Preston City Council

Air Quality Action Plan

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

2025

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Date	TBC
Assisted by	Air Quality CONSULTANTS

Executive Summary

This Air Quality Action Plan (AQAP) has been produced as part of our statutory duties required by the Local Air Quality Management framework. It outlines the action we will take to improve air quality in Preston between 2025-2030.

This action plan replaces the previous action plan which was adopted in 2014. Projects delivered through the previous action plan include:

- Incorporating requirements for electric vehicle charging points into the planning system;
- Completing the construction of Broughton Bypass to relocate traffic flows to less congested roads;
- Infrastructure improvements on New Hall Lane to increase the distance between pollutant sources and receptors; and
- Completing the construction of Preston Western distributor road.

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 billion[3]. Preston City Council is committed to reducing the exposure of people in Preston to poor air quality to improve health.

We have developed actions that can be considered under five broad topics:

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[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

- Policy guidance and development control;
- Promoting low emission transport;
- Public information;
- Transport planning and infrastructure; and
- Traffic management.

Our priorities are to encourage modal shift away from private vehicle use and towards active travel / public transport alternatives, with remaining vehicle trips to be via electric vehicles where possible; increase collaboration across Councils on policy development; and aim to reduce concentrations, especially PM_{10} and $PM_{2.5}$, below legal limits.

In this AQAP we outline how we plan to effectively tackle air quality issues within our control. However, we recognise that there are a large number of air quality policy areas that are outside of our influence (such as vehicle emissions standards agreed in Europe), but for which we may have useful evidence, and so we will continue to work with regional and central government on policies and issues beyond Preston City Council's direct influence.

Responsibilities and Commitment

This AQAP was prepared by Air Quality Consultants Ltd and the Environmental Health Department of Preston City Council with the support and agreement of the following officers and departments:

- Planning Officers at Preston City Council
- Engineering and Riverway Officer at Preston City Council
- Development Control Officer at Preston City Council
- Climate Change Officer at Preston City Council
- Transport Planner at Lancashire County Council
- Transport Planner (specifically for Electric Vehicle Charging Infrastructure) at Lancashire County Council
- Public Transport Manager at Lancashire County Council

- Public Health Practitioner at Lancashire County Council
- Sustainable Travel Manager (walking and cycling) at Lancashire County Council; and
- Planning and Transport Advisor at Lancashire County Council.

This AQAP will be approved by Cabinet.

This AQAP will be formally reviewed and republished on a five-yearly cycle from date of initial publication. Progress each year will be reported in the Annual Status Reports (ASRs) produced by Preston City Council, as part of our statutory Local Air Quality Management duties.

If you have any comments on this AQAP, please send them to the Council's Environmental Health Department at:

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1 Introduction

This report outlines the actions that Preston City Council will deliver between 2025 and 2030 in order to reduce concentrations of air pollutants and exposure to air pollution; thereby positively impacting on the health and quality of life of residents and visitors to Preston.

It has been developed in recognition of the legal requirement on the local authority to work towards Air Quality Strategy (AQS) objectives under Part IV of the Environment Act 1995 and relevant regulations made under that part and to meet the requirements of the Local Air Quality Management (LAQM) statutory process.

This Plan will be reviewed every five years at the latest and progress on measures set out within this Plan will be reported on annually within Preston City Council's Annual Status Reports (ASRs).

2 Summary of Current Air Quality in Preston

A full summary of current air quality in Preston is provided in the 2023 Air Quality Annual Status Report (ASR). No exceedances of the nitrogen dioxide or particulate matter objectives were recorded at any monitoring locations in 2022; the last recorded exceedance of the annual mean nitrogen dioxide objective of 40 µg/m^3 was in AQMA 4 in 2019. In relation to trends, there has been an overall decline in concentrations since 2017, with particularly low concentrations in 2020 and 2021, reflecting reduced vehicle use in years affected by Covid restrictions.

The 2023 ASR concluded that AQMAs 1, 3 and 5 should be revoked due to successive years of monitored concentrations well below the relevant objectives. This Air Quality Action Plan therefore focuses on AQMAs 2 and 4, where only the annual mean nitrogen dioxide objective is at risk of being exceeded. The location of AQMAs 2 and 4 are shown in Figure 1 and Figure 2, respectively. The Action Plan includes actions that will improve air quality generally as well as those that are targeted on the AQMAs.

Figure 1 AQMA 2 (Blackpool Road and Plungington Road junction) - Location and Monitoring Sites

Figure 2 AQMA 4 (New Hall Lane) – Location and Monitoring Sites

Figure 3 and Figure 4 show measured concentrations in AQMA 2 and AQMA 4, respectively, from 2017 to 2022 (the most recent year of published data at time of writing). AQMA 2 has had no exceedances of the objectives for the last five years, with the highest value of 37.1 µg/m^3 recorded at monitoring site PR5 in 2019, compared to a value of 29 µg/m^3 measured at the same site in 2022. The last recorded exceedance of the objective in AQMA 4 was at monitoring site PR39 (42.2 µg/m^3) in 2019. However, concentrations have since reduced substantially, and the maximum concentration in 2022 was also recorded at PR39, but was well below the objective (33 µg/m^3).

Both AQMAs are currently being retained because there has not been 3 years below 90% of the objective level (36 µg/m^3) outside of years affected by Covid, in line with LAQM.TG(22). If measured concentrations in 2023 and 2024 remain below 36 µg/m^3, the AQMAs will be revoked in 2025.

