Air Quality Strategy

September 2024

South Ribble Borough Council

CLIMATE EMERGENCY

Document Control

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Review of Strategy

Review Date	2029
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Executive Summary

This Air Quality Strategy and the associated 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 South Ribble between 2024 and 2029.

This action plan replaces the previous action plan which ran from 2018 to 2023

Projects delivered through the past action plan include:

- The Council launched an online public portal for residents to view real-time air quality data from our three EarthSense Zephyr air quality sensors via South Ribble's public air quality portal and continues to promote "Ready to Burn" and smoke control campaigns.
- South Ribble Borough Council's Active Health Team continue to deliver Bikeability training in schools and bespoke training for adults, alongside their popular Dr Bike campaign to repair and repurpose bicycles free of charge to encourage active travel amongst residents.
- The Council's Tree for Every Resident tree planting project has been extended beyond its initial four-year lifespan. Trees were planted or gifted to residents, schools and businesses achieving a cumulative planting total of 173,197 trees planted in 5 years since the Borough since the project started in winter 2019.
- The Defra funded Clean Air Crew schools project was officially launched in September 2023, to include free online resources for schools and home sign up, free school trip and anti-idling campaign resources.
- South Ribble's Business Energy Efficiency scheme works with businesses on energy and carbon footprint reduction options via energy audits BEE Scheme - Business in South Ribble

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]. South Ribble Borough Council is committed to reducing the exposure of people in South Ribble to poor air quality in order to improve health.

We have developed actions that can be considered under 6 broad topics:

- Management
- Industrial Activities
- Transport

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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

- Environmental Pressures and Mitigation Measures
- Sustainable Development
- Education and Engagement

Our priorities are

- Continue to deliver the Defra funded Clean Air Crew project up to the end of March 2025.
- Continue with diffusion tube and Zephyr monitoring.
- Working in partnership with Lancashire County Council in their delivery of the Local Electric Vehicle Infrastructure grant funded scheme (£10.1 million) to provide further EV charge points across the County, including South Ribble
- Continue to carry out the inspections and enforcement of permitted premises within the borough under the Environmental Permitting Regulations
- To continue to work with the Central Lancashire planning team to embed the guidance within the emerging Central Lancashire Local Plan due in 2025.
- Continue to work with partners in Public Health Lancashire, and across the Lancashire District authorities to improve air quality.
- Continue with the Dr Bike and Bikeability projects

In this AQ Strategy and associated 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 South Ribble Borough Council's direct influence.

Responsibilities and Commitment

This AQAP was prepared by the Climate Team of South Ribble Borough Council with the support and agreement of the following officers and departments:

Environmental Health

Active Health

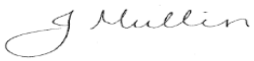
Investment and Skills

This AQAP has been approved by:

Chris Sinnott, Chief Executive, South Ribble Borough Council

Signature: 

Jennifer Mullin, Director of Communities, South Ribble Borough Council

Signature: 

Adopted at Council in September 2024.

This AQAP has not been signed off by a Director of Public Health, but the LCC team have actively contributed at the consultation stage.

This AQAP will be subject to an annual review, appraisal of progress and <reporting to the Climate Emergency Task Group. Progress each year will be reported in the Annual Status Reports (ASRs) produced by South Ribble Borough Council, as part of our statutory Local Air Quality Management duties.

If you have any comments on this AQAP, please send them to the Climate Team at:

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Contents

Introduction

This report outlines the actions that South Ribble Borough Council will deliver between 2024 and 2029 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 the borough of South Ribble

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 South Ribble Borough Council's air quality ASR.

This Air Quality Strategy has been written to support the revised Air Quality Action Plan.

South Ribble first published an Air Quality Action Plan in 2016 and revised it in 2018. It identified a number of actions that the Council and its partners would undertake to improve and maintain air quality across the borough. Many of these have been completed with others either in process or not yet started.

The strategy has been written to complement the Council's existing Climate Emergency and Biodiversity Strategies.

What is Air Quality?

Air quality is the term that is used to describe how clean the air is.

Our air is made up of gases - 78% nitrogen, 21% oxygen and 1% of other gases like argon, carbon dioxide, carbon monoxide, hydrogen, methane, helium, ozone, nitrous oxide and neon.

Air also holds water vapour (as part of the Water Cycle) and lots of tiny particles like dust, sea salt and pollen.

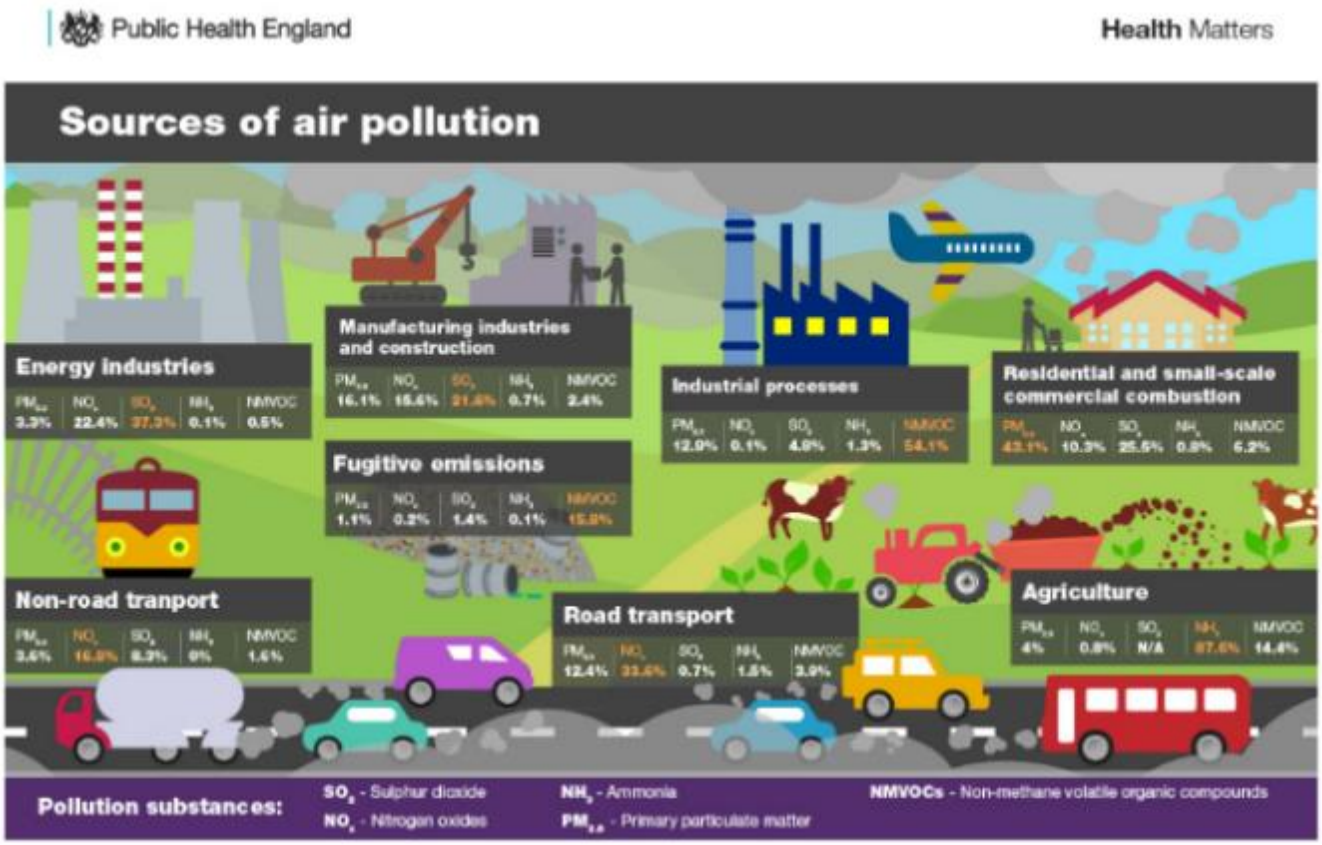
It is important because all humans, animals and plants need to breathe. Humans and animals breathe in air and use the oxygen within it and breathe out carbon dioxide. Plants use carbon dioxide and sunlight to make food and grow, as part of this process they give off oxygen (this part of the Oxygen Cycle is called photosynthesis).

Our air gets dirty (polluted) when it starts to hold on to more tiny particles and the balance of the natural gases that make air change.

This started happening when man discovered fire but got worse at the beginning of the industrial revolution in the 18th century when humans started to develop industries and continues to this day. The invention of the car, burning fossil fuels and farming all contribute to increased levels of particles and gases. The increase in particles can also be from natural sources like pollen and dust formed as a result of droughts or windy days in the desert, ash from volcanic eruptions and wildfires.

Air pollution is also caused by the changing amounts of gases in the atmosphere. Many of these occur because of chemical reactions with other gases, sunlight or water vapour. One of these gases is called ozone, which is formed when sunlight reacts with chemicals that come from burning fossil fuels or vehicle exhaust fumes. When particles in the air combine with ozone, they create smog. Smog looks a bit like fog and makes it difficult to see.

Figure 1 - Key Air Pollutants



Source - [Health matters: air pollution - GOV.UK (www.gov.uk)]

Strategy Objectives

The Council has recently adopted a Climate Emergency Strategy and Action Plan, along with a Biodiversity Strategy and Action Plan. The three areas of air quality, climate emergency and biodiversity are interlinked and many of the actions are repeated across the three action plans. This strategy is designed to sit with and complement these existing strategies and action plans.

In addition, the Local Air Quality Management (LAQM) Technical Guidance requires that from 2023 Local Authorities without declared Air Quality Management Areas (AQMAs) must produce a local Air Quality Strategy to ensure air quality remains a high-profile issue and to ensure it is able to respond quickly should there be any deterioration in condition. It is recommended that other authorities have a strategy for the same reasons.

This is in addition to the Annual Status Report which must be completed each year and submitted to DEFRA.

Strategy Vision - to work collaboratively with our partners to improve and maintain air quality across the borough in order to protect public health and the environment, ensuring that all residents are able to live a healthy and engaged life.

The main objectives of this strategy are -

- To improve air quality across the borough of South Ribble,

- To promote awareness of air quality, the impacts and actions individuals, companies and organisations can take to reduce their impact on the environment,
- To fulfil the legal responsibilities of South Ribble Borough Council, Lancashire County Council and other partners,
- To continue to integrate low emission behaviours into our organisation and act as a community leader with regard to air quality, leading by example in minimising our own emissions.

Legislation Relevant to Air Quality

National Air Quality Regulations

Air Quality Standards Regulations 2010 sets limits for pollutants including nitrogen oxides and particulate matter.

National Emission Ceilings Regulations 2018 sets emission reduction commitments to reduce the amounts of pollutants (fine particulate matter, nitrogen oxides, sulphur dioxide, ammonia and non-methane volatile organic compounds) released against a 2005 baseline.

Environment Act 1995 part IV and relevant legislation to meet the requirements of the LAQM statutory process

Environment Act 2021 introduced two long term legally binding targets to reduce fine particulate matter ($PM_{2.5}$).

Air Quality Strategy: Framework for Local Authority Delivery

This document is the Governments strategic framework for local authorities and other partners. It identifies the role that local government has in delivering clean air for communities and nature and the role Councils and other partners play in achieving national targets. All local authorities must have regard to this strategy when exercising their functions that could affect air quality. It identifies a list of local actions to be taken at a local level.

