

AIR QUALITY STRATEGY

FOR THE BRADFORD DISTRICT

This document is Bradford Metropolitan District Local Air Quality Strategy which has been developed as a proactive measure to help improve and maintain air quality in the district.

The aim of the Bradford Air Quality Strategy

'To provide the framework with which to enable the improvement of air quality in Bradford, in line with both National Air Quality Standards and the principles of best practice'

What is the Local Air Quality Strategy?

The Council and its partners are committed to improving the environment as a top priority. The Sustainable Community Strategy for the District sets out how this will be achieved, air quality is identified as a vital part of this. The Local Air Quality Strategy sets out the Council's overall vision for managing and improving air quality together with the outcomes; objectives and priorities that will help turn the vision into reality.

Why do we need a Local Air Quality Strategy?

The Air Quality Strategy is identified in the Bradford Air Quality Action Plan (AQAP) as key to improving local air quality.

Poor air quality is linked to respiratory illness, heart disease and asthma. The 2007 UK Air Quality Strategy (AQS) estimated that based on air quality data from 2005, manmade PM_{2.5} alone reduced the average life expectancy of each and every person living in the UK by 7-8 months (rising to a reduction of 8 or 9 years in pollution hotspots) and imposed an annual cost of £18 billion (ref Air Quality Action in a changing climate DEFRA March 2010). Air quality problems kill 50,000 people per year in the UK, this is more than obesity, passive smoking or traffic accidents and the government's Environmental Audit Committee has called for the UK government to make air quality a much higher priority (March 2010).

Air pollutants are closely linked with the emissions of other gases that cause serious harm to ecosystems and the environment, such as climate change gases. The reduction of air pollutants will be beneficial in terms of human health and will also benefit the wider environment.

This Air Quality Strategy will deliver a number of benefits. It will:

- Emphasise the Council's role in delivering cleaner air.
- Help us to tackle air quality in a holistic way.
- Help us to build partnerships with business and the community and with other authorities to achieve cleaner air within Bradford.
- Provide a common theme for the use of Council services and partners.
- Build for the future by enabling economic regeneration to take place which recognises air quality as a major consideration at an early stage.

- Highlight the reasons for tackling poor air quality i.e. the link with quality of life, health and climate change.
- Raise the profile of air quality within the district.
- Forge links with other initiatives and plans.

The Policy context

Under the Local Air Quality Management (LAQM) framework set by central Government, local authorities must regularly review and assess air quality within their areas and designate Air Quality Management Areas (AQMAs) where UK objectives are currently not being met. Information provided in reports produced through the LAQM process has contributed to the policy development process for this strategy. Where a council has declared an AQMA, an Air Quality Action Plan (AQAP) is required to be produced that works towards achievement of the air quality objectives.

In Bradford we have one Air Quality Action Plan addressing the actions needed in all four of the Air Quality Management Areas. The Action Plan compliments this strategy.

This strategy engages with commitments made in the following plans and strategies:

- Bradford Air Quality Action Plan,
- West Yorkshire Local Transport Plan
- Bradford District Local Area Agreement
- The Big Plan, Bradford's Sustainable Community Strategy
- Bradford District Climate Change Strategy and Action Plan
- Bradford Waste
- Air Quality Strategy for England, Scotland, Wales and Northern Ireland
- Bradford Contaminated Land Strategy

The policies in this Strategy are consistent with those Plans and Strategies and sets out the framework through which we will work collaboratively to address air pollution issues and secure sustainable improvements in local air quality.

Background - Local Air Quality in Context

The Environment Act 1995 laid the foundations for a nationwide system of Local Air Quality Management (LAQM) in which local authorities are required to review and assess the air quality in their areas, and to take action where the air quality objectives are at risk of being breached. This system is an integral part of delivering the air quality objectives set out in the Air Quality Strategy for England, Scotland, Wales and Northern Ireland.

