Breathe Easy, Draft Air Quality Strategy for South Ribble

South Ribble Borough Council

CLIMATE EMERGENCY

Document Control

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Owner (Department)	Environmental Health
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Review of Strategy

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Version	1.0

Summary

This strategy has been prepared as part of the five-year review of South Ribble Borough Council's Air Quality Action Plan.

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.

In 2016 and updated in 2018 an Air Quality Action Plan was approved by Full Council setting out the actions that the Council and its partners would undertake to improve and maintain air quality.

Following a number of improvements in the area and lower monitoring results the Penwortham AQMA was revoked in 2023.

Contents

Foreword

The quality of the air we breathe plays a huge part in our health and that of our communities, with air pollution being a major public health risk ranking alongside cancer, heart disease and obesity.

South Ribble Borough Council are committed to protecting the local environment along with our communities who live, work and play within the borough, ensuring an environment that is clean and safe. This includes protection from air pollution and making sure the air we all breathe is not harmful to our health and wellbeing.

This strategy will run from 2024 to 2029 and is focused on maintaining and improving air quality across South Ribble. The strategy has been written to compliment the Council's existing Climate Emergency and Biodiversity Strategies.

Vision

South Ribble Borough Council is committed to working 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.

Aims

- To work with our partners to improve and maintain air quality across the borough.

Objectives

- 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.

Introduction

This air quality strategy has been written to support the revised Air Quality Action Plan. The current Action Plan was first published in 2016 and revised 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.

In line with the Local Air Quality Management (LAQM) process, action plans should be revised every five years.

Why a Strategy?

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. Moving forward the council is looking towards a single integrated action plan and format of the new action plan will follow that of the Climate Emergency and Biodiversity Action Plans. These concise documents concentrating on the actions to be undertaken with greater detail provided within the strategies. The same approach has therefore been taken with air quality.

In addition, the Local Air Quality Management (LAQM) Technical Guidance requires that from 2023 Local Authorities with 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.

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).

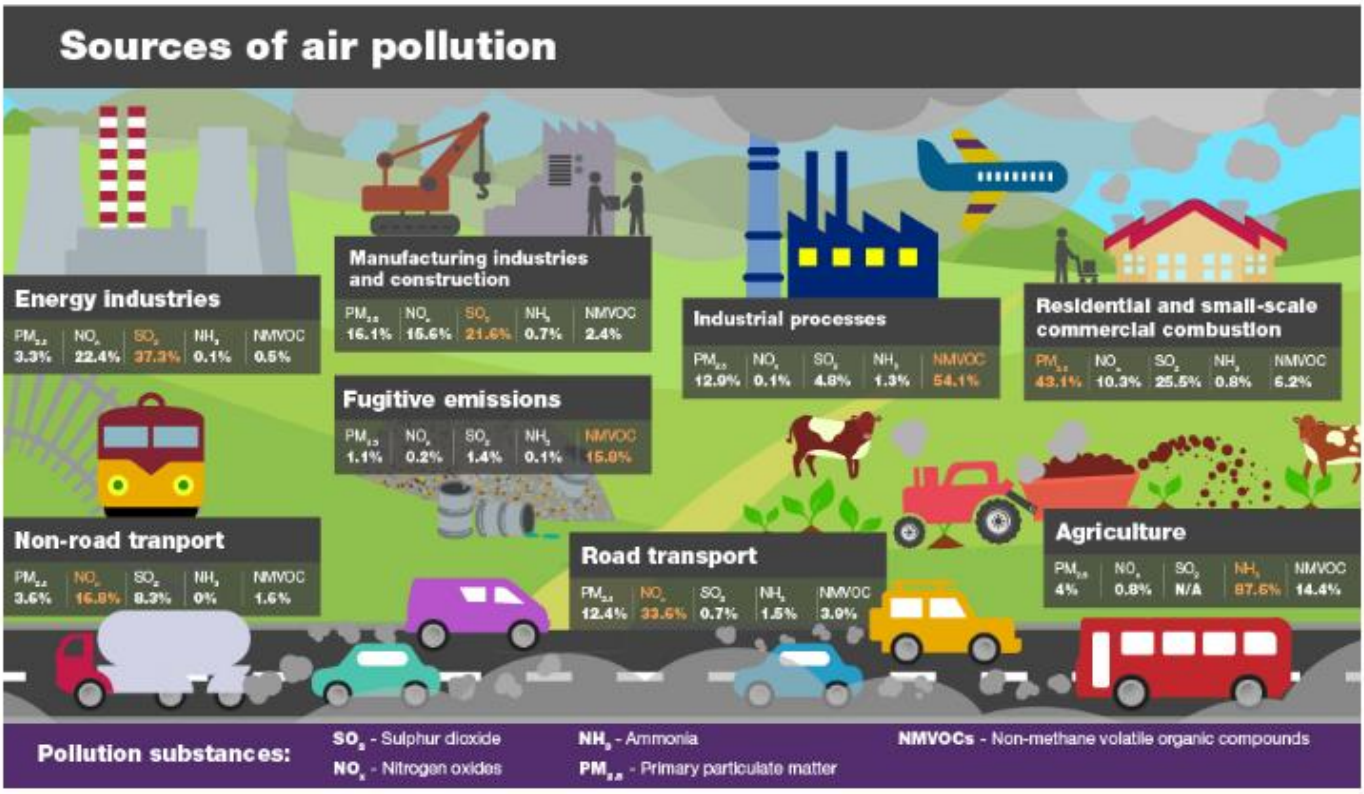
Our air gets dirty (polluted) when it starts to hold on to more tiny particles and the balance of the natural gases, that make air, change.