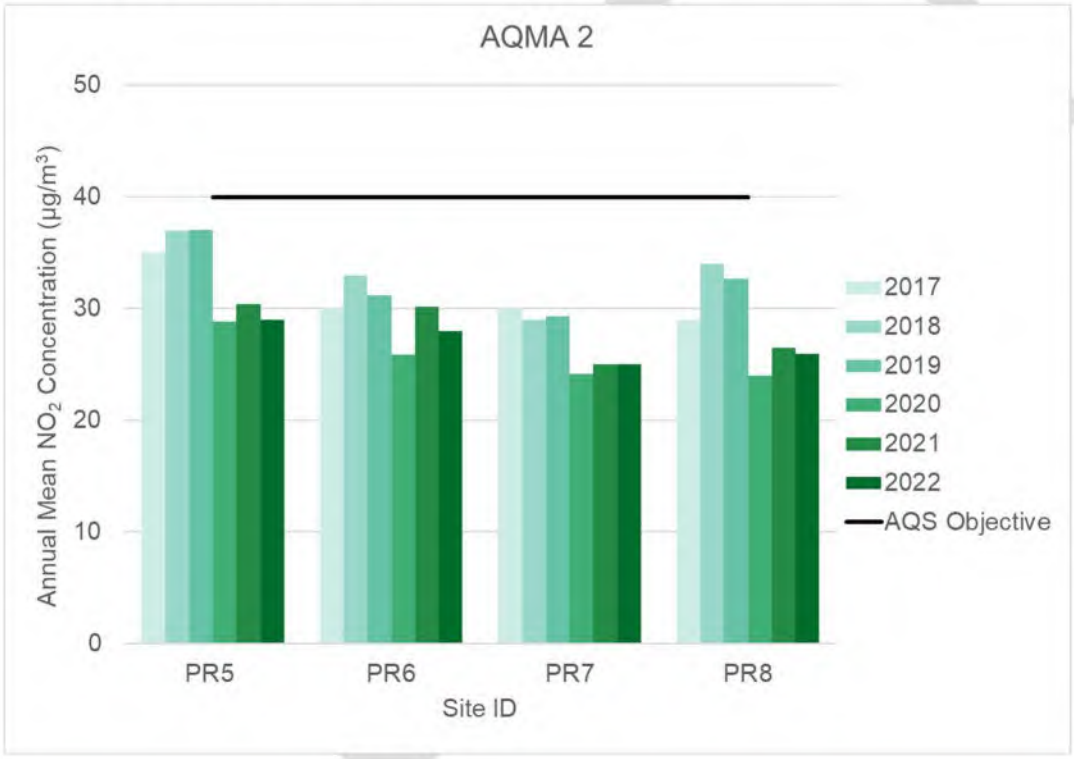

Figure 3: Measured Annual Mean Nitrogen Dioxide Concentrations AQMA 2

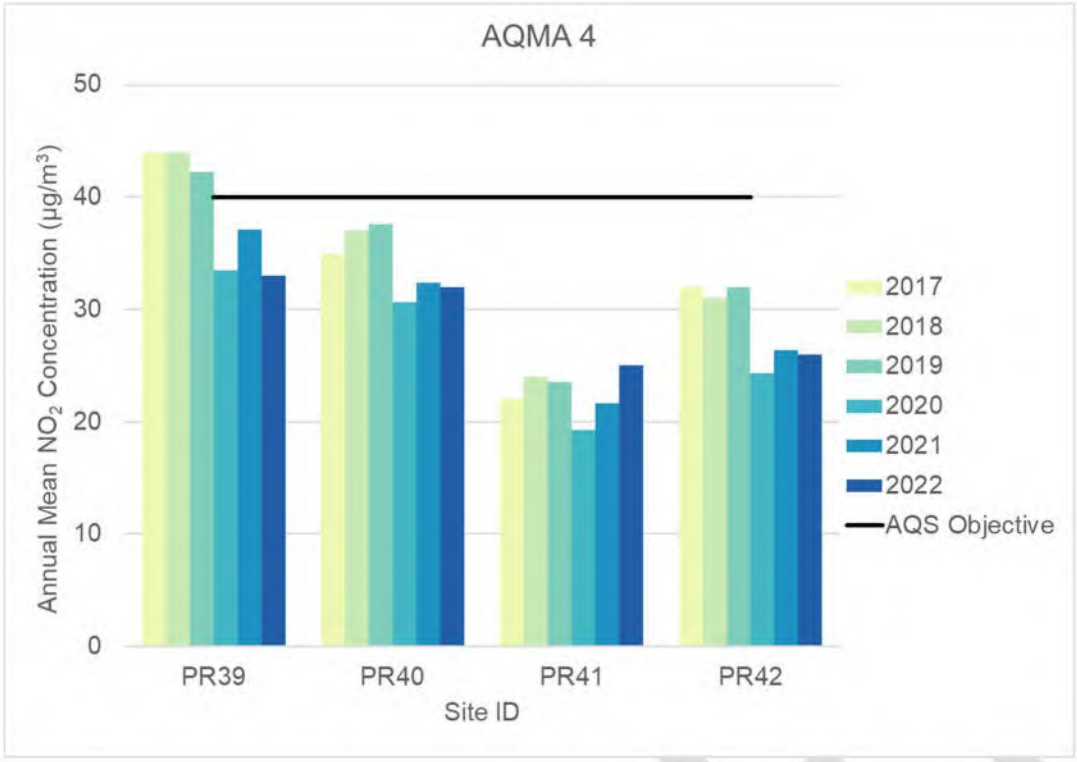

Figure 4: Measured Annual Mean Nitrogen Dioxide Concentrations AQMA 4

3 Preston City Council's Air Quality Priorities

The priority for this revised AQAP is meeting the statutory air quality objectives, but also, where practicable and feasible, to continue to reduce local air pollutant emissions across the city.

3.1 Public Health Context

Air pollution is a major public health risk ranking alongside cancer, heart disease and obesity. A review by the World Health Organisation concluded that long-term exposure to air pollution reduces life expectancy by increasing the incidence of lung, heart and circulatory conditions. The Department of Health and Social Care's advisory Committee on the Medical Effects of Air Pollutants (COMEAP) has estimated that long-term exposure to man-made air pollution in the UK has an annual impact on shortening lifespans, equivalent to 28,000 to 36,000 deaths. Poor air quality can affect health at all stages of life. Those most affected are the young and old. In the womb, maternal exposure to air pollution can result in low birth weight, premature birth, stillbirth or organ damage. In children, there is evidence of reduced lung capacity, while impacts in adulthood can include diabetes, heart disease and stroke. In old age, a lifetime of exposure to air pollution can result in reduced life-expectancy and reduced wellbeing at end of life. There is also emerging evidence for a link between air pollution and an acceleration of the decline in cognitive function.

Poor air quality disproportionately affects the poorest and most vulnerable in our communities including children. Public health not only aims to improve health, but also reduce health inequalities by using an evidence-based approach to make recommendations on the delivery of health and wellbeing services. As such, this AQAP will support work underway within the public health arena.

As detailed in Policy Guidance LAQM.PG22 (Chapter 8), 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.

In Lancashire the strongest evidence we have on the population health impacts of air pollution comes from Public Health England's Public Health Outcomes Framework. This Framework estimates the 'fraction of annual all cause adult mortality attributable to particulate air pollution (measured as fine particulate matter, $PM_{2.5}$)'. It shows that, while

the overall mortality rate from particulate air pollution in Lancashire in 2022 (5.1%) is lower than the England average (5.8%), air pollution remains a significant public health issue for the county.