Local Air Quality Management Framework

The Local Air Quality Management Framework underpinned by the Environment Act 1995 sets local limits put into place through the Air Quality (England) Regulations 2000 (as amended in 2002). The framework requires relevant local authorities to assess the quality of their air and, if it does not comply with relevant concentration limits, put in place a plan to remedy the problem.

Under the LAQM framework South Ribble Borough Council have been monitoring air quality across the borough for over 20-years. These results have helped to inform the annual reports which are required under the LAQM framework.

It is under this framework that our Air Quality Management Areas have been declared and the Action Plans produced. In line with the Local Air Quality Management (LAQM) process, action plans should be revised every five years.

Integrated Pollution Prevention and Control / Local Authority Pollution Prevent Control

Integrated Pollution Prevention and Control / Local Authority Pollution Prevent Control is a regulated approach to control the environmental impacts and emissions from certain industrial activities.

Under the Pollution Prevention and Control Act 1999 and Environmental Permitting (England and Wales) Regulations 2016 certain proscribed processes with a potential to emit pollutants into the atmosphere must be regulated. In England and Wales this are identified as Part A, Part A2 and Part B processes. Part A processes include large industrial sites like chemical manufacture and intensive farming and are regulated by the Environment Agency. Part A2 and Part B processes are regulated by Local Authorities, including South Ribble, and range from petrol stations and dry cleaners to foundries and sectors using solvents.

Industrial processes falling under the IPPC/LAPPC remit must apply for a permit to operate. These would be granted with conditions to control emissions, principally emissions to air and are inspected to ensure these are complied with and environmental impacts are minimised.

Smoke Control Legislation

The Borough of South Ribble has been declared as Smoke Control Area, under the Clean Air Act 1993. This means it is an offence to emit smoke from the chimney of a building that is situated within a designated smoke control area. It is also an offence to deliver an "unauthorised fuel" for use within a designated smoke control area, unless this fuel is to be used on an appliance that has been "exempted" from the controls that generally apply to smoke control areas.

Details of both the authorised fuels and exempt wood burning stoves can be found on the Defra Website

Residents can burn one of the "authorised" solid smokeless fuels on an open fire or stove and these fuels can be readily ignited in a traditional manner, by using a combination of kindling paper and firelighters. Wood is not classed an "authorised" fuel and must only be burnt on an "exempt " appliance that has been tested and found to be compliant with the provisions of the Clean Air Act 1993.

It is also an offense to knowingly sell solid fuel which will be used in a building or fireplace for which a Smoke Control Order applies.

The Local Authority has powers to investigate and enforce the above offences.

Environmental Protection Act 1990

The Environmental Protection Act 1990 provides powers to Local Authorities to deal with Statutory Nuisance arising from smoke, fumes, gases, dust or steam or odours emitted from premises. The legislation allows a Local Authority to serve an abatement notice should an emission result in a statutory nuisance / be prejudicial to health. The notice will require the abatement of the nuisance, failure can result in a fine and prosecution.

In South Ribble this legislation is enforced by the Environmental Health Team.

Planning

The planning process helps to control development to ensure it is appropriate to the locality. Through the planning process the impact on air quality is a material consideration and South Ribble has produced guidance documents on how developers should consider and assess air quality impact from and on developments. This approach is graduated depending on the location and nature of the development and looks at both the overall increase in emissions and a concentration assessment against the national objective values.

Through the planning process Electric Vehicle charging points are required on relevant applications, helping with the transition towards a growing use of electric vehicles. To assist with this, the Council has published guidance for developers on the provision of electric vehicle charging points as part of developments across the Borough.

In addition, the Council has published a Planning Advisory Note for low emissions and air quality to enable a consistent and systematic approach to air quality assessments as part of the planning process.

Air Quality Standards & Objectives

The UK and European governments have identified nine substances that affect air quality and have devised objective values for each. These are replicated within Appendix A. Those of greatest concern within South Ribble are Nitrogen Dioxide and Particulate Matter.

Nitrogen Oxides (NOx) -These are a group of gases mainly created by burning fossil fuels. They can react with other gases in our air and create new gases such as nitrogen dioxide (NO_2) and Ozone (O_3). Nitrogen oxides come from -

- road transport (35%)
- other transport - such as rail and shipping (17%)
- energy generation (22%)
- industrial combustion (19%)

The objective values for Nitrogen Dioxide (NO_2) are –

- NO_2 1 hour mean value of 200 µg/m^3
- NO_2 annual average of 40 µg/m^3

Particulate Matter (PM) - tiny particles in the air that you can't see.

- smoke from wood and coal fires at home (38%)
- non-domestic burning (16%)
- dust from brakes and tyres (12%)
- manufacturing industries (13%)

Particulate matter is measured by size in micrometres (µm) which is one-millionth of a metre, or one-thousandth of a millimetre. The sizes that are measured and reported on are 10µm, and 2.5µm also known as PM_{10} or $PM_{2.5}$. For a sense of scale, a grain of sand measures about 90µm and a grain of salt is about 40µm, so measurements are taken on particles 4 times smaller than a grain of salt.

Concentrations of particulate matter are measured in a cubic meter of air volume (m^3)

Global advisory levels for PM levels are set by the World Health Organisation. The UK Government says that concentrations must not exceed,

- PM_{10} an annual average value of 40 µg/m^3
- PM_{10} a running 24-hour average of 50 µg/m^3 more than 35 times in a single year

- $PM_{2.5}$ an annual average of 25 µg/m^3

The running 24-hour average is there to ensure that we are not exposed to high concentrations of pollutants for short periods of time and the annual average protects us from exposure over a long time period.

Health Effects

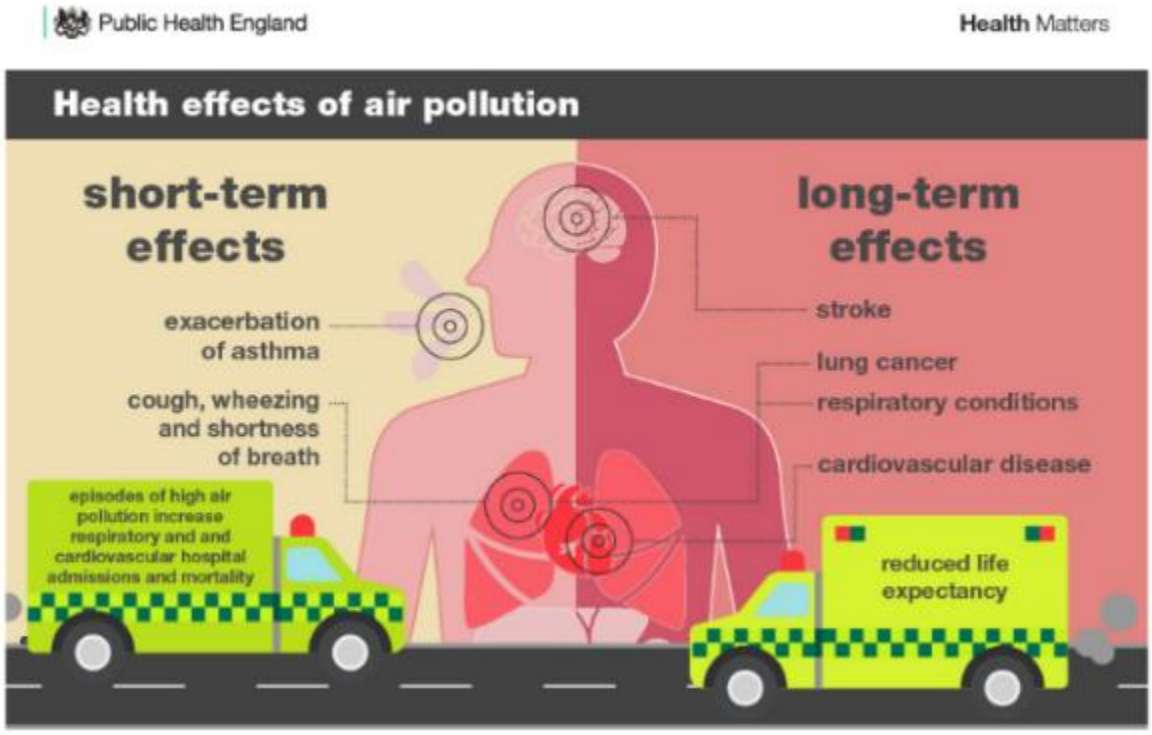
In the UK, air pollution is the largest environmental risk to public health.

Poor air quality is one of the greatest risks to public health facing the UK today, on a par with cancer, heart-disease and obesity, affecting everyone from birth to death. Children, the elderly and those who are classed as 'vulnerable' with existing medical conditions aggravated by air pollution are most at risk of the impacts from air pollution.

Annually UK mortality rates attributed to man-made air pollution is between 28,000 to 36,000 deaths every year (Defra 2024). This is estimated to cost the NHS and support services around £1.6 billion (Defra 2024).

Poor air quality is known to cause and contribute to health conditions which reduce life expectancy, whilst short term it can cause a range of health impacts. There is clear evidence that air pollution contributes on the initiation and development of cardiovascular and respiratory diseases and can cause lung cancer. Evidence is emerging of links with a wider range of health effects including diabetes, dementia, birth outcomes, poor organ development, cognitive development and performance. Short-term impacts can range from mild symptoms such as irritation of the airways, sore throats, and headaches, to severe impacts such as asthma and heart attacks.

Figure 2 Health Effects of Air Pollution



Source [Health matters: air pollution - GOV.UK (www.gov.uk)]

In order to better inform the public about short-term levels of outdoor air pollution and their potential health effects, the Daily Air Quality Index (DAQI) was developed following advice from the Committee on Medical Effects of Air Pollutants (COMEAP). This index numbered 1 - 10, standardises the measured values of different pollutants by categorising them into 4 bands (Low, Moderate, High, and Very High).

These bands are linked to the perceived impacts to health of each pollutant. As such, the DAQI provides information about the health risk of different levels of pollutants in a simple and comparable format and is like the sun index or pollen index used in weather forecasts. Measured values of the different pollutants should not be directly compared as their effects on health and the environment are very different.

The DAQI can be found at https://uk-air.defra.gov.uk/forecasting/?day=1#forecast_map

Table 1 - Defra Recommended Actions and Health Advice

Air Pollution Banding	Value	Accompanying health messages for at-risk individuals*	Accompanying health messages for the general population
Low	1-3	**Enjoy** your usual outdoor activities.	**Enjoy** your usual outdoor activities.
Moderate	4-6	Adults and children with lung problems, and adults with heart problems, **who experience symptoms**, should **consider reducing** strenuous physical activity, particularly outdoors.	**Enjoy** your usual outdoor activities.
High	7-9	Adults and children with lung problems, and adults with heart problems, should **reduce** strenuous physical exertion, particularly outdoors, and particularly if they experience symptoms. People with asthma may find they need to use their reliever inhaler more often. Older people should also **reduce** physical exertion.	Anyone experiencing discomfort such as sore eyes, cough or sore throat should **consider reducing** activity, particularly outdoors.
Very High	10	Adults and children with lung problems, adults with heart problems, and older people, should **avoid** strenuous physical activity. People with asthma may find they need to use their reliever inhaler more often.	**Reduce** physical exertion, particularly outdoors, especially if you experience symptoms such as cough or sore throat.