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 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

Public Health England | Health Matters



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

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.

The annual mortality from human-made air pollution in the UK is roughly equivalent to between 28,000 and 36,000 deaths every year. It is estimated that between 2017 and 2025 the total cost to the NHS and social care system of air pollutants (fine particulate matter and nitrogen dioxide), for which there is more robust evidence for an association, will be £1.6 billion.

Air pollution can cause and worsen health effects in all individuals, particularly society's most vulnerable populations. Long-term exposure to air pollution can cause chronic conditions such as cardiovascular and respiratory diseases as well as lung cancer, leading to reduced life expectancy. Short-term increases in levels of air pollution can also cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in respiratory and cardiovascular hospital admissions and mortality.

There is clear evidence[1] that air pollution contributes on the initiation and development of Cardiovascular and respiratory diseases and can cause lung cancer. Emerging evidence 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.

Long-term impacts may include permanently reduced lung function in children, the causation of cardiovascular disease, respiratory illness such as asthma, and early death.

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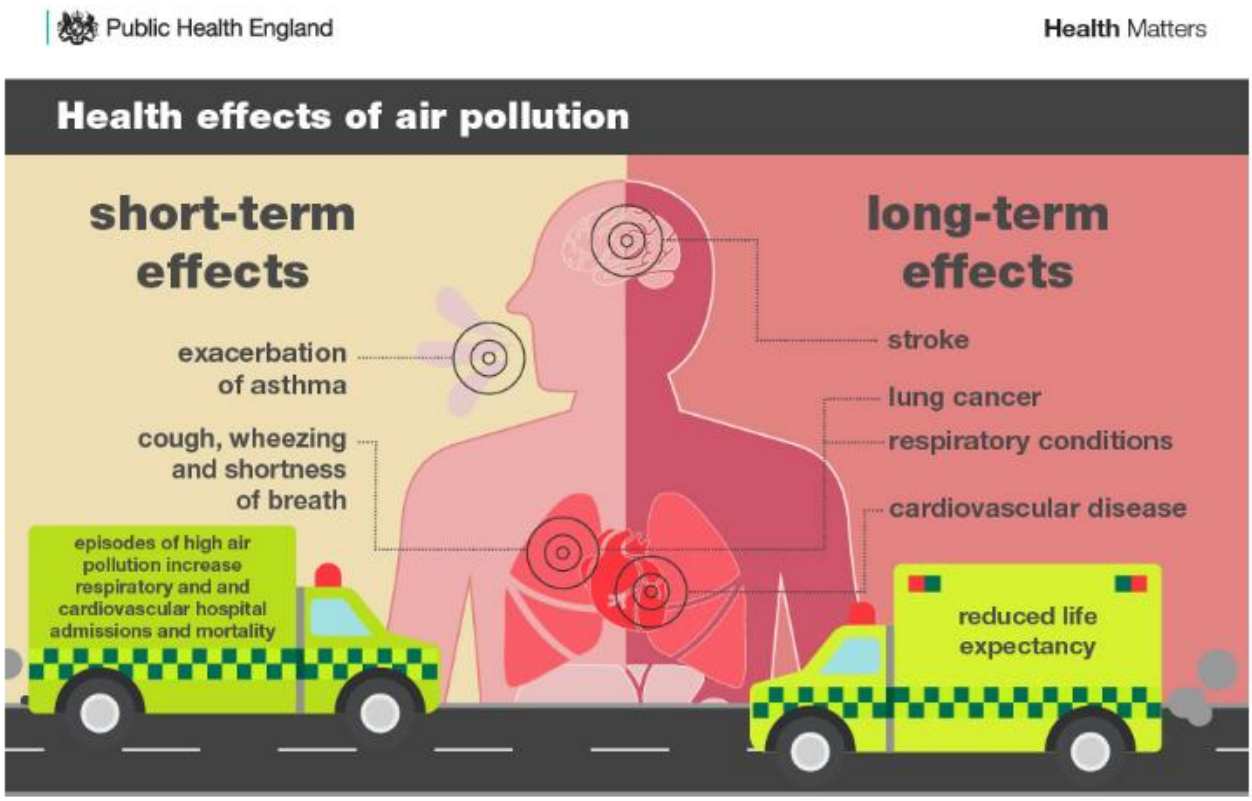
[1] Chief Medical Officer's Annual Report 2022 Air pollution https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1124738/chief-medical-officers-annual-report-air-pollution-dec-2022.pdf

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.

Source 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 major contributor to the decline of biodiversity in the UK.

Approximately 93.5% of England's Sites of Special Scientific Interest (SSSI's) exceed the lower critical ammonia level set to protect sensitive plants, with eight sensitive habitat types in England exceeding the nitrogen critical loads across by 98.5 - 199% of their area. This includes woodland and peatlands, two vital habitats to meeting the UK's net zero targets.

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.

