.88	27.70	TM	TM	34.15	30.4	28.0	n/a
PEN7 8	389.098	440,50 8	39.99	47.45	34.55	29.61	30.59	35.33	26.96	0.93	29.94	32.37	45.13	43.60			
PEN7 9			48.84	TM	33.23	30.65	32.12	30.18	TM	32.12	28.86	TM	42.97	45.17			
			44.4	47.45	33.89	30.13	31.36	32.76	26.96	16.53	29.40	32.37	44.05	44.38	34.47	31.7	n/a
PEN8 2			40.06	43.26	26.89	33.35	29.87	27.33	27.47	29.36	30.27	TM	43.09	40.18			
PEN8 3			42.29	44.54	27.84	35.06	31.93	27.14	26.43	24.61	29.63	TM	41.79	39.11			
			41.2	43.9	27.37	34.21	30.90	27.24	26.95	26.99	29.95	TM	42.44	39.65	33.7	31.0	n/a

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PEN8 4	389079	440492	56.05	48.02	45.34	35.71	42.04	32.79	39.86	41.27	38.78	38.88	12.61	47.30			
PEN8 5			52.95	51.49	TM	35.59	35.13	33.97	36.65	41.60	42.32	TM	39.21	49.61			
			54.5	49.8	45.34	35.65	38.58	33.38	38.25	41.43	40.55	38.88	25.91	48.46	40.89	37.6	n/a
PEN8 6	389105	440484	52.71	52.07	37.48	41.23	32.16	36.09	31.79	37.42	36.87	42.47	47.68	39.80			
PEN8 7			61.35	50.54	35.54	36.47	34.35	34.46	37.07	37.47	37.38	43.76	47.45	44.67			
			57.03	51.3	36.51	38.35	33.41	35.28	34.43	37.45	37.13	43.11	47.56	42.23	41.15	37.9	n/a
PEN9 0	388138	440143	42.29	38.13	24.93	26.13	22.88	20.62	17.44	27.25	30.91	TM	TM	39.31	29.0	26.7	n/a
PEN9 1	384664	436365	49.1	49.13	54.34	31.22	40.82	38.47	40.91	42.56	32.74	35.72	40.56	40.29			
PEN9 2			44.36	50.54	45.59	34.19	35.91	39.00	37.04	40.63	37.03	36.37	41.63	39.03			
			46.73	49.8	49.96	32.71	38.36	38.74	38.98	41.59	34.89	36.04	41.10	39.66	40.72	37.5	n/a
PEN9 3	384682	436650	47.03	48.94	43.24	26.53	32.58	33.65	33.28	36.79	32.15	38.05	43.14	43.49			
PEN9 4			53.06	51.28	45.59	25.85	33.30	TM	36.13	40.59	34.06	23.05	37.59	42.87			
			50	50.11	44.42	26.19	32.94	33.65	34.70	38.69	33.10	30.55	40.36	43.18	38.16	35.1	n/a
PEN9 5	385975	439719	39.05	41.95	26.45	32.24	25.64	27.26	27.11	26.91	24.54	32.11	36.64	38.64			
PEN9 6			36.31	41.44	27.18	33.61	26.26	29.40	26.25	25.87	27.55	27.98	36.19	37.49			
			37.68	41.7	26.82	32.93	25.95	28.33	26.68	26.39	26.04	30.04	36.42	38.06	31.42	28.9	n/a
PEN9 7	386101	439797	36.34	37.03	27.12	21.93	23.98	28.19	25.04	25.49	27.41	27.02	35.47	37.06			
PEN9 8			36.28	34.58	23.77	27.11	25.53	24.90	25.83	26.71	27.25	27.25	30.63	36.51			

			36.31	35.80 5	25.45	24.52	24.76	26.55	25.44	26.10	27.33	27.13	33.05	36.79	29.1	26.8	n/a
PEN9 9	384683	436357	50.79	48.85	34.05	50.63	37.65	38.37	36.98	33.43	TM	TM	TM	38.47	41.0	37.7	n/a