*Adults and children with heart or lung problems are at greater risk of symptoms. Follow your doctor's usual advice about exercising and managing your condition. It is possible that very sensitive individuals may experience health effects even on Low air pollution days. Anyone experiencing symptoms should follow the guidance provided below.

https://uk-air.defra.gov.uk/forecasting/?day=1#forecast_map

Environmental Impacts of Air Pollution

Air pollution also has a direct impact on our natural environment, contributing to climate change, reducing our crop yields and polluting our oceans. We are dependent on the health of the planet on which we live – from the air we breathe, the water we drink, the food we eat and the energy that powers our homes and businesses. Protecting our natural environment protects our way of life – this is particularly true of air quality.

Air pollution, particularly ammonia and $NO_{x,}$ is a contributor to the decline of biodiversity in the UK. This results in population declines in species with delicate respiratory systems, alters nutrient availability in soils and acid rain.

Local authorities must exercise their functions in a way which conserves and enhances biodiversity under section 40 of the Natural Environment and Rural Communities Act 2006 and the Environment Act 2021. More details on the work that South Ribble Borough Council are doing around biodiversity can be found on our website - Biodiversity - South Ribble Borough Council and includes our Biodiversity Strategy and Action Plan.

Air quality and net zero

In 2019, the UK became the first major economy in the world to legislate to end our domestic contribution to man-made climate change. Many sources of greenhouse gases, like transport and heat generation, also contribute to poor air quality. However, some measures to reduce greenhouse gas emissions are in tension with improving air quality, and these interactions must be carefully considered.

The government published their *2030 Strategic Framework for International Climate and Nature Action,* setting out how they will meet the linked global challenges of climate change and biodiversity loss.

Economic impacts from poor air quality

By making people less healthy, poor air quality harms productivity and increases costs to society through medical and social care.

Improving poor air quality has direct, proven economic benefits, in many cases even when the up-front cost over intervention is high. It is estimated that reducing $PM_{2.5}$ concentrations by 1 µg/m3 increases Gross Domestic Product (GDP) by 0.8% on average in Europe.

Indoor Air Quality

Indoor air quality refers to the air quality within our homes, workplaces and schools. Poor indoor air quality as with poor outdoor air quality is known to adversely affect the health, comfort and well-being of building occupants.

Indoor air pollutants are often much higher than the equivalent external pollutants with pollutants being concentrated into small rooms with little air flow increasing personal exposure and ultimately contributing to our overall national emissions as most of these indoor emissions end up in the atmosphere.

The principal forms of indoor air pollution are particulate matter (PM) and Non-Methane Volatile Organic Compounds (NMVOCs). PM is produced by many forms of cooking and home heating, most notably from combustion in open fires and stoves. NMVOCs are emitted by a wide variety of chemicals that are found in carpets, upholstery, paint, cleaning products,

fragrance, and personal care products. Sulphur dioxide (SO2) is emitted by coal burned in open fires. Not to mention pollen, dust and other substances which result in allergic reactions.

There are simple, practical steps that we can all take to reduce our exposure such as ensuring homes are adequately ventilated and making informed choices about the products we use.

These indoor emissions can have a significant impact for some people and add to everyone’s incremental exposure over the course of their life. Studies have found that as much as 90% of the day is spent indoors where the levels of some air pollutants are often far higher than outside.

Air Quality in South Ribble

Local Air Quality Monitoring

In South Ribble air quality is measured using Zephyr Air Quality Monitors for particulate matter and nitrogen oxides and Diffusion Tubes for nitrogen oxides using.

The three real-time air quality monitoring stations (Zephyrs) are located within the AQMAs at Turpin Green Lane and Golden Hill Lane, Leyland and Watkin Lane, Lostock Hall.

Results from these monitoring stations may be viewed at the South Ribble Public Air Quality Portal

In addition, the Council also measures nitrogen dioxide using diffusion tubes at approximately 30 locations around the Borough, focusing on the AQMAs of Leyland, Lostock Hall, Penwortham, Bamber Bridge and Walton-le-Dale.

Air Quality Management Areas (AQMA)

Air quality within the borough of South Ribble is generally good, but it could be better, and we have a number of areas identified as areas of poorer air quality. These have been declared as Air Quality Management Areas.

In 2005 South Ribble declared four Air Quality Management Areas (AQMA) covering parts of Penwortham, Lostock Hall, Bamber Bridge and Walton-le-Dale. In 2017 a fifth area was declared covering parts of Leyland.

The areas are -

- AQMA1: The Junction of Liverpool Road, Priory Road and Cop Lane Penwortham (Revocation commenced in 2023)
- AQMA2: Victoria Road, Walton-le-Dale
- AQMA3: The Junction of Leyland Lane, Watkin Lane and Brownedge Road Lostock Hall
- AQMA4: Station Road, Bamber Bridge
- AQMA5: Turpin Green Lane, Churchill Way and Golden Hill Lane Leyland

All our AQMA coincide with areas of high traffic flow that is restricted by traffic lights and / or roundabouts. All five areas were declared due to the likely exceedance of the annual mean Nitrogen Dioxide objective value of 40µg/m^3.

Following the building of the Penwortham bypass and improvements to the traffic flow in the area, monitoring results have been continual low and as a result revocation of the Penwortham AQMA was commenced in 2023.

Annual NO_2 monitoring shows that all AQMAs are below national targets with no annual mean exceedances. In due course, after analysis of the impacts of the emerging Local Plan (due in 2025), all the AQMAs will be revoked as long as the expected trend data continues.

The following graph shows annual mean NO_2 levels for each of the AQMA areas/

Plans of all the AQMAs are provided in Appendix B

Figure 4 - Annual Mean NO_2

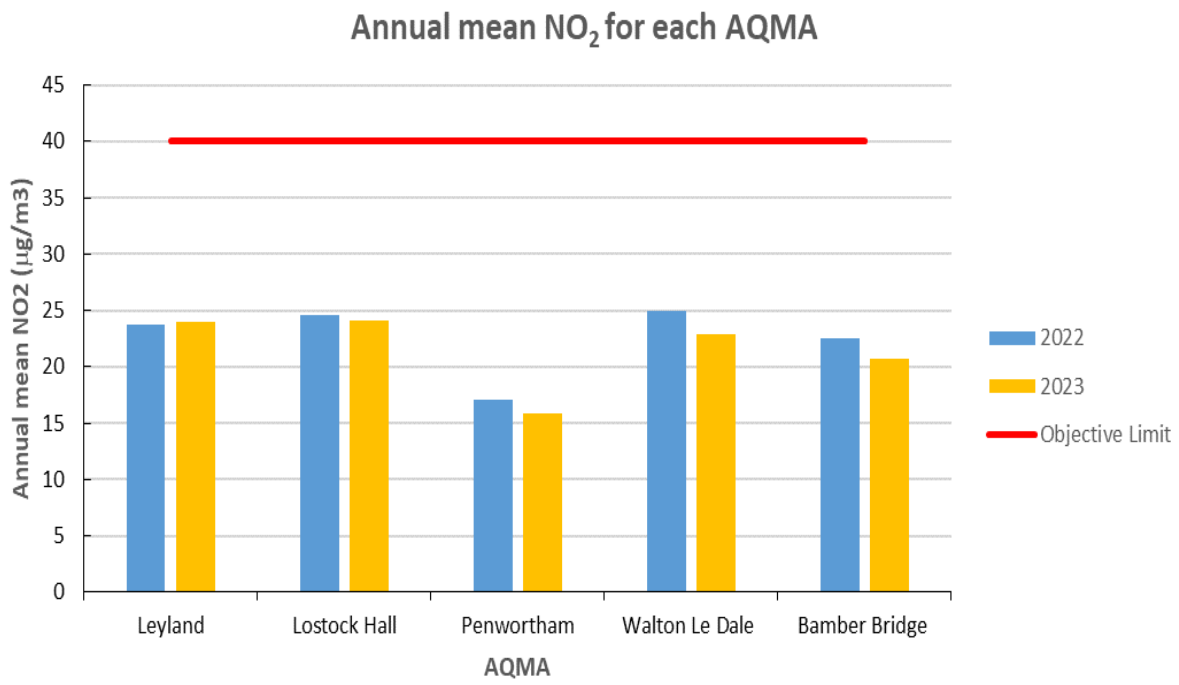
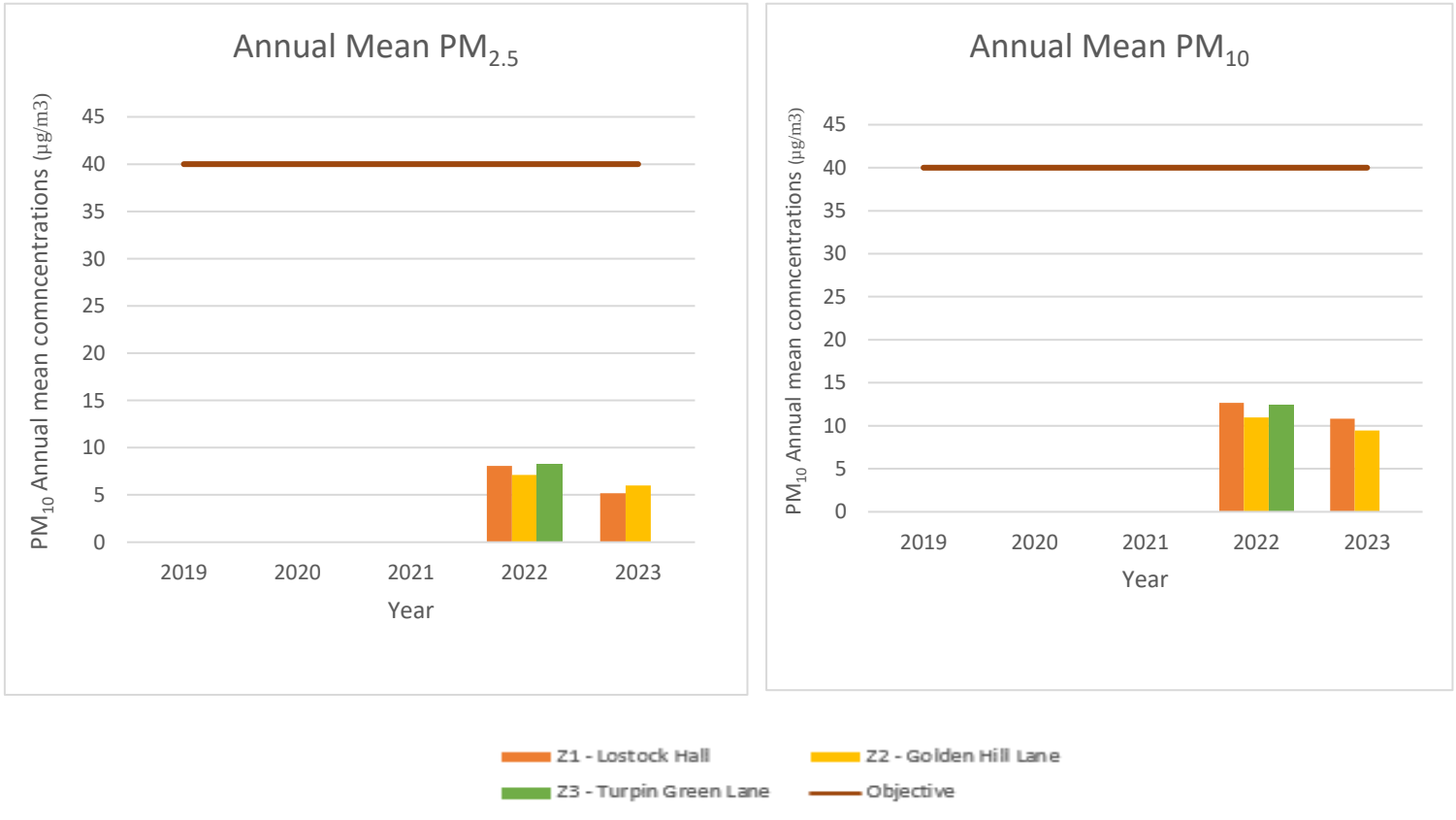


Figure 4 - Annual Mean PM



Source Apportionment

The AQAP measures presented in this report are intended to be targeted towards the predominant sources of emissions within South Ribble Borough Council's area.