3.2 Planning and Policy Context

3.2.1 Central Lancashire Core Strategy

The existing Central Lancashire Core Strategy was adopted in July 2012 and includes Policy 30 on Air Quality, which aims to:

> *"Improve air quality through delivery of Green Infrastructure initiatives and through taking account of air quality when prioritising measures to reduce road traffic congestion."*

The existing strategy is currently in the process of being updated and it is anticipated that there will be a policy section relating to air quality in the next Core Strategy.

3.2.2 Lancashire County Council

Working with district councils, Lancashire County Council (LCC) has an important role to play in taking action to reduce the health impacts of air pollution. Responsible for transport planning, network management, highway maintenance, public health and procuring local vehicle fleets, there are a number of ways LCC can support local and county wide efforts to improve air quality.

The LCC Highways and Transport Strategy provides a high level view of how LCC will deliver their highways and transport responsibilities between 2023 and 2025. The public transport and active travel objectives will help to improve air quality by reducing car travel. Cycling in Lancashire is below the national average, but is increasing.

In summary, the following activities are underway or in development:

1. **Encouraging the use of sustainable forms of travel**

Lancashire's cycling and walking strategy, Actively Moving Forward, sets out an ambitious plan for increasing the number of people walking and cycling in the county by 2028. By improving and increasing access to cycling and walking infrastructure, alongside training and promotional activities, it aims to significantly increase the amount of cycling and walking people do across the county. Information on the LCC's ongoing activities in this area can be found on the Active Travel in Lancashire website.

As part of Lancashire's cycling and walking strategy, work has commenced on developing Local Cycling and Walking Infrastructure Plans (LCWIPs) for Lancashire. LCWIP's have been defined for seven areas across Lancashire. These are:

- Lancaster
- Central Lancashire
- West Lancashire
- Fylde Coast
- Ribble Valley
- Burnley and Pendle
- Rossendale and Hyndburn

As part of the LCWIP process extensive public and stakeholder engagement has been undertaken. The Plans will include a network plan for cycling and walking infrastructure and a prioritised list of schemes for delivery over short, medium and long term timeframes. These plans will be used to support future infrastructure decisions and to access new funding schemes as they become available.

The Road Safety Team work with schools, workplaces, and the community to encourage safe and sustainable modes of travel. Initiatives for schools are promoted though the Safer Travel website 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.

Bus services across Lancashire operate in a deregulated market, meaning the County Council does not control the bus network, franchise routes or control fares. In the next three years, the County Council will continue to work more closely with bus operators, alongside local communities, to create a network that people want and will use. The council has published a ten-year Enhanced Partnership Plan and Scheme alongside its Bus Service Improvement Plan which together will deliver measures to restore confidence and grow patronage numbers.

2. Supporting the transition to low emission vehicles

LCC, working with BP Pulse, has installed 150 Electric Vehicle charge points either at the side of the adopted highway or in County Council carparks. These charge points are ultra-chargers which will allow most vehicles to take a full charge in less than an hour and fast chargers that will take around three hours to charge the vehicles. The mix of these units depends on location, power supply, and demand.

Since the installation of these points the focus has been on supporting residents who do not have off-street parking to charge at home, with the County Council trialling an

innovative footway cable tray which will provide a low cost and practical solution to support residents without off street parking to charge at home. The cable-tray enables residents to safely pass an electric cable across the footway from their property to the carriageway enabling charging their vehicle from their domestic supply. Two products (one designed in-house and one adapted product) have been trialled at several residential properties in the county. The County Council is one of 16 councils in England to secure funding from the Local Electric Vehicle Infrastructure (LEVI) extended pilot scheme to expand this trial to more residents and to trial lamp post integrated charge points in residential areas, helping those that do not have access to off-street parking.

In addition to the LEVI extended pilot the County Council has been allocated indicative funding of £10.1m from the LEVI capital fund for the provision of local, low power, public on-street charging infrastructure. This will help us scale up the deployment of local charge points and solutions for residents without access to off-street parking beyond the pilot projects and deliver the vision and aims of the Lancashire and Blackburn with Darwen EV Infrastructure Strategy.

The County Council's parking services fleet is now fully electric, with charging infrastructure installed at the offices and depots where the vehicles are based, and regularly visit. Fleet services are continuing to deliver their programme to upgrade to ultra-low emission vehicles.

3. Creating cleaner, healthier road networks

Work to develop the next Local Transport Plan (LTP4) for Lancashire, Blackpool and Blackburn with Darwen is underway. The Public Health team has submitted an evidence base to inform the process, highlighting transport related health challenges affecting the population of Lancashire and making recommendations about how local transport planning policy can make a contribution to addressing these. The local Highways and Transport Masterplans will be refreshed to align with the priorities of LTP4. This will provide an opportunity to identify longer-term network solutions that address issues in AQMAs and have a positive impact on air quality generally.

4. Embedding air quality into policy

The County Council works with district planners to ensure air quality is a key consideration of Local Plans, alongside wider public health issues. It supports district councils in developing policies that seek to ensure new developments do not contribute to increasing levels of air pollutants and that requirements for appropriate mitigation are in place.

The County Council, as part of its highways input into planning applications, actively encourages measures that aim to promote sustainable forms of travel. Working under the direction of the National Planning Policy Framework, the County Council seeks measures that facilitate cycling and walking, increase the use of public transport and provide access to electric vehicle charge points. The County Council also seeks funding from developers, through section 106 contributions, to support existing bus services or to provide new bus services suitable to serve development sites once they are built.

5. Raising awareness and increasing engagement

The Lancashire Insight website provides information on the sources and health impacts of air pollution across the county. Webpages include a Summary of Emissions Data and Monitoring of Air Quality and Health Impacts.

3.2.1 Preston City Transport Plan

Policy 12 in the Preston City Transport Plan 2019 aims to revoke all AQMAs by 2028 through investment in non-car transport modes to offer greater choice and by reducing the impact of existing vehicle transport. This will be achieved through reducing congestion and promoting walking and cycling. Policy 13 focuses on ensuring new development is granted with appropriate EV charging technology through the provision of standards for new homes and wider development. An assessment of the local power network is required to ensure the capacity of infrastructure is sufficient to cope with an increase in the demand for electrical power.

3.2.2 Preston Local Plan

Preston's existing Local Plan (2012-26) will soon be updated to reflect the policy areas updated in the Central Lancashire Core Strategy.

3.3 Source Apportionment

The AQAP measures presented in this report are intended to be targeted towards the predominant sources of emissions within Preston City Council's area. To determine which areas to target, a source apportionment exercise was undertaken. The methodology used to inform this section is presented in Appendix C.