Pollutants

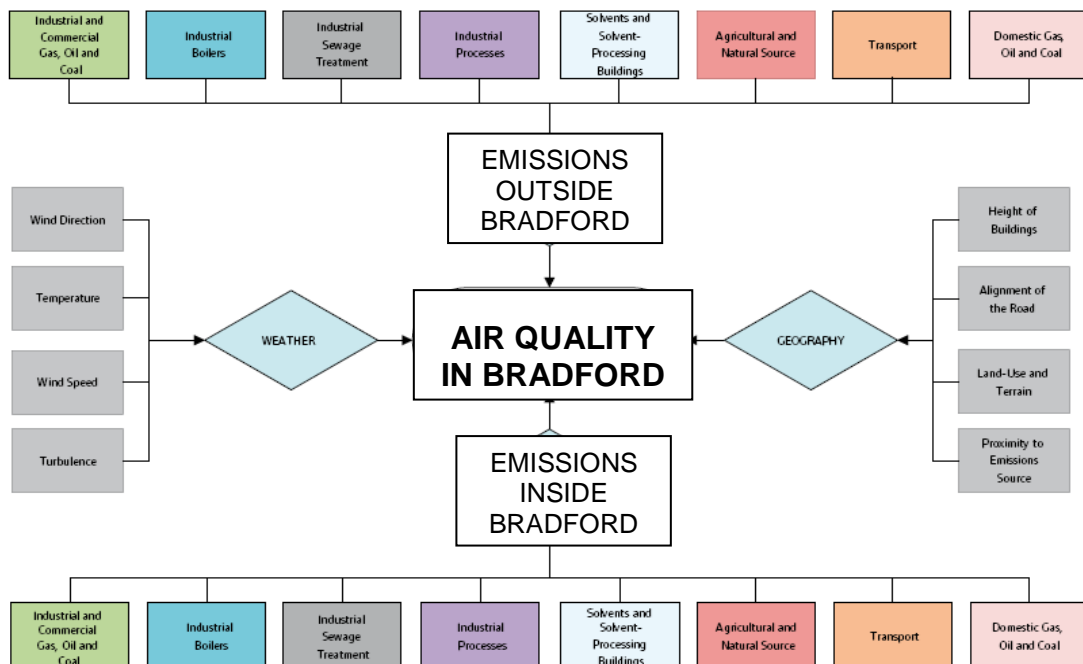
The pollutants which the local authority is required to consider under the air quality legislative framework are:

- Nitrogen dioxide
- PM₁₀ particulate
- Carbon monoxide
- Benzene PAH
- 1,3-Butadiene
- Lead
- Sulphur dioxide

(See appendix 2 for an explanation of these substances and their effects)

Sources

Sources of air pollution in Bradford are best represented in the following diagram;



Monitoring Air Quality in Bradford

Currently, air quality monitoring is carried out in Bradford on a routine basis to monitor oxides of nitrogen (NO_x and NO₂), sulphur dioxide (SO₂) and particulate matter (PM₁₀). All other air quality pollutants have been reviewed and assessed within Bradford and it has been found not necessary (or cost effective) to actively monitor for them. This work has been carried out with strict reference to detailed Government technical guidance (Technical Guidance LAQM.TG(09)).

Review and Assessment Findings

Previous work by the Council's Environmental Health Service identified four areas in the district that are not achieving the UK air quality objective for nitrogen dioxide (annual mean concentration of 40µg/m³ in relevant locations). Exhaust emissions from traffic on the roads within these areas is largely responsible. Heavy-duty vehicles (freight and buses) in particular contribute significantly to the emissions, although the number of these types of vehicle passing through the areas is relatively small.

The Council has a statutory duty to designate these locations as Air Quality Management Areas (AQMAs), which it did in September 2006, and to develop an action plan setting out the measures that it will adopt to make progress towards the achievement of the air quality objectives. The Air Quality Action Plan takes account of the contributory factors leading to the exceedance of the air quality objective and any limitations in Bradford Council's ability to act on this issue.

The four AQMAs are located in specific parts of the following roads;

- Mayo Avenue, Bradford,
- Thornton Road, Bradford
- Manningham Lane, Bradford
- Shipley Airedale Road, Bradford

See Appendix 1 for maps of the AQMAs.

The Council's Environmental Health Service has a rolling programme of further work in other parts of the district (as set out in the Government guidance). Air Quality must be reviewed annually and work is ongoing to identify any new areas of exceedance. This may include changes due to new developments, changes in the technical guidance or legislation and areas missed in previous rounds of review and assessment.

Air Quality Action Plan

This Council has produced an air quality Action Plan in response to the designation of the four air quality management areas.

The Action Plan defines 'how the Local Authority will use its powers and work in conjunction with other agencies in pursuit of the air quality objectives'.