Tackling pollutants which impact on biodiversity is an integral part of this. Through the Environment Act 2021, local authorities are required to produce local nature recovery strategies. Whilst local nature recovery strategies will not be a primary delivery mechanism for air quality measures, air quality impacts on habitats should be considered during their preparation, where relevant. They should be considered in combination with protected sites strategies and shared nitrogen action plans to form a holistic approach to alleviating impacts of air pollution on nature.

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 PM2.5 concentrations by 1 µg/m3 increases Gross Domestic Product (GDP) by 0.8% on average in Europe2[2].

[2] https://www.oecd-ilibrary.org/economics/the-economic-cost-of-air-pollution-evidence-from-europe_56119490-en

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 B. 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 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,

- PM10 an annual average value of 40 µg/m^3
- PM10 a running 24-hour average of 50 µg/m^3 more than 35 times in a single year
- PM2.5 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.

Legislation Relevant to Air Quality

LAQM

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.

Integrated Pollution Prevention and Control / Local Authority Pollution Prevent Control (IPPC – LAPPC)

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 offensive 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.

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 have 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 also required on all relevant applications helping with the transition towards a larger EV fleet.

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, fail can result in a fine or prosecution.

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

Indoor Air Quality

Indoor air quality (IAQ) 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

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 poor air quality. These have been declared as Air Quality Management Areas. The borough had five declared areas with the one recently having been revoked due to improvements and continual low monitoring results in the area. The areas are;

- AQMA1: The Junction of Liverpool Road, Priory Road and Cop Lane Penwortham (Revoked)
- 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 five areas were declared due to the likely exceedance of the annual mean Nitrogen Dioxide objective value of 40µg/m^3.