A source apportionment exercise was carried out by South Ribble Borough Council in 2024. This identified that within the borough of South Ribble, the percentage source contributions were as follows:

Main Sources of air pollution in South Ribble (according to DEFRA, 2022 data)

NO_2 (all results are below national targets; full details are graphed in Appendix C)

1) Road transport (particularly diesel cars)
2) Industry combustion
3) Other UK sources

$PM_{2.5}$ and PM_{10} (all results are below national targets; full details are graphed in Appendix D)

1) Road transport brake and tyre wear
2) Secondary inorganic aerosols (nitrate, ammonium, sulphate)
3) Domestic combustion

Road transport is associated with causing both increased NO_2 and PM concentrations. In particular, diesel cars and diesel LGVs contribute to air quality pollutants in the borough.

Lancashire County Council have developed new proposals with a view to reduce congestion and improve journey times along the A582.

Industry combustion increases pollutants due to the combustion processes operated during the manufacture of goods in the borough the main point sources of NO_2 and PM are the industrial areas at Walton Summit, Leyland Moss Side Industrial Estate, Centurion Business Park and Samlesbury.

The second largest air pollution source for PM is from secondary aerosols. Aerosols are small particles in the air which can either cool or warm the climate depending on the type and colour of particle. Air pollution aerosols are produced continuously, and the particles are a constant presence. Secondary aerosols are produced as a result of the condensation of vapours on pre – existing aerosol particles.

Full details on annual status reports can be found on the South Ribble Borough Council website What are the results locally? | Air quality | South Ribble

Required Reduction in Emissions

SO2 emissions for the Borough are related to the West Coast Mainline but all the Defra data shows that levels are well below national targets.

Monitoring figures for the Borough show that the AQMAs are compliant with the required road traffic emissions levels and have not exceeded Defra standards within the past 5 years. However, as this time frame includes traffic restrictions due to the pandemic this is not necessarily a true reflection of normal emission levels throughout the five-year period. Additionally, the emerging Central Lancashire Local Plan is anticipated to be published in 2025, including major local development sites for the Borough that may impact on emission levels.

Further breakdown of traffic source emissions can be found in Appendix E

Defra data suggests a hotspot of emissions around the M6 A675 crossover. Subsequently new NO_2 monitoring equipment has been installed in this area in 2024.

Air quality modelling for 2018, 2023 and predictions for 2030 has been undertaken and the maps are available in Appendix F

Development and Implementation

Consultation and Stakeholder Engagement

In developing this Air Quality Strategy and updating this AQAP, we have worked with other local authorities, agencies, businesses and the local community to improve local air quality.

In addition, we have undertaken the following stakeholder engagement:

- Face to face engagement
- Social media posts
- Online questionnaire
- Direct consultation with partners including the Director of Public Health, Environment Agency, Elected members. Neighbouring local authorities – Chorley, Preston and West Lancs and Penwortham Town Council

A summary of response to our consultation stakeholder engagement is given in **Error! Reference source not found.**

Steering Group

The Council's Climate, Air Quality and Biodiversity activities form part of the remit of the cross-party Climate Emergency Task Group.

The Task Group includes SRBC elected members, local authority Officers, South Ribble's Youth Council and invited guest from local businesses and community projects.

South Ribble Air Quality Action Plan

In order to achieve the Council's aims and objectives in relation to air quality a revised action plan has been produced as a separate document. The action plan identifies measures the council and its partners will take to maintain and improve air quality across the borough.

The last action plan was adopted in 2018 and provided a challenging and time relevant comprehensive list of measures to be undertaken. While many of these have been achieved, some due to funding, policy and resources have not. The new action plan has been updated taking into account the current air quality issues, the climate and biodiversity policies, strategies and action plans with a view to providing a robust list of measures to improve the local environment.

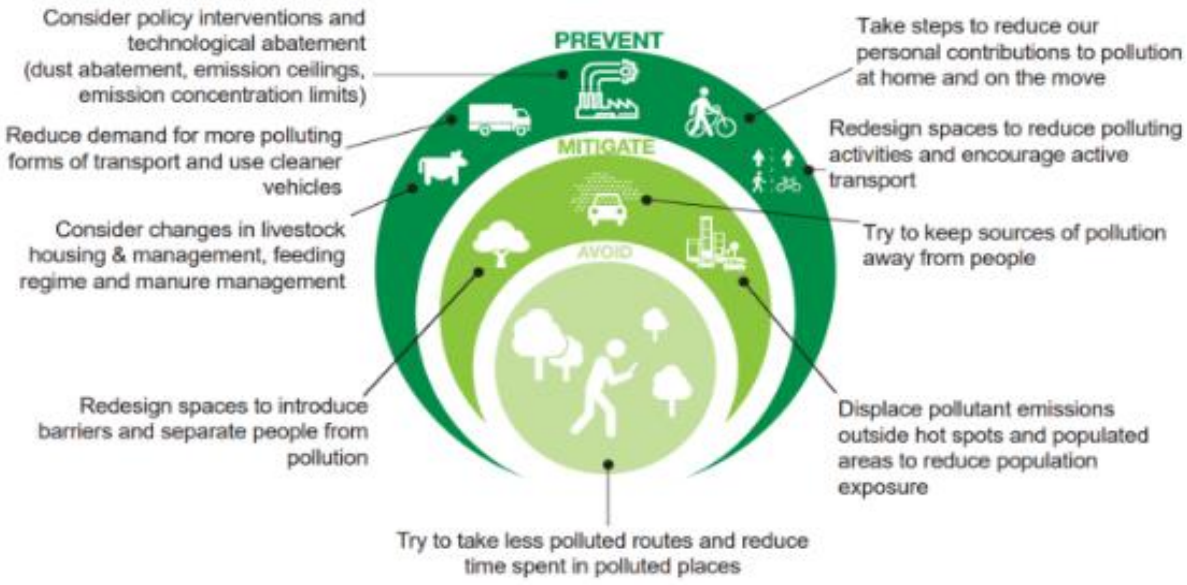
The Action Plan details those actions required to be taken across the Borough but also the actions that it intends to take as an organisation and local employer.

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 the Council's Annual Status Report.

The Air Quality Action Plan has been written with regard to the Hierarchy of Pollution Control.

Figure 5 - Hierarchy of Pollution Control



Source – [*Principal interventions for LAs: improving air quality and public health (publishing.service.gov.uk)*]

Delivery and Reporting

Delivery

The delivery of the action plan will be monitored through the Climate Emergency Team forming part of the Environmental Health Department. However, assistance with individual actions will be required from cross departmental teams and external partners.

The delivery of the action plan will be undertaken in conjunction with the Council's adopted Climate Emergency and Biodiversity Action Plans with themes and actions overlapping the three documents.

Reporting

Reporting on progress with the action plan will be provided through the following channels:

- Annual Status report – Submitted to Defra as part of the LAQM framework and a legal requirement by end June each year.
- An annual update to Full Council in July of each year

- Quarterly updates to the Climate Emergency Task Group

References

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Glossary

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
AQS	Air Quality Strategy
ASR	Air quality Annual Status Report
COMEAP	Committee on Medical Effects of Air Pollutants
Defra	Department for Environment, Food and Rural Affairs
DAQI	Daily Air Quality Index
EU	European Union
EV	Electric Vehicle
IAQ	Indoor Air Quality
LAQM	Local Air Quality Management
µm	Micrometre, one thousandth of a millimetre
NO_x	Nitrogen Oxides
NO_2	Nitrogen Dioxide
PM	Particulate Matter
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
SRBC	South Ribble Borough Council
SSSI	Sites of Special Scientific Interest

Appendix A – Air Quality Objectives

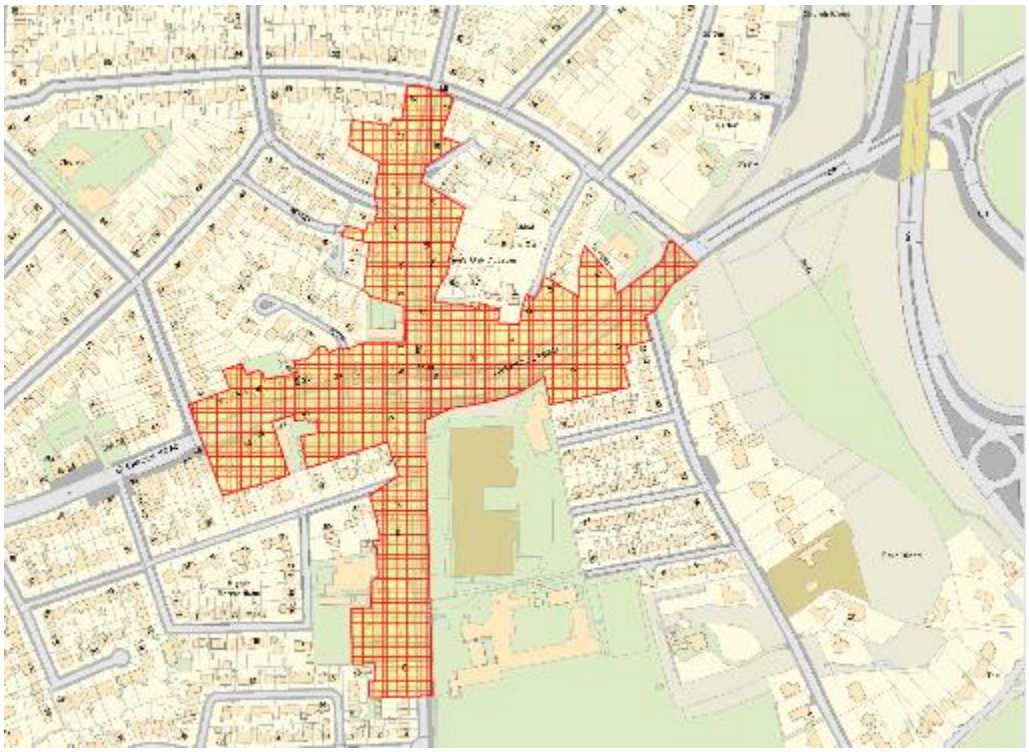
National air quality objectives and European Directive limit and target values for the protection of human health							
Pollutant	**Applies**	**Objective**	**Concentration measured as[10]**	**Date to be achieved by and maintained thereafter**	**European obligations**	**Date to be achieved by and maintained thereafter**	**New or existing**
Particles (PM_{10})	UK	50µg.m^{-3} not to be exceeded more than 35 times a year	24 hour mean	31 December 2004	50µg.m^{-3} not to be exceeded more than 35 times a year	1 January 2005	Retain existing
	UK	40µg.m^{-3}	annual mean	31 December 2004	40µg.m^{-3}	1 January 2005	
	Indicative 2010 objectives for PM_{10} (from the 2000 Strategy and 2003 Addendum) have been replaced by an exposure reduction approach for $PM_{2.5}$ (except in Scotland – see below)						
	Scotland	50µg.m^{-3} not to be exceeded more than 7 times a year	24 hour mean	31 December 2010			Retain existing
	Scotland	18µg.m^{-3}	annual mean	31 December 2010			
Particles ($PM_{2.5}$) Exposure Reduction	UK (except Scotland)	25µg.m^{-3}	annual mean	2020	Target value 25µg.m^{-3} [12]	2010	New (European obligations still under negotiation)
	Scotland	12µg.m^{-3}		2020	Limit value 25µg.m^{-3}	2015	
	UK urban areas	Target of 15% reduction in concentrations at urban background[11]		Between 2010 and 2020	Target of 20% reduction in concentrations at urban background	Between 2010 and 2020	
Nitrogen dioxide	UK	200µg.m^{-3} not to be exceeded more than 18 times a year	1 hour mean	31 December 2005	200µg.m^{-3} not to be exceeded more than 18 times a year	1 January 2010	Retain existing
	UK	40µg.m^{-3}	annual mean	31 December 2005	40µg.m^{-3}	1 January 2010	
Ozone	UK	100µg.m^{-3} not to be exceeded more than 10 times a year	8 hour mean	31 December 2005	Target of 120µg.m^{-3} not to be exceeded more than 25 times a year averaged over 3 years	31 December 2010	Retain existing