CLICK HERE THEN PASTE COMPLETED DATA ROWS FROM EXCEL TEMPLATE

- ☒ National bias adjustment factor used **(confirm by selecting in box)**
- ☐ Annualisation has been conducted where data capture is <75% **(confirm by selecting in box)**
- ☐ Where applicable, data has been distance corrected for relevant exposure in the final column **(confirm by selecting in box)**

Notes:

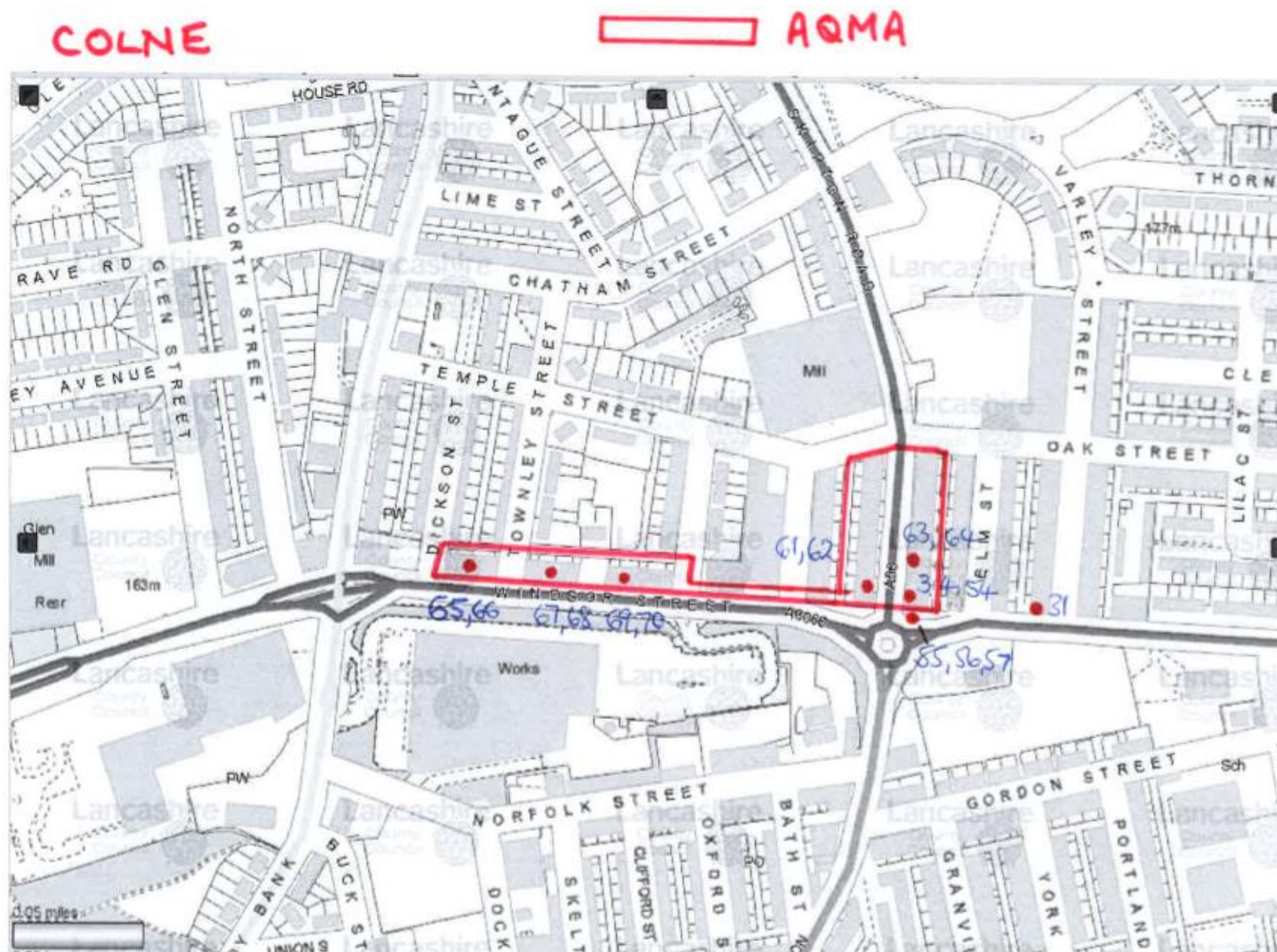
Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

(1) See Appendix C for details on bias adjustment and annualisation.