Following improvements to the area the Penwortham AQMA was revoked in 2023. Plans of the AQMAs are provided as Appendix A.

Local Air Quality Monitoring

The monitoring of local air quality is provided using three real-time air quality monitoring stations. These 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 40 locations around the Borough, focusing on the AQMAs of Leyland, Lostock Hall, Penwortham, Bamber Bridge and Walton-le-Dale

Reducing Air Pollution

Improving air quality is crucial to reduce the health impacts discussed above and, in turn, help people live longer, healthier lives. A study in 2006 found that reducing PM by 10µg/m^3 would extend lifespan in the UK by 5 times more than eliminating casualties on the roads, or 3 times more than eliminating passive smoking.

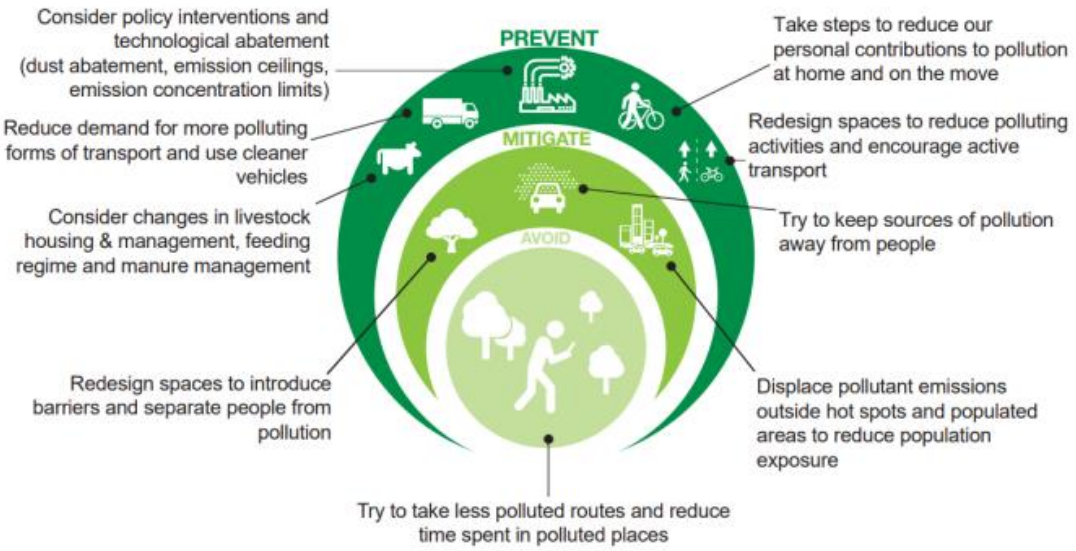
Local authorities have a statutory role in assessing and improving local air quality, and the cumulative effects of this local action are significant. The effect of a range of interventions to improve air quality has greater potential to reduce the associated burden of disease than anyone intervention alone. As the greatest impact will be achieved by synergistic packages of interventions, a strategic approach involving a combination of legislative, policy, behavioural and technological interventions is required in order to realise the greatest benefits.

When new plans and programmes are designed, and when new development or regulatory consents are issued, options appraisals can preferentially select approaches that have the greatest potential to benefit air quality and health.

Councils can:

- invest in infrastructure and public transport, and promote active travel and cycle routes.
- implement measures to reduce air pollution caused by road traffic and other sources.
- design healthy environments, bringing in spatial planning, urban design, road and building layouts, and green spaces.

Figure 3 - Air Pollution Hierarchy



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

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. 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.