National air quality objectives and European Directive limit and target values for the protection of human health							
Pollutant	**Applies**	**Objective**	**Concentration measured as**	**Date to be achieved by and maintained thereafter**	**European obligations**	**Date to be achieved by and maintained thereafter**	**New or existing**
Sulphur dioxide	UK	266µg.m^{-3} not to be exceeded more than 35 times a year	15 minute mean	31 December 2005			Retain existing
	UK	350µg.m^{-3} not to be exceeded more than 24 times a year	1 hour mean	31 December 2004	350µg.m^{-3} not to be exceeded more than 24 times a year	1 January 2005	
	UK	125µg.m^{-3} not to be exceeded more than 3 times a year	24 hour mean	31 December 2004	125µg.m^{-3} not to be exceeded more than 3 times a year	1 January 2005	
Polycyclic aromatic hydrocarbons	UK	0.25ng.m^{-3} B[a]P	as annual average	31 December 2010	Target of 1ng.m^{-3}	31 December 2012	Retain existing
Benzene	UK	16.25µg.m^{-3}	running annual mean	31 December 2003			Retain existing
	England and Wales	5µg.m^{-3}	annual average	31 December 2010	5µg.m^{-3}	1 January 2010	
	Scotland, Northern Ireland	3.25µg.m^{-3}	running annual mean	31 December 2010			
1,3- butadiene	UK	2.25µg.m^{-3}	running annual mean	31 December 2003			Retain existing
Carbon monoxide	UK	10mg.m^{-3}	maximum daily running 8 hour mean/in Scotland as running 8 hour mean	31 December 2003	10mg.m^{-3}	1 January 2005	Retain existing
Lead	UK	0.5µg.m^{-3}	annual mean	31 December 2004	0.5µg.m^{-3}	1 January 2005	Retain existing
		0.25µg.m^{-3}	annual mean	31 December 2008			

National air quality objectives and European Directive limit and target values for the protection of human health							
Pollutant	**Applies**	**Objective**	**Concentration measured as**	**Date to be achieved by and maintained thereafter**	**European obligations**	**Date to be achieved by and maintained thereafter**	**New or existing**
National air quality objectives and European Directive limit and target values for the protection of vegetation and ecosystems							
Nitrogen oxides	UK	30µg.m^{-3}	annual mean	31 December 2000	30µg.m^{-3}	19 July 2001	Retain existing in accordance with 1st Daughter Directive
Sulphur dioxide	UK	20µg.m^{-3}	annual mean	31 December 2000	20µg.m^{-3}	19 July 2001	Retain existing in accordance with 1st Daughter Directive
	UK	20µg.m^{-3}	winter average	31 December 2000	20µg.m^{-3}	19 July 2001	
Ozone: protection of vegetation & ecosystems	UK	Target value of 18,000µg m^{-3} based on AOT40 to be calculated from 1 hour values from May to July, and to be achieved, so far as possible, by 2010	Average over 5 years	1 January 2010	Target value of 18,000µg m^{-3} based on AOT40 to be calculated from 1 hour values from May to July, and to be achieved, so far as possible, by 2010	1 January 2010	New EU target

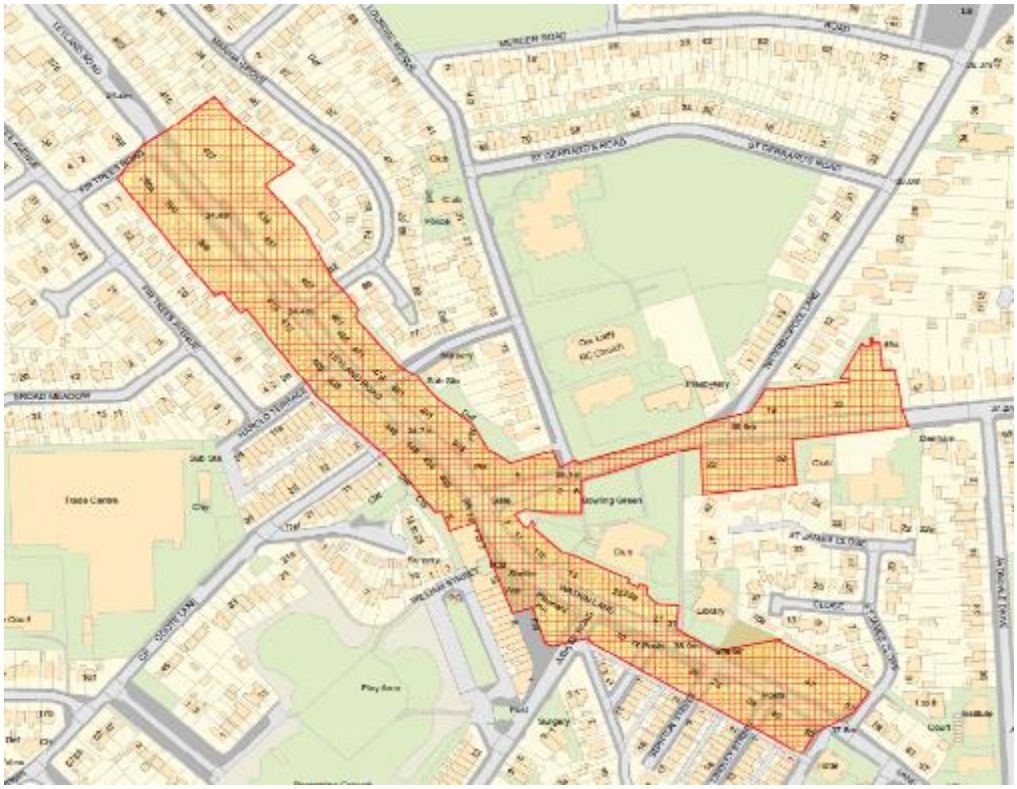
Appendix B – Maps of Declared Air Quality Management Areas and Defra Monitoring Points.

(Previous AQMA 1, Penwortham – revocation commenced in 2023)