(2) Distance corrected to nearest relevant public exposure.

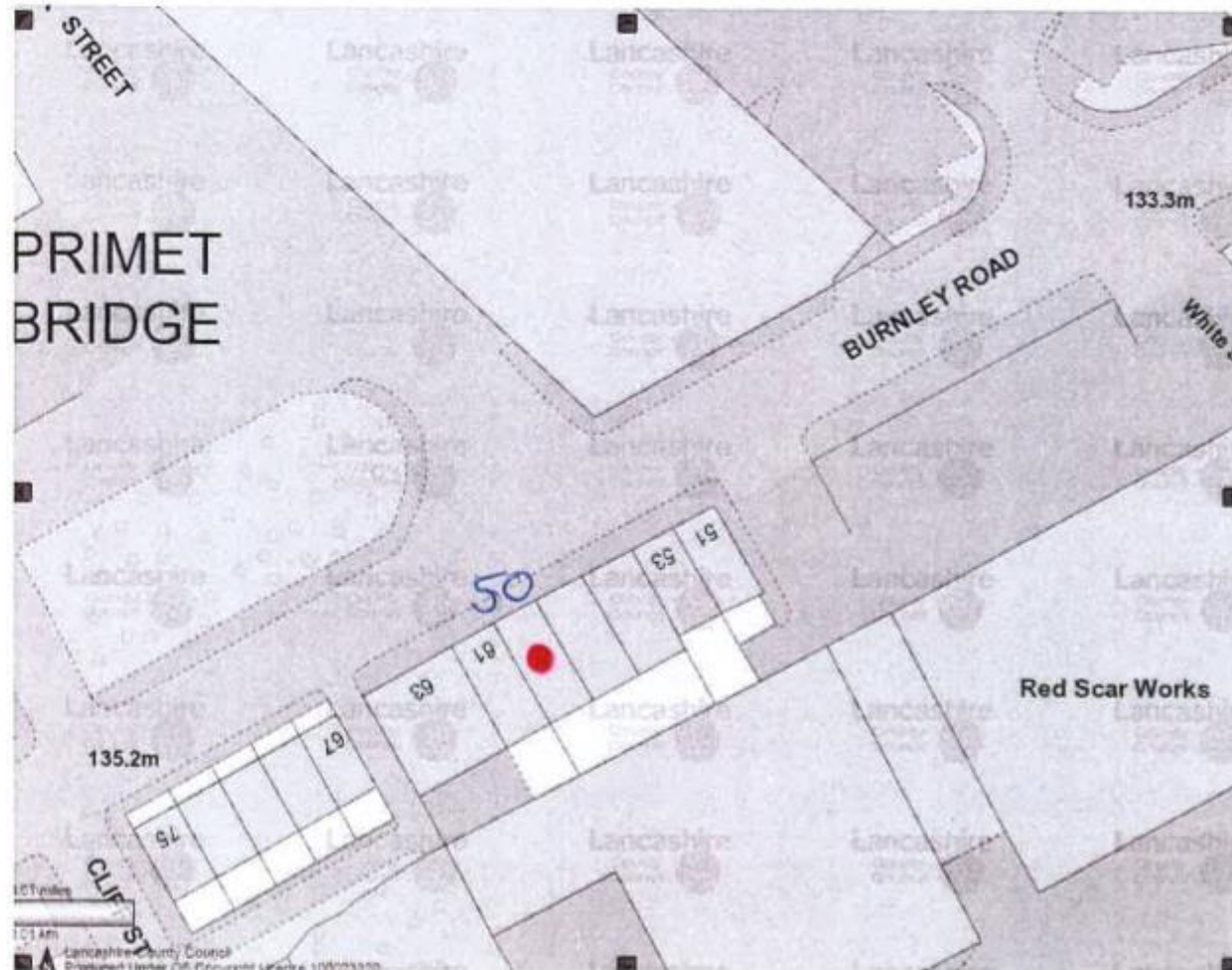
Appendix D: Map(s) of Monitoring Locations and AQMAs