Figure 5 shows the split between contributions from the regional background, local background, and local road components to NO_2 concentrations at monitoring sites in AQMAs 2 and 4 in 2022. The local road contribution is the largest component (approximately 55%), followed by the local background (approximately 35%), and the regional background (approximately 10%). It is therefore clear that road traffic within the AQMAs is the largest contributor to NO_2 concentrations at these monitoring sites.

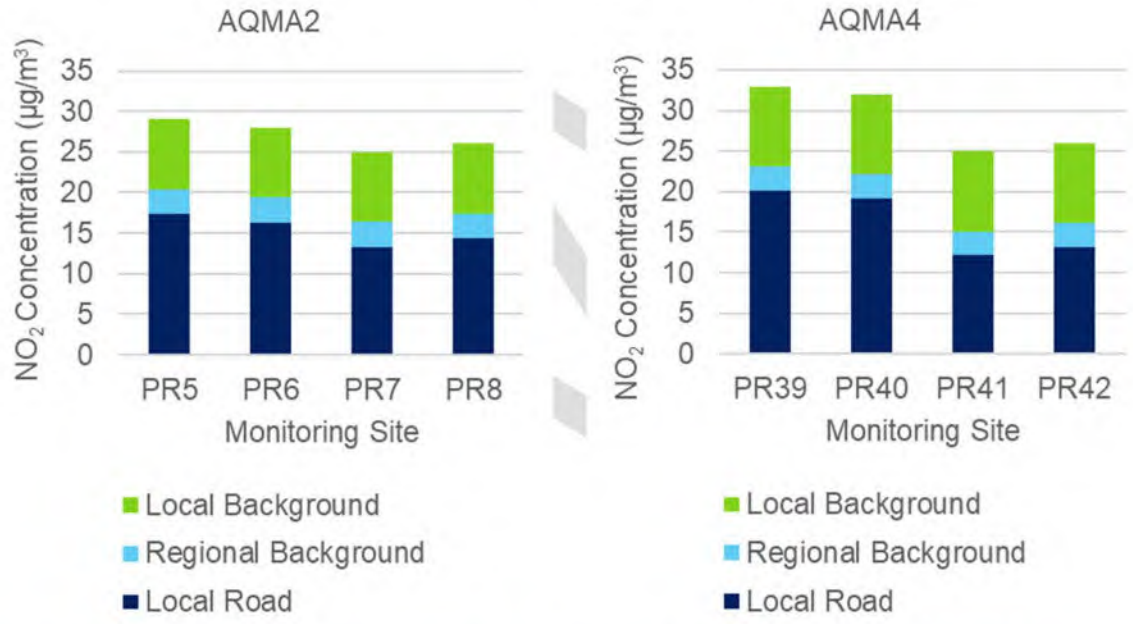

Figure 5 Source Apportionment of Measured Concentrations in 2022 in AQMA 2 and AQMA 4

To further understand the predominant sources of emissions, Figure 6 shows the vehicle types contributing to NOx emissions within each AQMA. In both AQMAs, the majority of NOx emissions are from diesel cars and diesel light goods vehicles (LGVs). Additionally, in AQMA 4 there is a higher proportion of emissions from buses and coaches (19%) than in AQMA 2 (8%).

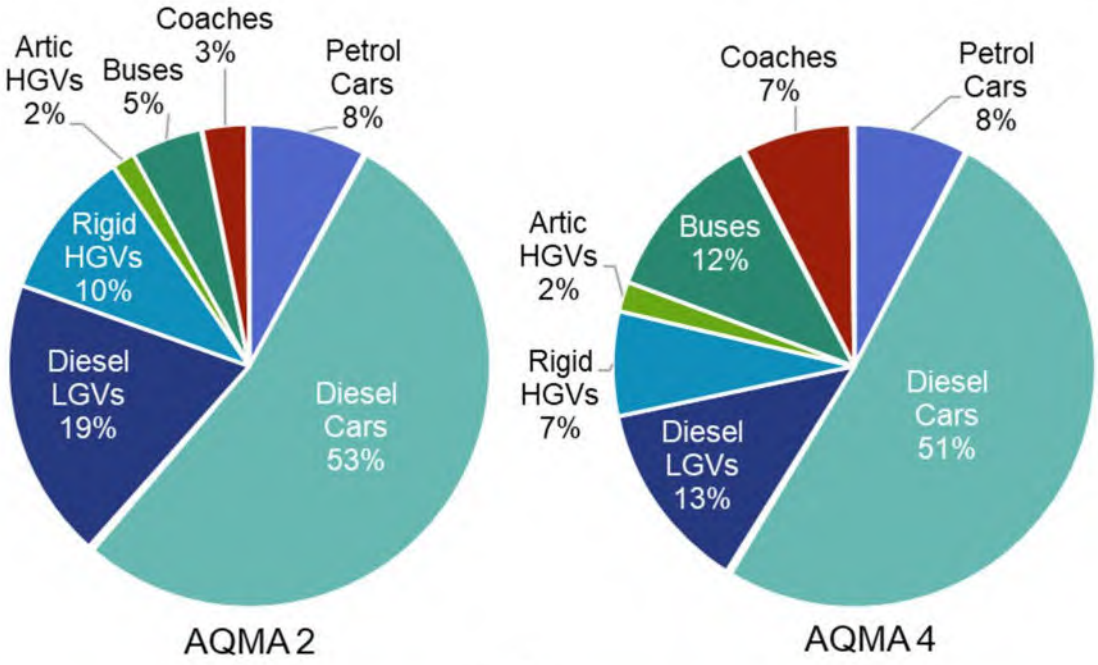

Figure 6 Source Apportionment of NOx Emissions from Road Transport in AQMA 2 and AQMA 4

3.3.1 Required Reduction in Emissions

As the Air Quality Objectives are currently being met in Preston, there is no specific reduction in emissions required. However, although compliance with air quality objectives is important, from a health perspective, a general reduction in emissions of the key pollutants (including PM_{10} and $PM_{2.5}$) may provide better health outcomes than focussing on hotspot locations. For this reason, wider, more strategic measures have been included and Preston City Council will be working towards reducing concentrations below current air quality objectives.

3.4 Key Priorities

Based on the source apportionment outlined above, and the fact that the objectives have been achieved at all sites of relevant exposure since 2019, the following priorities are proportionate, and will ensure that transport related emissions are reduced.

- Priority 1 – encourage modal shift away from private vehicle use and towards active travel / public transport alternatives, with remaining vehicle trips to be via electric vehicles where possible;
- Priority 2 – increase collaboration across PCC and LCC departments on strategic policy development; and
- Priority 3 – continue to reduce concentrations, especially PM_{10} and $PM_{2.5}$, below legal limits by targeting non-road sources in the Preston area.