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 June each year.
- An annual update to Full Council in July of each year
- Quarterly updates to the Climate Emergency Task Group

References

Air pollution: applying All Our Health - GOV.UK (www.gov.uk), accessed 01.03.2024

[1] Chief Medical Officer's Annual Report 2022 Air pollution https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1124738/chief-medical-officers-annual-report-air-pollution-dec-2022.pdf, accessed 01.03.2024

2 The economic cost of air pollution https://www.oecd-ilibrary.org/economics/the-economic-cost-of-air-pollution-evidence-from-europe_56119490-en, accessed 01.03.2024

DEFRA

LAQM Strategy

ASR

https://www.oecd-ilibrary.org/economics/the-economic-cost-of-air-pollution-evidence-from-europe_56119490-en

[1] https://www.southribble.gov.uk/media/1725/A-beginners-guide-to-Air-Quality/pdf/AQ_A_Beginners_Guide.pdf?m=1655738622280

https://www.gov.uk/government/publications/air-pollution-applying-all-our-health/air-pollution-applying-all-our-health

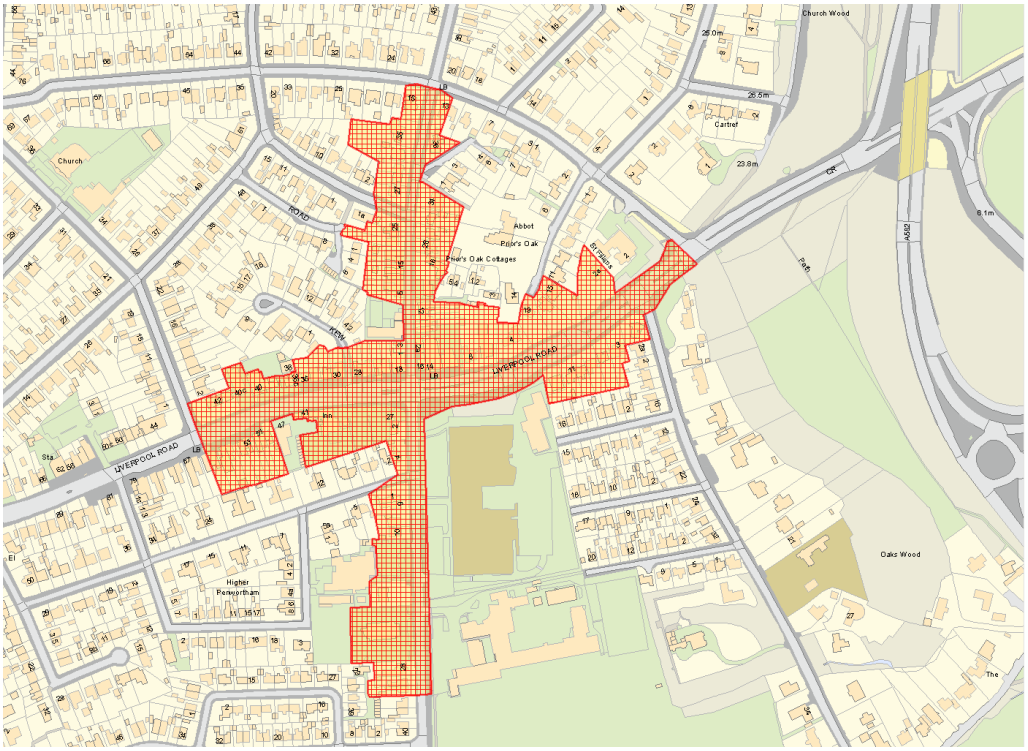
[1] Chief Medical Officer's Annual Report 2022 Air pollution https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1124738/chief-medical-officers-annual-report-air-pollution-dec-2022.pdf