COLNE



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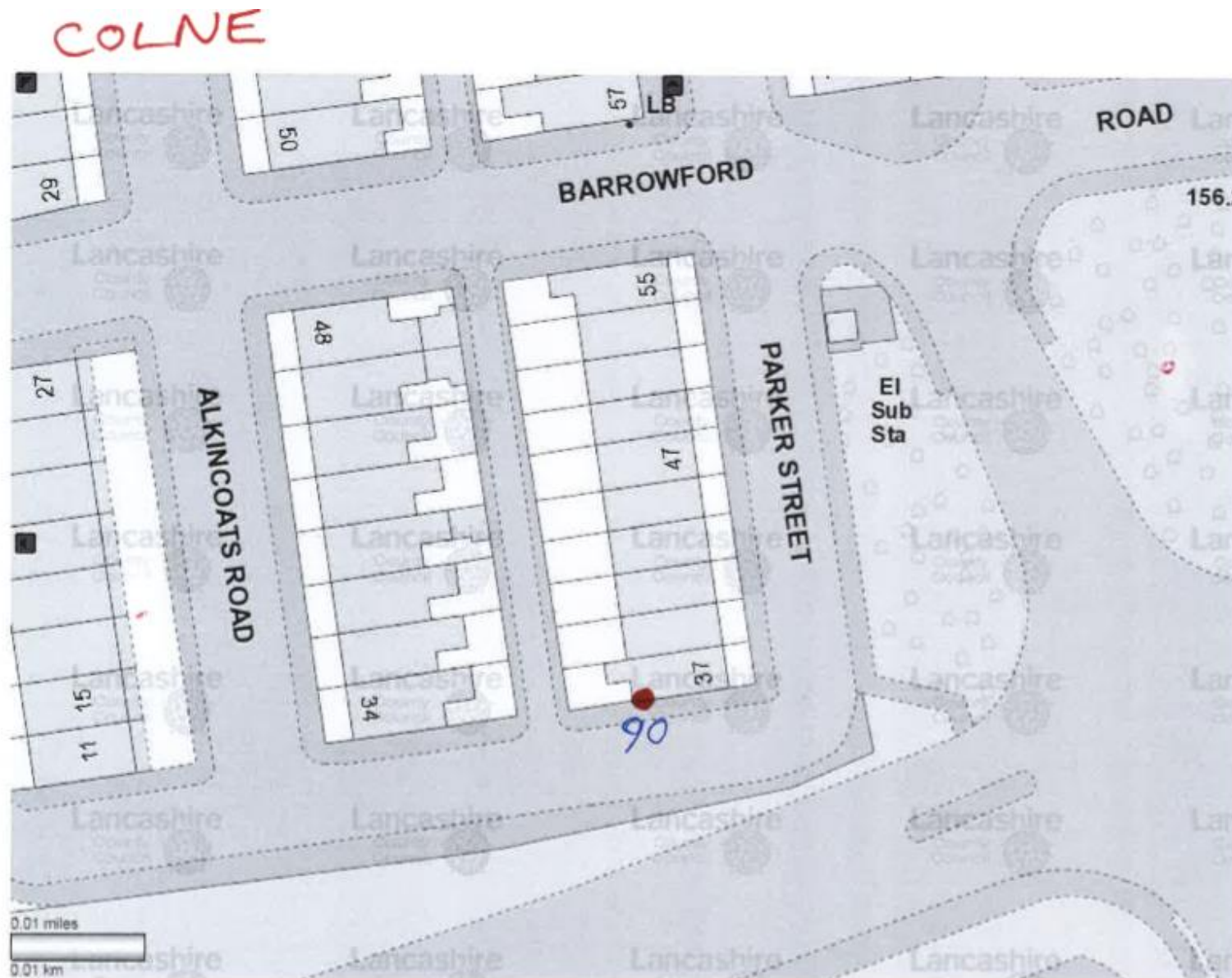