4 Development and Implementation of Preston City Council AQAP

4.1 Consultation and Stakeholder Engagement

In developing/updating this AQAP, we have worked with other local authorities, agencies, businesses and the local community to improve local air quality. Schedule 11 of the Environment Act 1995 requires local authorities to consult the bodies listed in Table 1.

A period of consultation and engagement will be undertaken following this report being taken to the Cabinet Member for Planning and Regulation. The AQAP will be made available on the consultation pages of the PCC website, with the consultation advertised through various social media channels and directly to consultees. The consultees identified below will be directly contacted.

The response to our consultation stakeholder engagement is given in Appendix A: Response to Consultation.

Table 1 – Consultation Undertaken

Consultee	Consultation Undertaken
The Secretary of State	Yes, will be sent link to draft report
The Environment Agency	Yes, will be sent link to draft report
The highways authority	Yes, will be sent link to draft report
All neighbouring local authorities	Yes, will be sent link to draft report
Other public authorities as appropriate, such as Public Health officials	Yes, will be sent link to draft report
Bodies representing local business interests and other organisations as appropriate	Yes, will be sent link to draft report

4.2 Steering Group

The AQAP was taken forward through an Air Quality Steering Group. Prior to consultation, two Steering Group meetings were held (12th April and 7th June 2024), which involved the collaboration of officers across PCC and LCC in different disciplines. A third meeting of the Steering Group will be held after the consultation period to review any comments received.

The Steering Group was made up of the following members:

- Head of Environmental Health at Preston City Council
- Planning Officers at Preston City Council
- Engineering and Riverway Officer at Preston City Council
- Development Control Officer at Preston City Council
- Climate Change Officer at Preston City Council
- Transport Planner at Lancashire County Council
- Transport Planner (specifically for Electric Vehicle Charging Infrastructure) at Lancashire County Council
- Public Transport Manager at Lancashire County Council
- Public Health Practitioner at Lancashire County Council
- Sustainable Travel Manager (walking and cycling) at Lancashire County Council; and
- Planning and Transport Advisor at Lancashire County Council.

The meetings have involved;

- setting out the background to the air quality issue in Preston;
- the process of the AQAP;
- previous work undertaken on air quality and gaining input and insight into existing and future policy measures within Preston; and
- how these may assist in the implementation of the aims of this Plan (and vice versa).

Discussions have focused on each of the categories of actions and sought updates on current actions and new actions were also discussed. The Steering Group will continue to be fully involved, and consulted on as the process continues.

Separate meetings were held where required, for example if a particular stakeholder could not attend the main meeting, or where additional detail on measures needed to be discussed.

5 AQAP Measures

Table 2 shows the Preston City Council AQAP measures. It contains:

- a list of the actions that form part of the plan
- the responsible individual and departments/organisations who will deliver this action
- estimated cost of implementing each action (overall cost and cost to the local authority)
- expected benefit in terms of pollutant emission and/or concentration reduction
- the timescale for implementation
- how progress will be monitored

NB: Please see future ASRs for regular annual updates on implementation of these measures

Table 2 – Air Quality Action Plan Measures

No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
1	Local Cycling and Walking Infrastructure Plans (Lancashire-wide)	Transport Planning and Infrastructure	Cycle network	2024	2032	LCC and PCC	Network North local transport fund and 'Levelling up' funding.	No	Partially funded	>£10 million	Planning	Increase and improve cycling and walking infrastructure, thus increasing active travel and reducing emissions from road transport.	Implement at least one Cycling & Walking Plan in the Preston area	In the planning process. Obtained Cabinet approval in May 2024. A process will be undertaken to prioritise plans across Lancashire for implementation	Funding & Prioritisation
2	Construction of Cottam Park Way rail station.	Transport Planning and Infrastructure	Public transport improvement - interchanges stations and services	2027	2029	LCC, PCC, Network Rail	Transforming Cities Fund (DfT) & Preston, South Ribble and Lancashire City Deal	No	Funded	>£10 million	Planning	Plans include Park and Ride, bus stop, secure cycle parking, and electric vehicle charging points. Wider infrastructure improvements planned to increase active travel to the station.	Opening of station	In the planning process.	Planning permission and land availability
3	New Public Transport priority corridors along 7 routes into Preston	Transport Planning and Infrastructure	Bus route improvements	2024	2025	LCC and PCC	Bus Service Improvement Plan	No	Funded	>£10 million	Planning	May affect AQMA 4 by providing a dedicated bus lane along New Hall Lane and associated junction improvements.	Bus lane and junction improvements along New Hall Lane completed.	Public consultation has been completed.	Cabinet approval
4	Installation of fast and rapid Electric Vehicle (EV) charging points within the City.	Promoting Low Emission Transport	Procuring alternative refuelling infrastructure to promote Low Emission Vehicles, EV recharging, gas fuel recharging	2024	2030	PCC	Grant opportunities and/or a supplier/operator model	No	Currently not funded	Approximately £2.8M to deliver all PCC owned sites identified in a recent feasibility study	Feasibility study completed and planning stage to be commenced	Decrease in tailpipe emissions by enabling the shift to electric vehicles.	Installation of 20 fast/rapid charging points by 2029	Feasibility study completed	Funding

No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
5	Support LCC's ambition to install low powered, local EV charge points across Preston	Promoting Low Emission Transport	Procuring alternative refuelling infrastructure to promote Low Emission Vehicles, EV recharging, gas fuel recharging	2025	2030	LCC and PCC	Office for Zero Emission Vehicles. Local Electric Vehicle Infrastructure (LEVI) Fund	No	£10.1 LEVI Fund indicative allocation for Lancashire (of which, Preston will receive an allocation)	£1 million - £10 million	Planning	Decrease in tailpipe emissions by enabling the shift to electric vehicles.	Installation of on-street charge points	Funding allocated, subject to application to OZEV/LEVI	Funding timescales and tendering processes mean that installations are likely to begin Autumn 2025. Practical considerations of installing charging infrastructure e.g. local energy supply levels etc
6	Review the taxi licensing policy to encourage the uptake of cleaner vehicles.	Promoting Low Emission Transport	Taxi licensing conditions	2026	Ongoing	PCC	Internal Council budget for staff time	No	N/A	<£10k	Not commenced; to be reviewed at next policy cycle.	Decrease in tailpipe emissions by shifting to cleaner vehicles.	Update to taxi licensing conditions to restrict new licences to cleaner vehicles	Not started	Committee Approval. Lead in period required, initially for new applications. Date for the rest of fleet to be agreed following consultation with the taxi trade.
7	Transforming Cities Funding for smarter travel solutions is being implemented in a Proof of Concept scheme on the London Rd Corridor. Microsimulation traffic models linked to real time traffic information allow intelligent	Traffic Management	Other	2024	2025	LCC	Transforming Cities Fund (DfT)	No	Funded	£100k - £500k	In progress	Improvement in reliability of bus service to encourage modal shift from passenger cars to public transport.	Bus journey times	Scheme is funded and will be implemented throughout 2024. Improvements to journey times and reliability should encourage modal shift.	