In summary:

- Air quality problems in the Bradford district are mainly attributable to transport.
- The action plan has considered **all** available options for improving air quality within the AQMAs.
- All short-term and site specific options (e.g. alterations to traffic lights, low emission zones, etc.) were rejected. The plan includes reasoning for rejection of these options. It should be noted that some of options may have to be revisited during implementation of the Air Quality Strategy in order meet the Air Quality Regulations.
- Actions have been identified that aim to improve air quality across the district, including the AQMAs.
- The actions are mainly long term options that rely primarily on regional or national measures (e.g. introduction of new EURO standards for vehicle emissions) to **improve** air quality.

With significant development and house-building likely to be undertaken in the coming years in the District, the action plan also focuses on avoiding worsening problems. This would be a risk if air quality were not considered in future transport and development proposals. The action plan will ensure that the impact of new development on air quality is considered in a structured and well-managed fashion.

Failure to Meet the Air Quality Objectives

In common with several other European countries the UK is struggling to meet the standards for air quality set by the European Union. The UK has recently been turned down in respect of a time extension to meet the directive and has subsequently received a second and final written warning from the European Commission in respect of poor air quality performance (summer 2010). The warning requests that the UK develops a realistic strategy to meet the air quality objectives.

It is expected that the case will soon be referred to the European Court of Justice and the UK could be subsequently fined approximately £300 million or receive 'unlimited' fines. The new Localism Bill currently being put before Parliament leaves specific provision for the 'passing on' of fines seen to be as a result of the actions or inactions of the Local Authority.

Another emerging critical factor is the proposed Public Health Bill which suggests air quality as one of the 6 primary indicators in the Domain One set of indicators. This not only demonstrates the importance of air quality in terms of public health but also indicates that in the future this could be an outcome on which the performance of the City is measured.

In conclusion, a failure to meet the air quality objectives will have detrimental consequences for public health and the environment and it may also have significant financial consequences for the UK and possibly for Bradford Council. For these reasons it is imperative that all efforts are made to make the necessary changes to existing policy and priorities to improve our local air quality.

Strategic Action Areas

This strategy aims to pull together all the strands available to the authority to provide a way forward to tackle air quality. The following strategic areas have been identified.

Development Control

- Ensure all alternative modes of transport are considered for any new development likely to impact adversely on air quality and to encourage measurements of impacts.
- Ensure air quality considerations are incorporated as a key issue in the Local Development Framework.
- Encourage new and existing major employers (over 250) to introduce green commuter plans.
- Ensure new planning applications are checked against sustainability criteria.
- Ensure all new developments which may have a negative impact on air quality employ suitable measures to prevent deterioration in the air quality.
- Bradford Council is currently examining the possibility of adopting an overarching Low Emission Strategy Supplementary Planning Document (LES SPD). For further information regarding the issues involved please see Appendix 3.

Transport

Bradford Council is working with partners to reduce congestion and its impacts on air quality

- Integration of our AQAP into the West Yorkshire Local Transport Plan (LTP)
- Formulation of a Freight Strategy working with LTP partners to achieve a reduction in emissions from freight within the Bradford Urban Area.
- Encourage the development of integrated pedestrian, bus, rail and taxi routes.
- Travel planning - Reduce car usage within the personal, institutional and commercial sectors by up to 10%

- Introduce eco-driving in all areas of the Council fleet and encourage partners to do so.
- Increase the use of cleaner fuels in our fleet.
- Seek to achieve an increase cycle usage.
- Seek to achieve an increase in walking.
- Provide information to businesses on the use of greener fuels.
- Bradford MDC is an active member of the West Yorkshire Transport Emissions Group (WYTEG) which seeks to achieve emission reduction across all five West Yorkshire Authorities.
 - WYTEG contains expertise from Environmental Health, sustainability and transport planning, (which has specialist knowledge in transport related air quality), climate change mitigation and adaptation, and environmental noise. Members from all 5 West Yorkshire Districts, the Highways Agency and the Institute of Transport Studies (Leeds University) normally attend the bi-monthly meetings.
 - WYTEG are currently working on inclusion of emission reduction strategies and air quality action plans within the latest version of the Local Transport Plan LTP3.

Government & Public Sector

Public Sector Procurement

Public sector procurement represents an opportunity to reduce emissions in Bradford and promote best practice with respect to Low Emission Technologies.