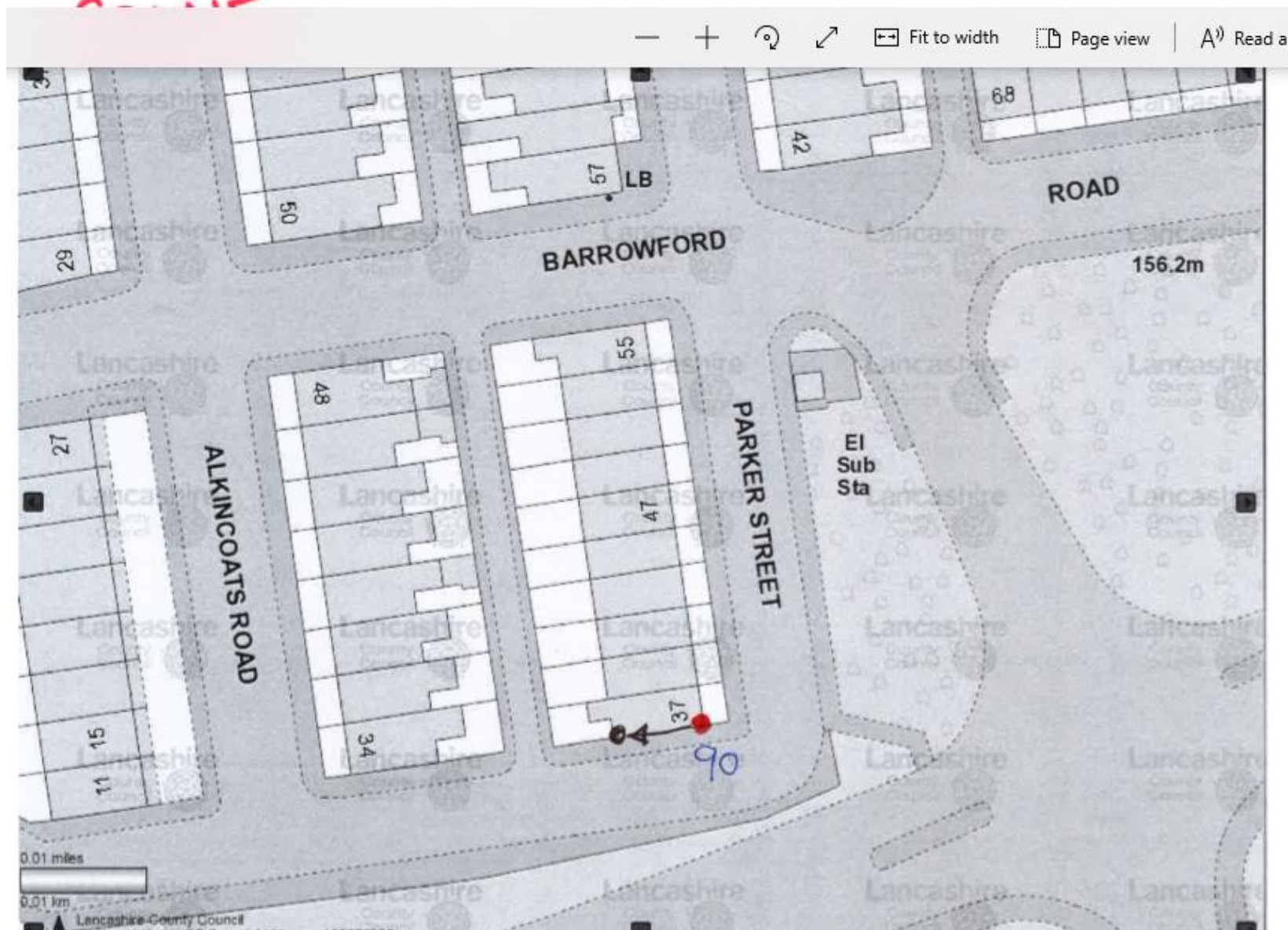
COLNE