No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	traffic management.														
8	Integration of air quality sensors into the London Rd Corridor Microsimulation management system	Traffic Management	Other	2025	2029	LCC	Defra AQ Grant	To be applied for	Not yet established	£100k - £500	Not commenced	Reduction in NOx and particulate emissions from buses and other vehicles by smoothing the flow of traffic.	Improvement in air quality in AQMAs	Not started	Scheme successfully implemented in Oxford. Microsimulation system is currently being installed in the London Road Corridor, and the system can add air quality sensors and use this data to make decisions to optimise traffic management. London Road unlikely to meet current priorities for AQ Grant as objectives being achieved
9	Liaise with LCC on the development of LTP4 and support the inclusion of policies which will improve air quality in Preston	Policy Guidance and Development Control	Regional groups co-ordinating programmes to develop area-wide strategies to reduce emissions and improve air quality	2025	2026	LCC and PCC	Internal Council budget for staff time	No	NA	<£10k	Currently at early stages of LTP4 development.	Broad planning strategy to reduce transport-related pollutant emissions in the long-term.	Inclusion of air quality within LTP4	Public Health team has submitted an evidence base	Lack of guidance from DfT on LTP4
10	Collaborate with planning colleagues within PCC, South Ribble Council, and Chorley Council on the development of the next Central Lancashire	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop area wide strategies to reduce emissions and improve air quality	2024	2026	PCC, South Ribble Council, Chorley Council	Internal Council budget for staff time	No	NA	<£10k	Not commenced	Broad planning strategy to reduce pollutant emissions in the long-term.	Inclusion of air quality within Environmental Policy section of next Core Strategy	Not started	

No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	Core Strategy and support the inclusion of relevant policies to improve air quality.														
11	Review existing planning application validation checklist for air quality. Once Core Strategy has been adopted, consider producing a Supplementary Planning Document (SPD) as a guide for developers to submit planning applications to account for air quality.	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2025	2030	PCC	Internal Council budget for staff time	No	NA	<£10k	Not commenced	Reduced emissions and reduced exposure through developments designed with air quality considered from the outset.	Review of validation checklist completed.	Not started	Consider broader direction to reduce the number of SPDs produced. Timings of the Core Strategy publication.
12	Review current extent of Preston's Smoke Control Area and consider extending to cover whole City region	Policy Guidance and Development Control	Other Policy	2026	2026	PCC	Internal Council budget for staff time	No	N/A	<£10k	Not commenced	PM_{10}/$PM_{2.5}$ emissions reduction.	Review complete	Not started	Staffing Resource
13	Conduct a local survey into solid fuel burning behaviours to help target public information campaigns and emission	Public Information	Other	2027	2027	PCC	TBC	No	Unfunded	£10k - £50k	Not commenced	Information to help target PM_{10}/$PM_{2.5}$ emissions reduction.	Survey completed	Not started	Funding, public engagement.

No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	reduction strategies.														
14	Devise communication plan to improve public awareness of Preston's Smoke Control Area and, more broadly, the Domestic Solid Fuel Regulations.	Public Information	Other	2028	Ongoing	PCC	Internal Council budget for staff time	No	N/A	<£10k	Not commenced	PM_{10}/$PM_{2.5}$ emissions reduction.	Output information regarding the SCA	Not started	Staffing Resource
15	Upgrade the Council's vehicle fleet to at least Euro 6	Promoting Low Emission Transport	Company vehicle procurement – prioritising uptake of low emission vehicles	2024	2026	PCC	Internal Council budget	No	Funded	£1 million - £10 million	In progress (implementation phase)	Reduced tailpipe emissions of NO_2	Number of road fleet vehicles changed to Euro 6	Funding secured and in the process of replacement. 53 Euro 6 vehicles in the fleet	Inflationary pressure, delivery schedules, and manufacturing capacity

6 Cost Effectiveness of AQAP Actions

Defra does not expect authorities to undertake detailed cost-benefit analyses in their AQAPs. Most of the measures set out in Table 2 are difficult to quantify. This is because the traffic impact of measures is difficult to quantify in relation to changes in traffic numbers, or fleet composition, or in some cases the measure might be designed to reduce stop start traffic, or reduce idling, which cannot be easily quantified. Some measures do not have a direct influence on air quality emissions (such as those aimed at reducing exposure), and some are designed to encourage behaviour change to that of lower emissions, which again can be difficult to quantify. A summary of the consideration of the impact of the measures, and whether they can be quantified is set out in Table 3 below, with the criteria used as follows:

Impact: ***Very Low*** – No indirect or direct impacts on air quality; ***Low*** – would reduce emissions, but not measurable by air quality monitoring and would be termed 'negligible' using industry standard guidance for modelling the impacts of developments; ***Medium*** - a change could be detected using an air quality model such as ADMS, but unlikely to be measurable by air quality monitoring, for example an improvement of up to 5% of the annual mean objective for NO_2 (2 µg/m^3); ***High*** – a change could potentially be monitored using standard monitoring techniques, i.e. an improvement of more than 5% of the annual mean objective for NO_2 (2 µg/m^3). It should be noted that the impact is largely based on NO_2.

Table 3 Assumptions Related to Air Quality Impact in AQMAs

No.	Measure	Assumptions for Quantification	Assumed Air Quality Impact in AQMAs
1	Local Cycling and Walking Infrastructure Plans (Lancashire-wide)	Difficult to quantify as it is currently with LCC to prioritise locations where Plans will be implemented. Any modal shift away from private vehicles to active travel alternatives will remove vehicles from the road network and therefore reduce emissions, but it is not possible to know where these changes are likely to happen.	Low
2	Construction of Cottam Park Way rail station	It is anticipated behavioural change away from private vehicle trips and towards using public transport (rail) to access Preston will reduce traffic and emissions more broadly. However, the impact on the AQMAs is likely to be small from this individual measure.	Low
3	New Public Transport priority corridors along 7 routes into Preston	Increased public transport usage should remove private vehicle trips from the road network and	Medium