Glossary

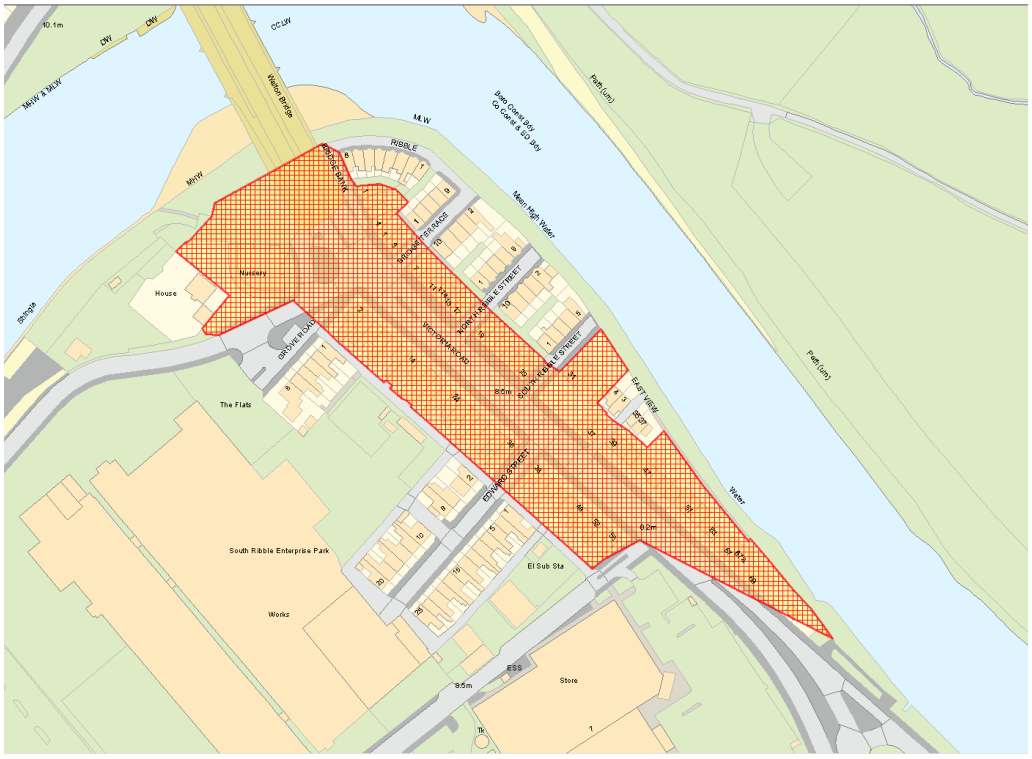
AQMA	Air Quality management Area
COMEAP	Committee on Medical Effects of Air Pollutants
DAQI	Daily Air Quality Index
DEFRA	Department for Environment Food and Rural Affairs
EV	Electric Vehicle
IAQ	Indoor Air Quality
LAQM	Local Air Quality Management
µm	Micrometre, one thousandth of a millimetre
NO_x	Nitrogen Oxides
PM	Particulate Matter
SRBC	South Ribble Borough Council
SSSI	Sites of Special Scientific Interest

Appendix A – Maps of Declared Air Quality Management Areas.

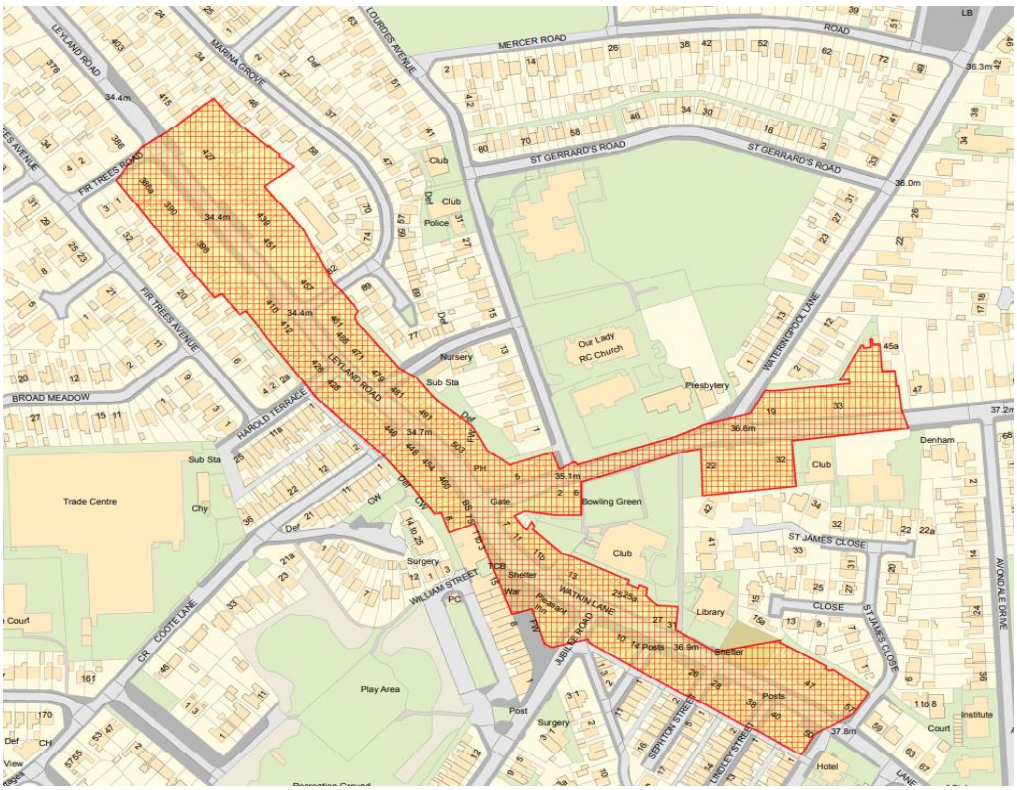
(Previous AQMA 1, Penwortham – revoked in 2023)