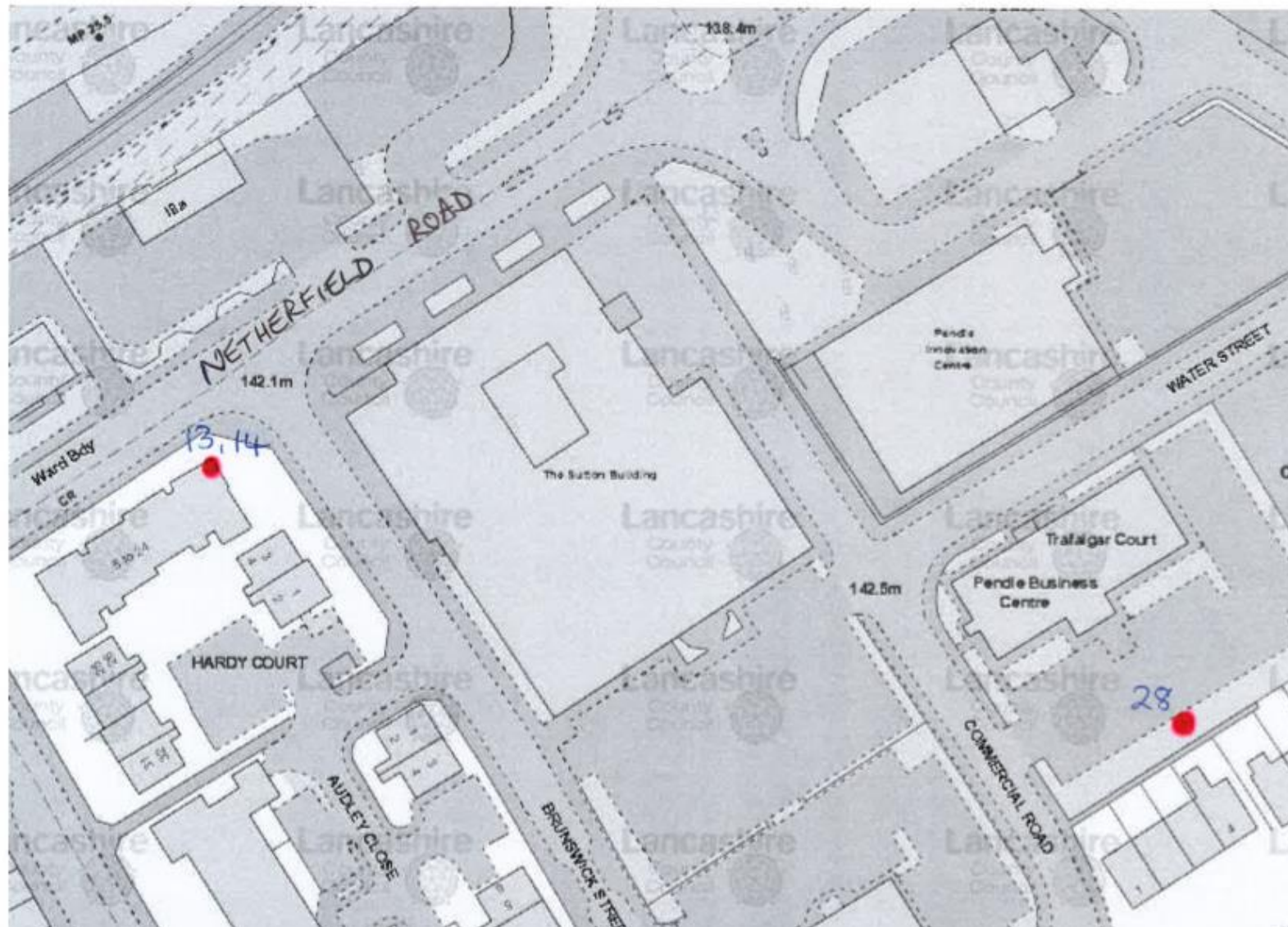
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