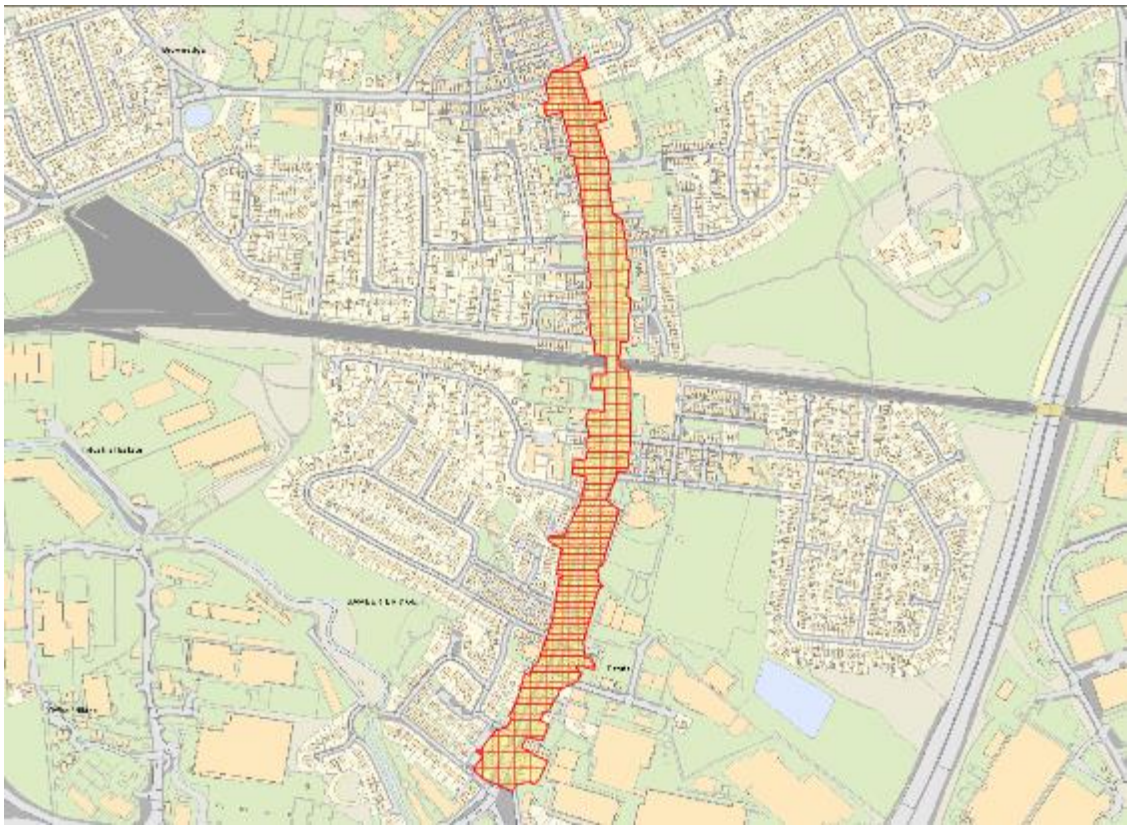


AQMA 2, Walton-le-Dale

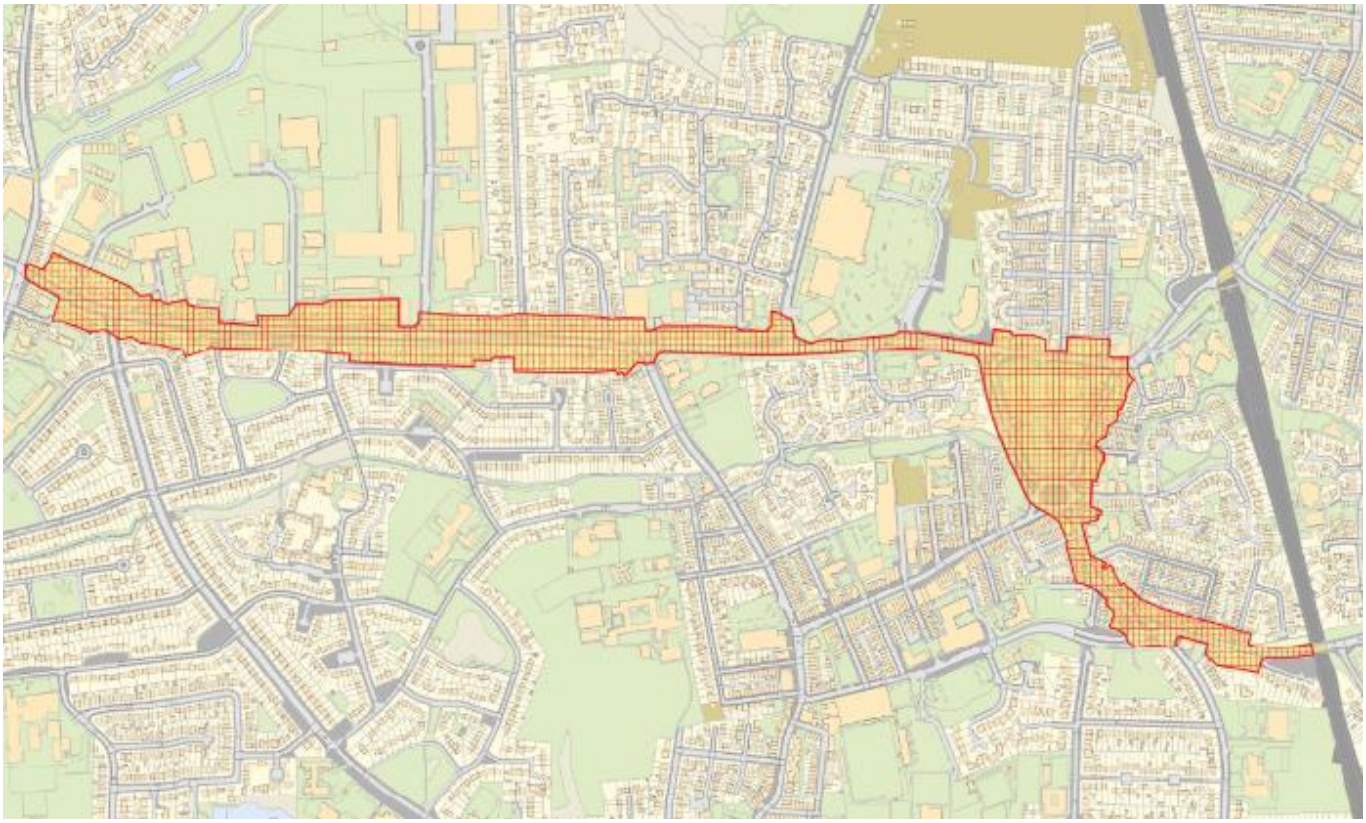
AQMA 3, Lostock Hall

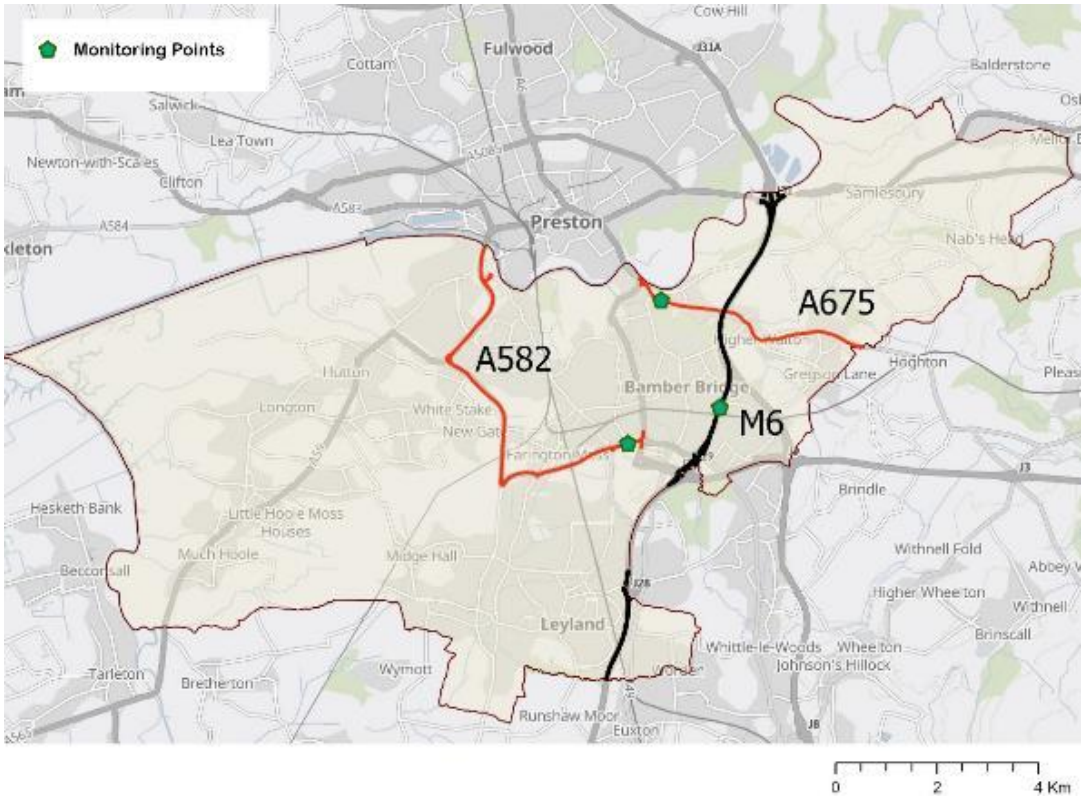


AQMA 4, Bamber Bridge



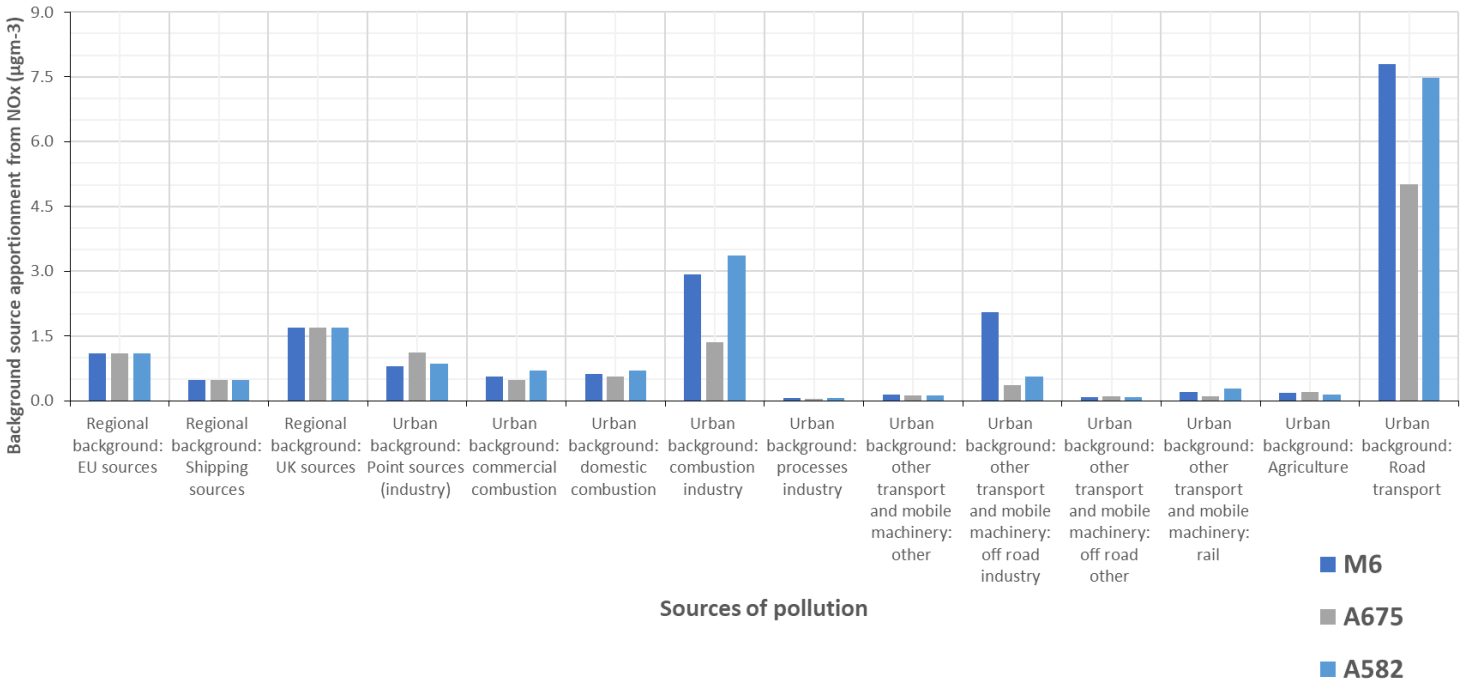
AQMA 5, Leyland





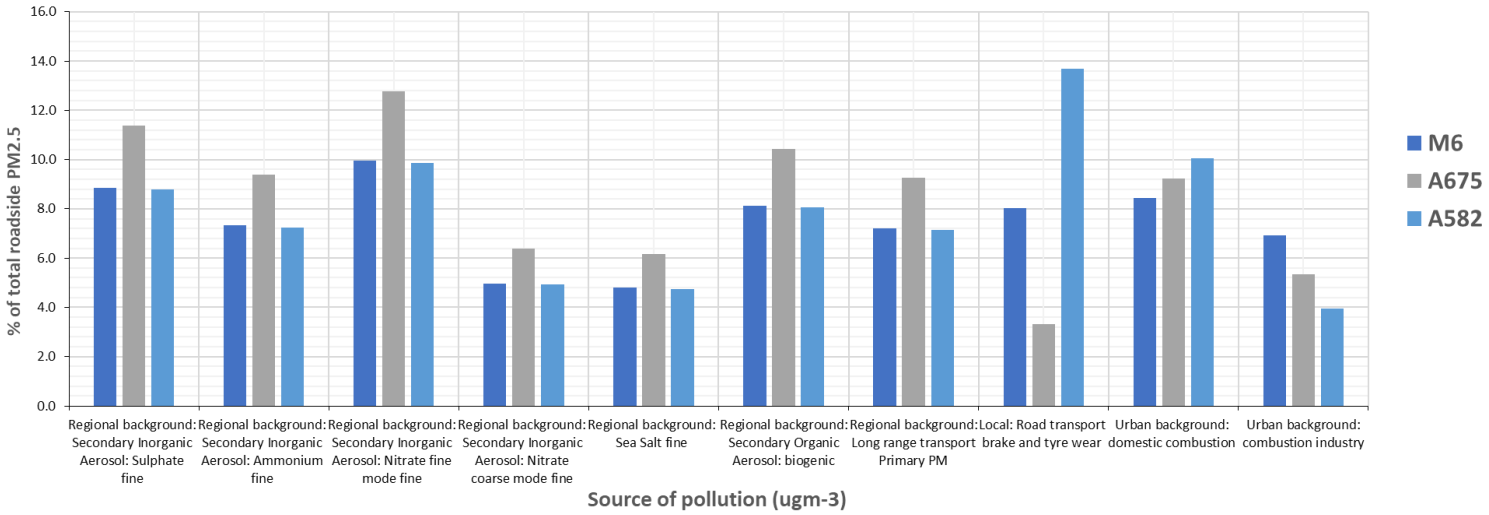
The Defra, 2022 Source Apportionment data contains air quality data for the three main roads of concern for air pollution in South Ribble (A675, A582, M6).