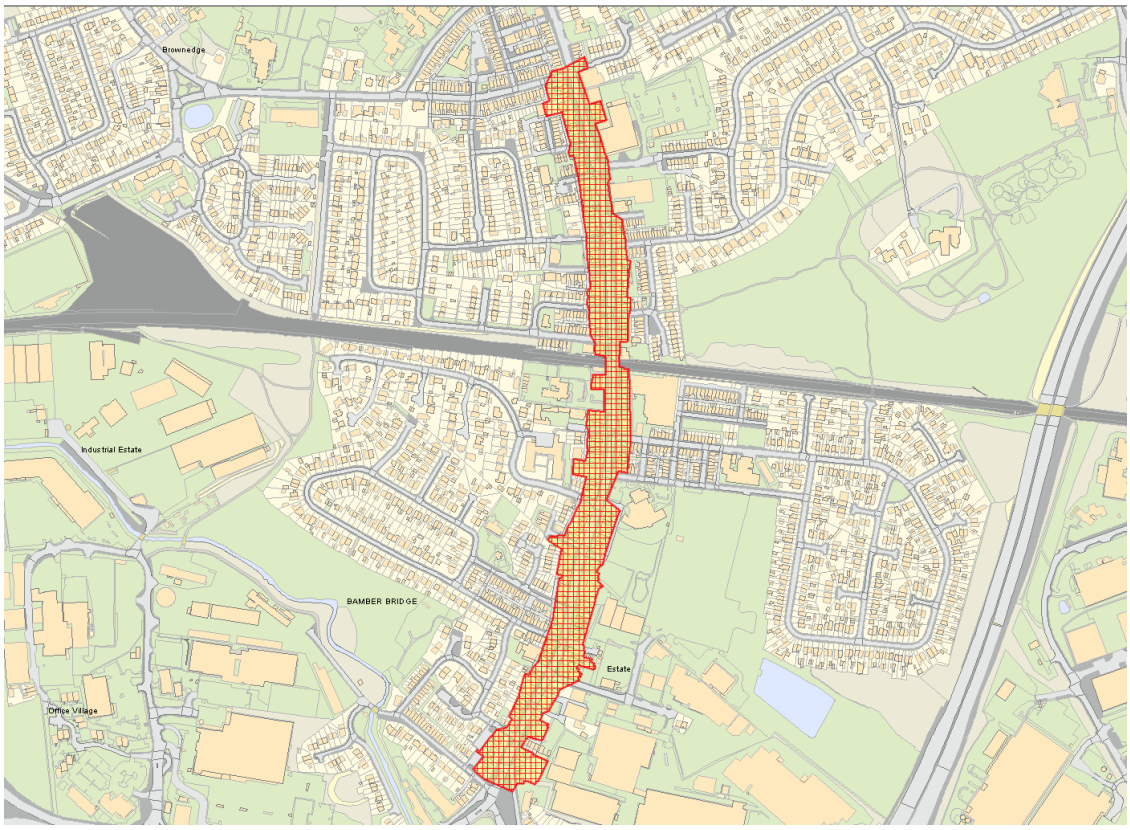
AQMA 2, Walton-le-Dale



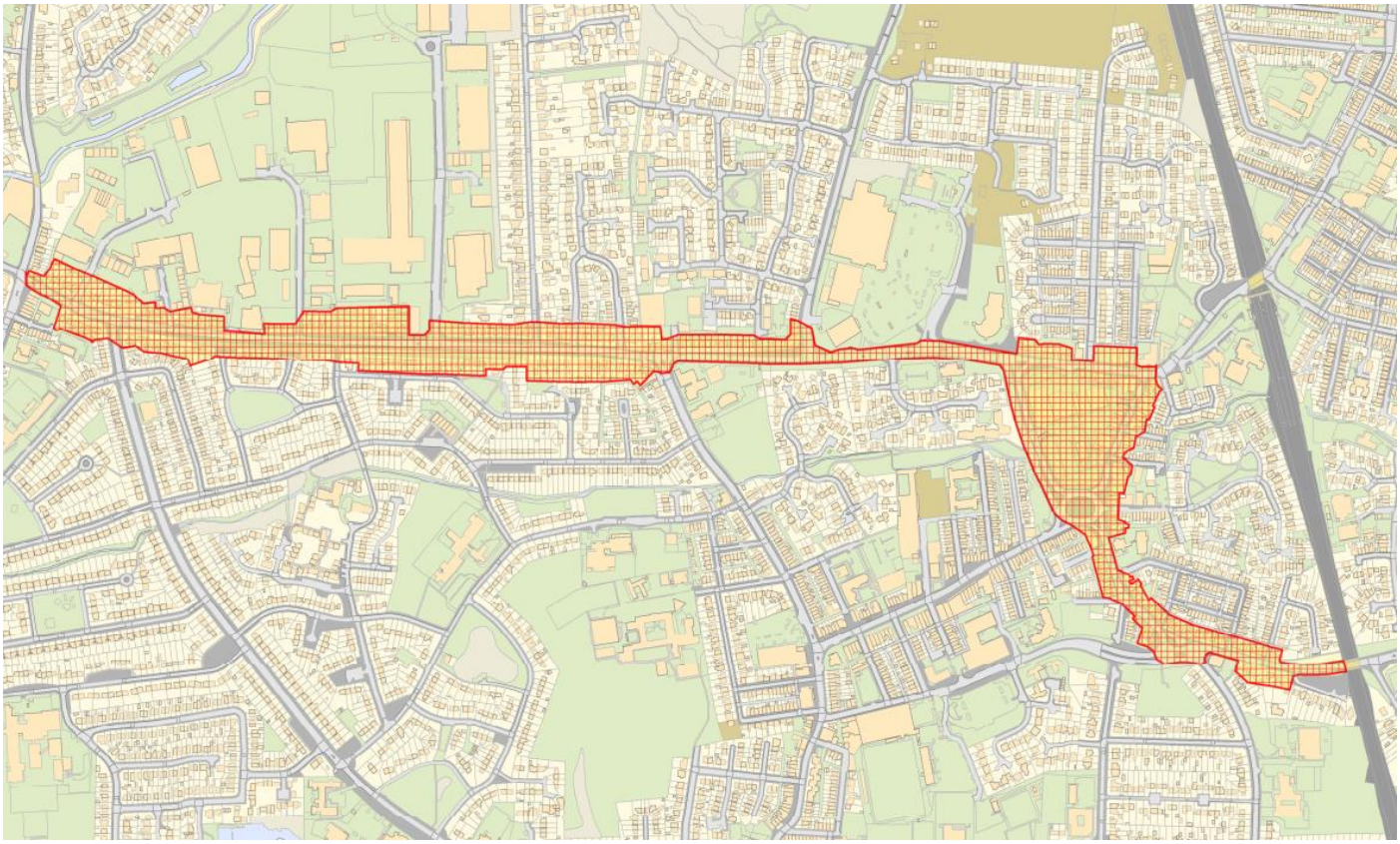
AQMA 3, Lostock Hall



AQMA 4, Bamber Bridge



AQMA 5, Leyland



Appendix B – 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