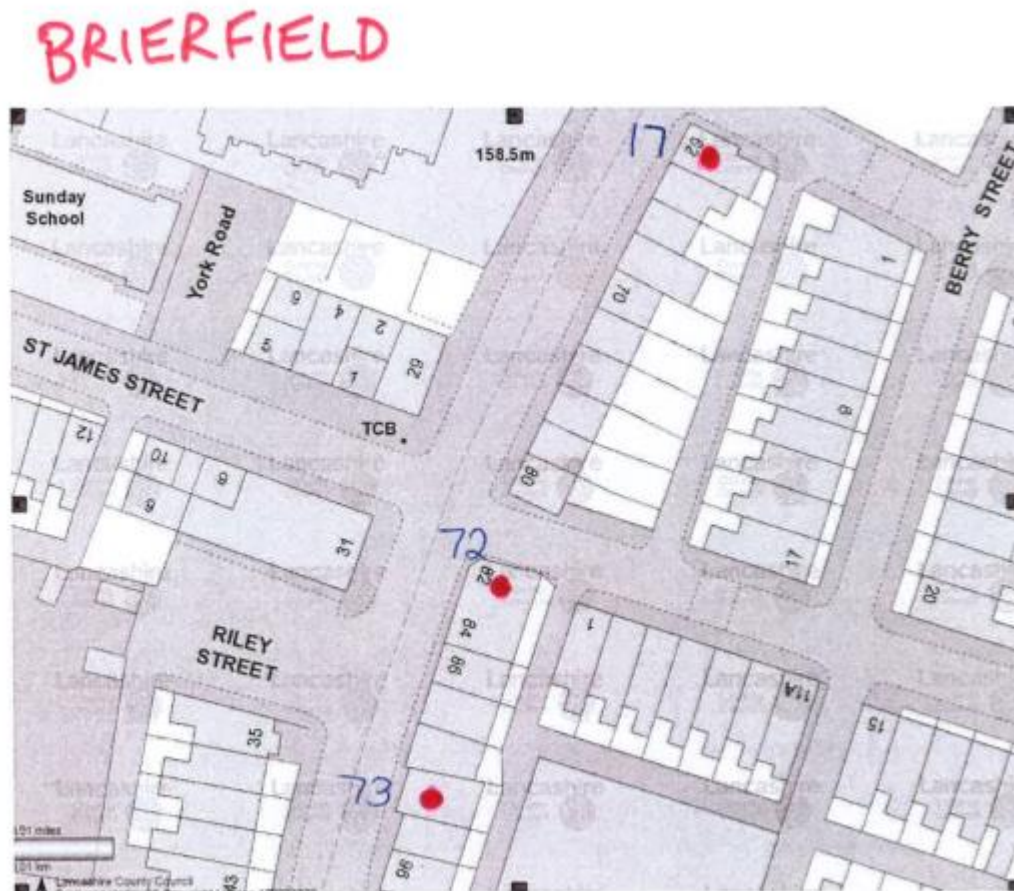