		reduce congestion at junctions, thereby reducing emissions directly and indirectly. A bus lane and junction improvements are planned along New Hall Lane (AQMA 4), which is anticipated to reduce total traffic flow by encouraging modal shift to public transport, and reduce stop-start emissions by improving junction efficiency.	
4	Installation of fast and rapid Electric Vehicle (EV) charging points within the City	If all diesel cars were replaced with electric cars, this would reduce NOx emissions in AQMA 2 by 53% and AQMA 4 by 51% (see Figure 6). While replacement of all diesel cars with electric alternatives within the timespan of this Plan is not feasible, the provision of EV infrastructure enables the long-term shift to low emission (NOx) vehicles.	Medium
5	Support LCC's ambition to install low powered, local EV charge points across Preston	If all diesel cars were replaced with electric cars, this would reduce NOx emissions in AQMA 2 by 53% and AQMA 4 by 51% (see Figure 6). While replacement of all diesel cars with electric alternatives within the timespan of this Plan is not	Medium

		feasible, the provision of EV infrastructure enables the long-term shift to low emission (NOx) vehicles.	
6	Review the taxi licensing policy to encourage the uptake of cleaner vehicles	The age and condition of the taxi fleet is currently unknown. By incorporating emissions standards into licensing conditions, this will ensure continued improvement in the fleet.	Low
7	Transforming Cities Funding for smarter travel solutions is being implemented in a Proof of Concept scheme on the London Rd Corridor. Microsimulation traffic models linked to real time traffic information allow intelligent traffic management.	Smart travel solutions are anticipated to improve the reliability of the bus service and therefore encourage modal shift from passenger cars to public transport. Additionally, intelligent traffic management is anticipated to help smooth traffic, and therefore reduce congestion and emissions associated with stop/start driving. While this is a relatively localised measure, the London Rd Corridor is adjacent to New Hall Lane (AQMA 4), and there may therefore be wider effects on this AQMA.	Low
8	Integration of air quality sensors into the London Rd Corridor Microsimulation management system	Study based in Oxford claims to have improved concentrations by approximately 20%	Low

		(unpublished data). Reductions are likely to be highly location-specific and therefore difficult to quantify for Preston.	
9	Liaise with LCC on the development of LTP4 and support the inclusion of policies which will improve air quality in Preston	Changes to road transport associated with LTP4 will be broader than just Preston, and certainly broader than just the road traffic associated with AQMAs 2 and 4. While the overarching policy should drive long-term change towards public transport, active travel, and low emission transport, the impact within the AQMAs in the short-term is difficult to quantify.	Low
10	Collaborate with planning colleagues within PCC, South Ribble Council, and Chorley Council on the development of the next Central Lancashire Core Strategy and support the inclusion of relevant policies to improve air quality	As above, changes to road transport associated with the Core Strategy will be broader than just Preston, and certainly broader than just the road traffic associated with AQMAs 2 and 4. While the overarching policy should drive long-term change towards public transport, active travel, and low emission transport, the impact within the AQMAs in the short-term is difficult to quantify.	Low

11	Review existing planning application validation checklist for air quality. Once Core Strategy has been adopted, consider producing a Supplementary Planning Document (SPD) as a guide for developers to submit planning applications to account for air quality	Unable to be quantified as impacts on traffic and other sources of pollutants as domestic emissions unknown at this stage but has the potential to effect relatively large air quality improvements over longer timescales. For example, if significant modal shift to active travel, or an increase in renewable energy is achieved, this will have corresponding benefits in local air pollutant emissions. The amount of pollutant emissions that can be reduced will depend on the size and type of the development and how much of a focus is given to emissions reduction beyond present policy.	Low to Medium
12	Review current extent of Preston's Smoke Control Area and consider extending to cover whole City region	Will not have any impact on NOx, but could potentially reduce $PM_{2.5}$ if accompanied by information campaign and resulting behaviour change (reduction in wood burning/ switch to seasoned wood)	Low to Medium ($PM_{2.5}$)

13	Conduct a local survey into solid fuel burning behaviours to help target public information campaigns and emission reduction strategies	While the survey itself won't reduce emissions, by understanding who, where, and how people are burning solid fuels will help target future policy.	None
14	Devise communication plan to improve public awareness of Preston's Smoke Control Area and, more broadly, the Domestic Solid Fuel Regulations.	Will not have any impact on NOx, but could potentially reduce $PM_{2.5}$ by encouraging better burning practices, and reduce burning frequency by those who use solid fuel as a secondary heating source.	Low to Medium ($PM_{2.5}$)
15	Upgrade the Council's vehicle fleet to at least Euro 6	Will reduced the exhaust emissions of NOx from the Council's own fleet. While this directly reduces emissions, the contribution of the Council's fleet to NOx emissions within the AQMA is likely to be limited.	Low

In order to provide an indication of cost effectiveness, Table 4 has been determined using best professional judgement to clearly set out impact from Table 3 above (i.e., effectiveness) and cost in a qualitative way. Although the impacts for many of the actions is judged to be low individually, as a package, and over a number of years, the impacts of the measures will cumulatively be much larger.

The analysis also accounts for the feasibility of implementing the measures, with those likely to progress given a higher priority than those which are acknowledged to be a challenge to implement. The feasibility score factors in influences such as accessibility to funding, resources being available and political backing.

Criteria to allow for the analysis of cost and feasibility are included below.

Cost: ***Low*** - < £50K; ***Medium*** - £50K-£500K; ***High*** - >£500K

Feasibility: ***Low*** – difficult to implement, lack of political will to implement, time and resource intensive. ***Medium*** – possible to implement, but may require some further feasibility work, and/ or additional support and resources. ***High*** – measure has already been started, good political will and likely to be sufficient resources.

Table 4 Cost Effectiveness of AQAP Measures

No.	Measure	Impact on Air Quality	Cost	Feasibility
1	Local Cycling and Walking Infrastructure Plans (Lancashire-wide)	Low	High	High
2	Construction of Cottam Park Way rail station	Low	High	Medium
3	New Public Transport priority corridors along 7 routes into Preston	Medium	High	High
4	Installation of fast and rapid Electric Vehicle (EV) charging points within the City	Medium	High	Medium
5	Support LCC's ambition to install low powered, local EV charge points across Preston	Medium	High	High
6	Review all taxi vehicle licensing conditions to encourage the uptake of cleaner vehicles	Low	Low	Medium
7	Transforming Cities Funding for smarter travel solutions is being implemented in a Proof of Concept scheme on the London Rd Corridor.	Low	Medium	High