Appendix C – Sources of NO_2

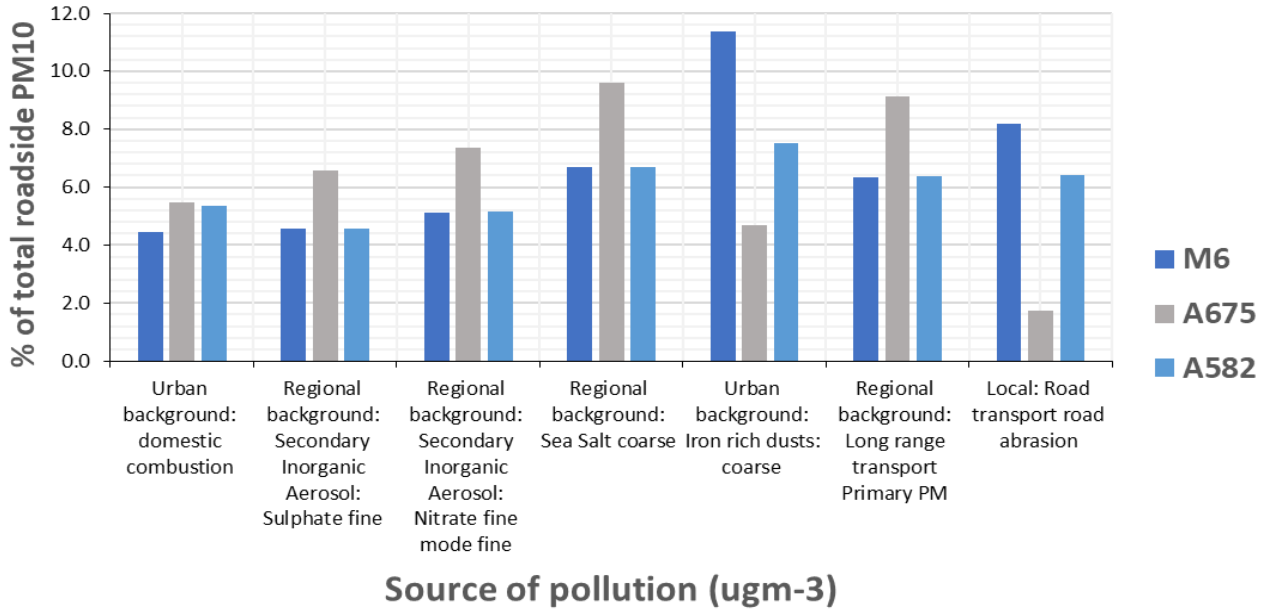


Background source apportionment from NO_x for each main pollution source for the three major roads of air pollution monitoring in South Ribble. Data sourced from Defra. NO_x is a collective term for all nitrogen oxides.

Appendix D – Sources of PM

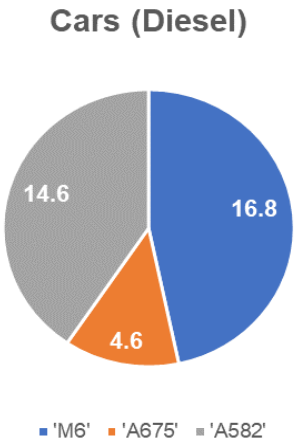


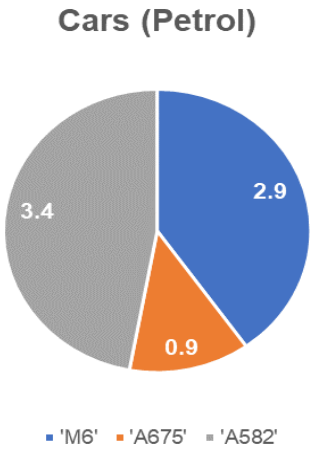
The percentage total roadside of $PM_{2.5}$ for each pollution source calculated from the overall total roadside $PM_{2.5}$ for each monitored road M6, A675, A582, data from Defra.

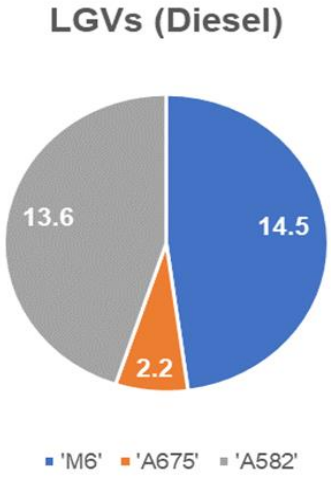


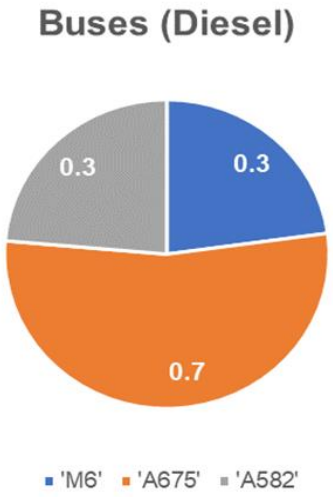
The percentage total roadside of PM^{10} for each pollution source calculated from the overall total roadside PM_{10} for each monitored road M6, A675, A582, data from Defra.

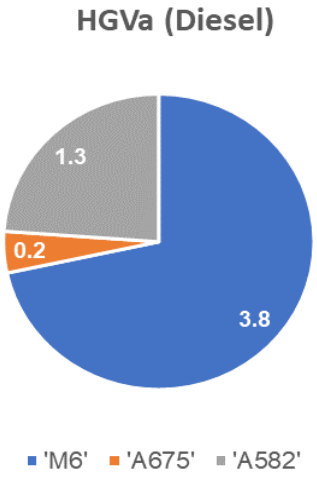
Appendix E – Traffic Source Emissions

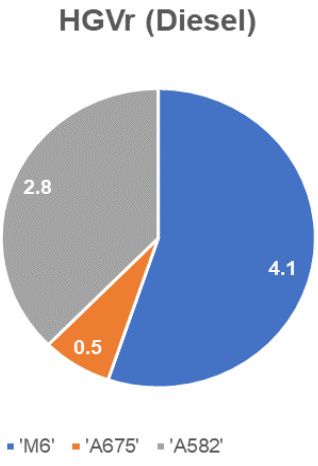










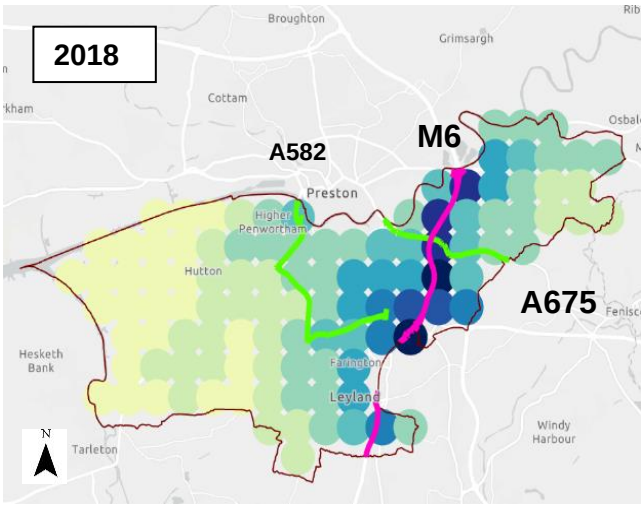


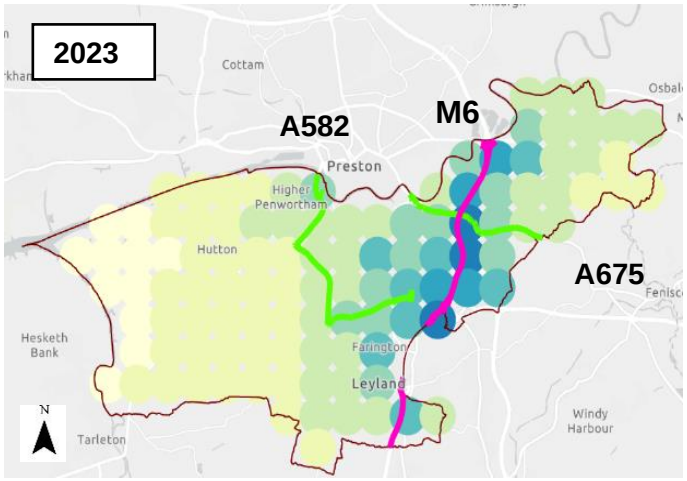
Road traffic source apportionment for NOx in μgm^{-3} for categories of vehicles, for each of the three roads included in the Defra air quality monitoring. N.B. Motorcyles (petrol) and taxis had recorded NO_x values of 0 for each of the three roads.

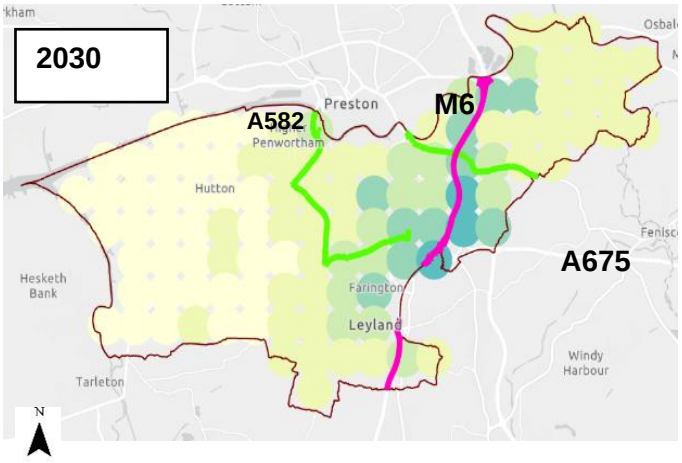
HGVa – articulated

HGVr – rigid

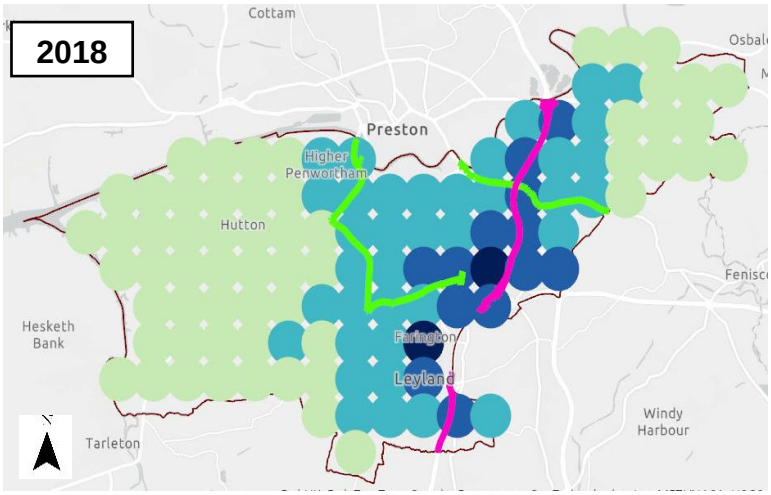
Appendix F – Air Quality Modelling for 2018, 2023 and 2030