NELSON



BRIERFIELD





BRIERFIELD



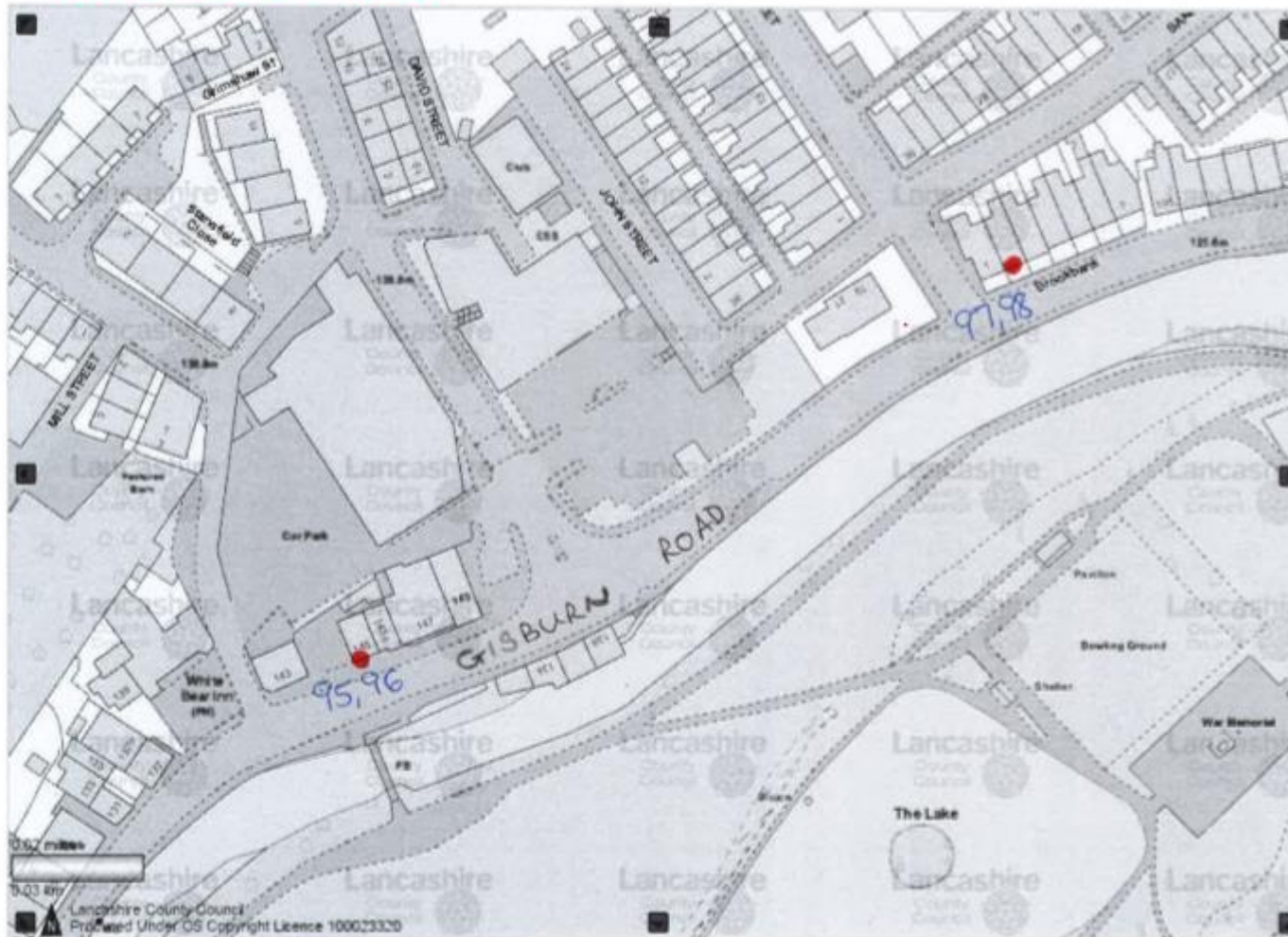
BRIERFIELD



BARROWFORD



BARROWFORD



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective ⁴	
	Concentration	Measured as
Nitrogen Dioxide (NO ₂)	200 µg/m ³ not to be exceeded more than 18 times a year	1-hour mean
	40 µg/m ³	Annual mean
Particulate Matter (PM ₁₀)	50 µg/m ³ , not to be exceeded more than 35 times a year	24-hour mean
	40 µg/m ³	Annual mean
Sulphur Dioxide (SO ₂)	350 µg/m ³ , not to be exceeded more than 24 times a year	1-hour mean
	125 µg/m ³ , not to be exceeded more than 3 times a year	24-hour mean
	266 µg/m ³ , not to be exceeded more than 35 times a year	15-minute mean

⁴ The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Air quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO ₂	Sulphur Dioxide
...	...

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