	Microsimulation traffic models linked to real time traffic information allow intelligent traffic management.			
8	Integration of air quality sensors into the London Rd Corridor Microsimulation management system	Low	Medium	Low
9	Liaise with LCC on the development of LTP4 and support the inclusion of policies which will improve air quality in Preston	Low	Low	High
10	Collaborate with planning colleagues within PCC, South Ribble Council, and Chorley Council on the development of the next Central Lancashire Core Strategy and support the inclusion of relevant policies to improve air quality.	Low	Low	High
11	Review existing planning application validation checklist for air quality. Once Core Strategy has been adopted, consider producing a Supplementary Planning Document (SPD) as a guide for developers to submit planning applications to account for air quality.	Low to Medium	Low	Medium
12	Review current extent of Preston's Smoke Control Area and consider extending to cover whole City region	Low to Medium ($PM_{2.5}$)	Low	Medium

13	Conduct a local survey into solid fuel burning behaviours to help target public information campaigns and emission reduction strategies.	None	Low	Low
14	Devise communication plan to improve public awareness of Preston's Smoke Control Area and, more broadly, the Domestic Solid Fuel Regulations.	Low to Medium ($PM_{2.5}$)	Low	Medium
15	Upgrade the Council's vehicle fleet to at least Euro 6	Low	High	High

Appendix A: Response to Consultation

Table A.1 – Summary of Responses to Consultation and Stakeholder Engagement on the AQAP

Consultee	Category	Response
		To be completed following consultation

Appendix B: Reasons for Not Pursuing Action Plan Measures

Table B.1 – Action Plan Measures Not Pursued and the Reasons for that Decision

Action category	Action description	Reason action is not being pursued (including Stakeholder views)
Environmental Permits	Industrial permitting process	Not sufficient sources in Preston to require a specific action in this AQAP
Freight and Delivery Management	Delivery and Service plans / Freight Consolidation Centre / Freight Partnerships for city centre deliveries / Quiet & out of hours delivery / Route Management Plans / Strategic Routing for HGVs.	Freight will be considered as part of LTP4, which will include input on air quality under action 9. The source apportionment undertaken for this plan shows that HGVs only contribute approximately 10% of NOx emissions in the AQMAs, and are therefore not the main focus of the plan.
Promoting Low Emission Plant	Emission control equipment for small and medium sized stationary combustion sources / replacement of combustion sources / Low Emission Fuels for stationary and mobile sources in Public Procurement / Other measure for low emission fuels for stationary and mobile	Not sufficient sources in Preston to require a specific action in this AQAP. Large developments are already required to submit a Construction Environmental Management Plan, which should outline low-emission non-road mobile machinery to be used.

	sources / Public Procurement of stationary combustion sources / Regulations for fuel quality for low emission fuels for stationary and mobile sources / Shift to installations using low emission fuels for stationary and mobile sources	
Vehicle Fleet Efficiency	Driver training and ECO driving aids / Fleet efficiency and recognition schemes / Promoting Low Emission Public Transport / Testing Vehicle Emissions / Vehicle Retrofitting programmes	The Council's own vehicle fleet has already been upgraded to Euro 6 (action 15). Limited funding available to upgrade further to electric vehicles. The taxi fleet in Preston will also be reviewed as part of action 6.

Appendix C: Source Apportionment Methodology

The methodology used to determine the source apportionment of NO_2 concentrations in Preston's AQMAs (see section 3.3) used the methodology as set out in LAQM Technical Guidance (TG22), Box 7-5.

Step 1

Determine the total background NO_2 (TB-NO_2), total background NOx (TB-NOx), and regional background NOx (RB-NOx) from the national maps of background annual mean concentrations. Derive the local background NOx (LB-NOx) by subtracting RB-NOx from TB-NOx. The outputs from Step 1 are summarised in Table 5.

Table 5 Source Apportionment – Step 1

AQMA	Monitoring Site	TB-NO_2 ($\mu g/m^3$)	TB-NOx ($\mu g/m^3$)	RB-NOx ($\mu g/m^3$)	LB-NOx ($\mu g/m^3$)
2	PR5	11.65	15.46	4.03	11.43
	PR6				
	PR7				
	PR8				
4	PR39	12.84 [a]	17.24 [a]	3.98 [a]	13.26
	PR40				
	PR41				
	PR42				

[a] Monitoring sites fell across two grid squares, so the average has been calculated.

Step 2

Apportion the total background NO_2 into regional and local components using the regional and local NOx proportions. The outputs from Step 2 are summarised in Table 6.

Table 6 Source Apportionment – Step 2

AQMA	Monitoring Site	TB-NO_2 (µg/m^3)	RB-NOx / TB-NOx	LB-NOx / TB-NOx	RB-NO_2 (µg/m^3)	LB-NO_2 (µg/m^3)
2	PR5	11.65	0.26	0.74	3.04	8.61
	PR6					
	PR7					
	PR8					
4	PR39	12.84	0.23	0.77	2.96	9.87
	PR40					
	PR41					
	PR42					

Step 3

Calculate the local NO_2 contribution (L-NO_2) from the total measured (T-NO_2) minus the background (TB-NO_2). The outputs from this are summarised and presented in Figure 5.

Table 7 Source Apportionment – Step 3

AQMA	Monitoring Site	T-NO_2 (µg/m^3)	TB-NO_2 (µg/m^3)	L-NO_2 (µg/m^3)
2	PR5	29	11.65	17.35
	PR6	28	11.65	16.35
	PR7	25	11.65	13.35
	PR8	26	11.65	14.35
4	PR39	33	12.84	20.17
	PR40	32	12.84	19.17
	PR41	25	12.84	12.17
	PR42	26	12.84	13.17

Step 4

Apportion the local contributions (L-NO_2) to total NO_2 using emission results for NOx.

Traffic data for relevant road links within, or within close proximity to, the AQMAs were provided by the Planning and Environment department at LCC. Classified turning counts were recorded in 2022 (Plungington Road/A5085 Blackpool Road – AQMA 2) and 2023 (A6 Stanley Street/A59 New Hall Lane/A6 London Road – AQMA 4). The vehicle fleet proportions are presented in Table 8.

Table 8 Fleet breakdown in AQMAs used for source apportionment

Vehicle Type	AQMA2 (%) [a]	AQMA4 (%)
Car	84.7	86.2
LGV	11.5	8.2
Rigid HGV	1.9	1.5
Artic HGV	0.5	0.7
Bus and Coach	1.0	2.7
Motorcycle	0.3	0.7

[a] Presented to 1 decimal place; rounding to this level of precision may not total 100% as presented in this table.

The fleet breakdown was entered into the Emission Factor Toolkit (v12.0) and used to calculate the percentage NO_X contribution from each source. The outputs from this are summarised in Figure 6.

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
LAQM	Local Air Quality Management
LCC	Lancashire County Council
PCC	Preston City Council
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