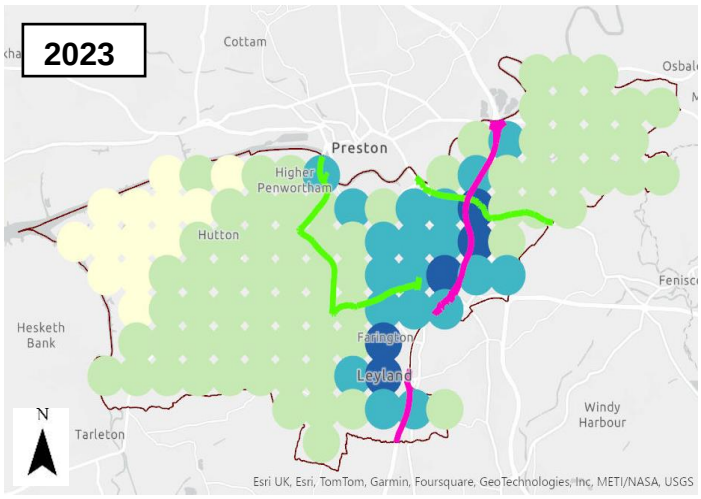




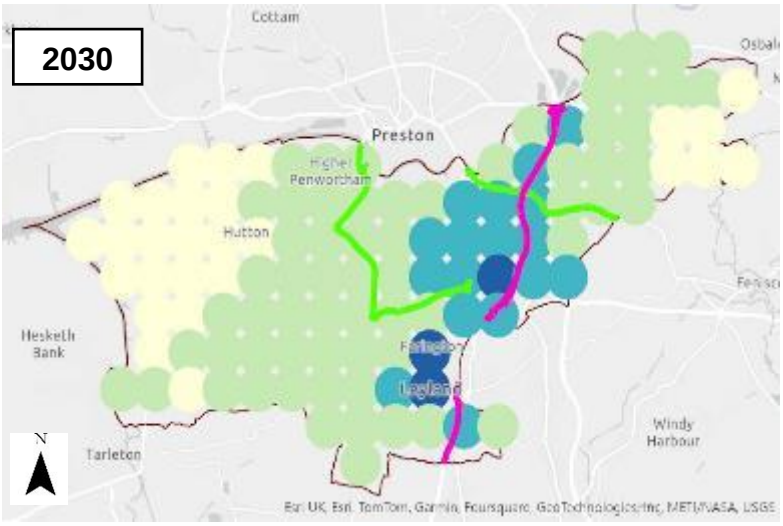


NO_2 (μgm^{-3})

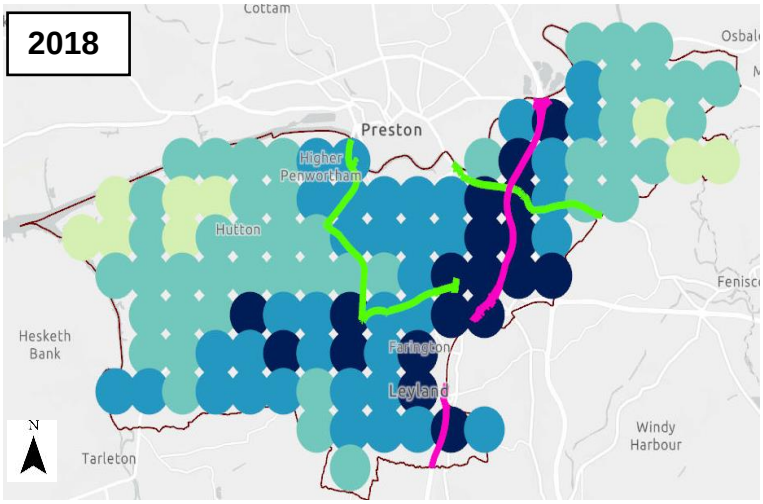


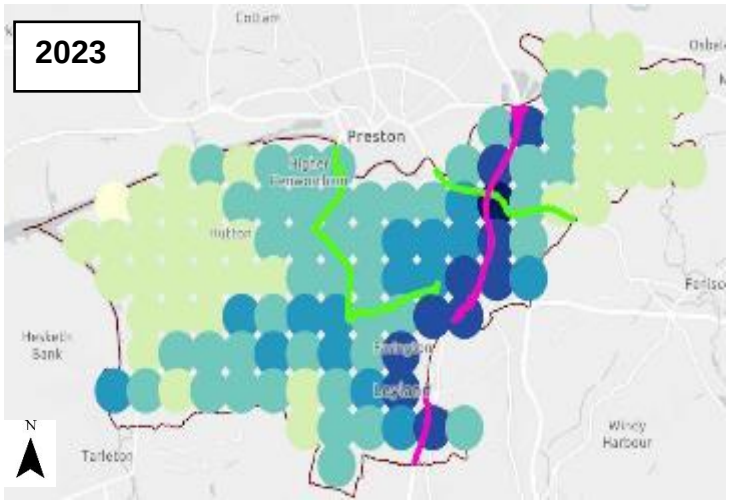


5.0 - 6.0
6.0 - 7.0
7.0 - 8.0
8.0 - 9.0
9.0 - 10.0



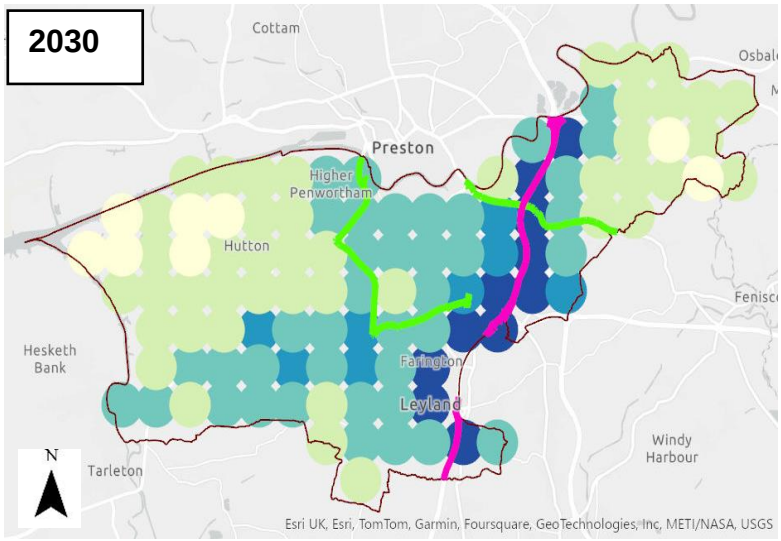
PM 2.5





8.0 - 9.0
9.0 - 10.0
10.0 - 11.0
11.0 - 12.0
12.0 - 13.0
13.0 - 14.0

PM 10



Appendix G

Consultation Responses Summary

South Ribble Borough Council

CLIMATE EMERGENCY

Air Quality Consultation – Part 1

The first consultation for the Air Quality Review ran from September 2023 until December 2023 and took on two forms –

- it was included as part of the Council's 'Greening Homes and Businesses' event in September 2023, attended over the 2 days by local businesses, community groups, schools, elected members and members of the public, and
- an online public consultation.

Greening Homes and Businesses Event

The Climate Team hosted a dedicated stand over the 2-day Climate Change event, to promote and discuss the air quality review with interested parties, including schools, businesses, elected members, community groups, and members of the public.

All visitors to the event were provided with the opportunity to view air quality results across the Borough, and more specifically to their areas in which they live, work, or have a specific interest. Visitors received information about the work undertaken since 2018 to improve air quality across the Borough and were provided with details of the online consultation.

For the few adult delegates expressing a reluctance to participate via the online contribution, officer names and telephone numbers were provided to enable a consultation response via telephone. However, no telephone consultations were requested.

The Greening Homes and Businesses Event, including the air quality review stand, was attended over the 2-day period by –

Business event on Friday 29th September	Exhibitors – 28 Delegates – 42 Schools (11 from South Ribble and 1 from Liverpool), 82 pupils and 20 staff.
Public event, Saturday 30th September via the car	Exhibitors – 17 Delegates – 66 (plus some that entered park and weren't formally counted)

Online Public Consultation

The online public consultation ran from the launch on 29th September to 15th December.

There were 11 responses. All responses were individual responses, there were no responses from businesses, schools or landowners.

36% of responders felt that they are directly affected by poor air quality, with the other 64% stating they do not feel directly affected by poor air quality.

In response to being asked about the biggest areas of concern in South Ribble, the responses received included –

- Traffic at
  - Turpin Green Lane, Leyland
  - Tardy Gate
  - Golden Hill Lane, Leyland

    - Stanifield Lane
    - Motorway junctions
    - Leyland Road
- Wood burners

Responders provided the following suggestions as to how the Council and its partners could improve air quality in the above-mentioned areas,

- Traffic flow / movement / traffic light phasing
- Closing roads to through traffic
- Traffic calming measures.
- Ban bonfires.
- Fines for solid fuel stoves / education on wood storage
- Enforcement

When asked 'Are there any other actions you think the council should be taking to improve air quality? Either specifically or generally across the borough' some of the responses received were –

- Enforce smoke control areas.
- Encourage cycling and walking.
- Traffic routes for haulage traffic

Full details of all the questions and the responses are given in Appendix One.

Air Quality Consultation – Part 2

The second consultation for the Air Quality Strategy and Action Plan ran from March to April 2024 and took the form of an online survey and direct requests for contributions from

- Environment Agency
- Elected members.
- Neighbouring local authorities – Chorley, Preston and West Lancs
- Penwortham Town Council

Post public consultation the draft Action plan and Strategy was sent to Defra as a statutory consultee and to LCC and the Director of Public Health for Lancashire.

Online public consultation

The online consultation ran from the 18th March to the 29th April 2024.

There were 17 responses.

88% felt that air quality was of high importance to their family, 76% that it was of high importance in their neighbourhood and 88% said it was of high importance nationally.

The comments show that the family concerns were linked to existing medical conditions and the inability of an individual to affect the quality of air that they breathe. Neighbourhood concerns were linked to traffic and wood burners, while nationally concerns were raised around policy, reducing traffic and increasing safe active travel and public transport.

When asked if the Strategy had the right aims and objectives, 53% said yes. The comments for this area included,

- Cost of living and the increased reliance on wood burners for heating
- SRBC leading by example is good.
- Bonfire night adds to pollution levels.
- More roads and increased traffic
- Promote active travel and alternative fuels.

When asked about including indoor air quality in the Strategy and Action Plan 59% said it was right to include it.

Responders provided the following suggestions as to what was missing from the Strategy and Action Plan,

- Enforcement of carbon offsetting for development and construction
- Inclusion of vaping / education about the impacts of vaping
- Bans or planning consent for wood burners.
- Improved public transport and increased safe active travel opportunities.
- Agricultural / farming sources of air pollution

When asked about the reporting requirements within the Strategy respondents asked for,

- Clarity and openness
- Attainable targets
- Smoke control areas.

Full details of all the questions and the responses are given in Appendix Two