- Best Practice Guidance on low emission vehicle procurement is currently being developed by Government. Bradford is working with partners to influence and support this.
- Bradford expect to adopt and support the Best Practice Guidance when it is published, it is anticipated this will consider 'Green' performance and whole life cost as part of the evaluation criteria, where award is based on "Most Economically Advantageous Tender" as opposed to lowest price.
- Fleet procurement will (within best value) look to make improvements for both Air Quality and Climate Change by having regard to the life cycle emissions of different vehicle technologies and fuels. (See Appendix 4). This will include a commitment to undertake a detailed cost benefit analysis of Low Emission Vehicles (LEVs) every two years. This assessment will include;

- A reassessment of previous LEV technology that has previously been deemed 'unsuitable' for Council use.
 - Any new vehicles and technology that have come onto the market since the previous study and an assessment of whether such vehicles would be 'fit for purpose' within the Council fleet. Where LEVs are identified as being 'fit for purpose' there will be ;
 - Life cycle analysis of current vehicle use in comparison to LEVs and the pros and cons of each option in terms of suitability, emissions (CO₂, NO_x and PM) and costs.
- Bradford is currently examining procurement policies in order to reduce emissions from goods and services as a whole.

Waste Management

Waste management has the potential to reduce overall emissions of climate change gases and air quality pollutants simultaneously. Whilst our first priority must always be waste reduction, the residual energy contained in our remaining waste must be actively utilised using the latest technologies. There is significant potential for use of alternative vehicle fuels within the waste industry, given the close proximity of waste companies to waste products which can be used to produce fuel

To this end Bradford Council will look favourably on sustainable waste management options which reutilise energy from waste, particularly those which also have the potential to improve local air quality by replacing the use of fossil fuels (e.g. the local production and use of bio-methane fuels).

Other Public Sector Measures

In addition Bradford MDC will;

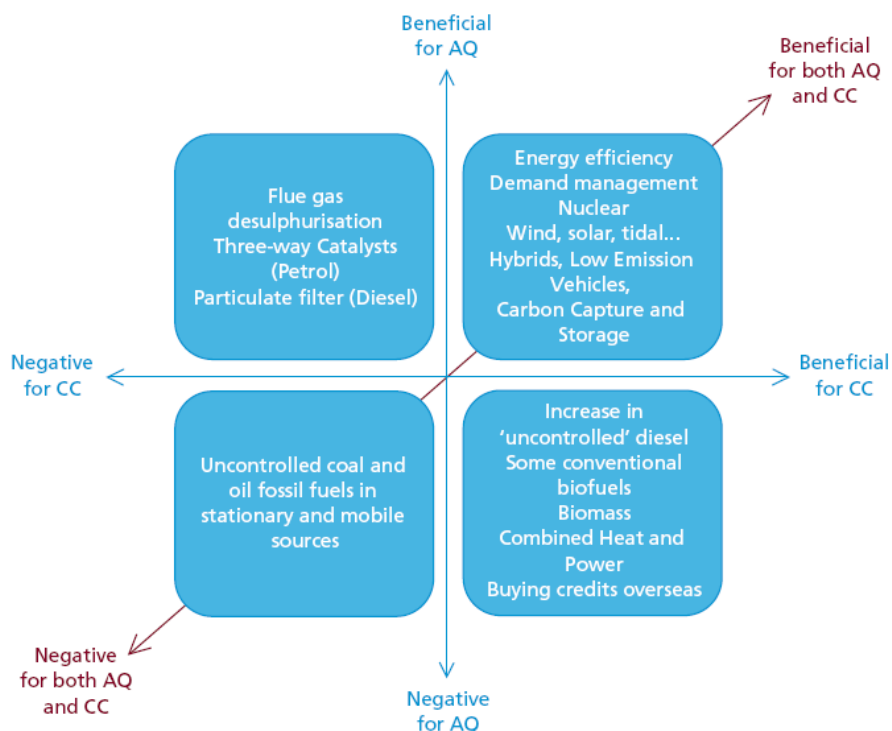
- Respond to relevant consultation documents that affect air quality in Bradford.
- Adopt and implement any new air quality control legislation or relevant initiatives to improve air quality in compliance with Government timescales.
- Give support to any national campaigns to raise awareness of air quality matters.
- Review and consult on air quality in the district in line with statutory requirements.
- Continue a close working relationship with other public sector regulators to ensure improvements in local air quality.
- Ensure that appropriate enforcement is taken to prevent deterioration of the district's air quality in line with national guidance, legislation and the Council's enforcement policy

Energy Efficiency And Climate Change

Air pollution and climate change both arise from the emission to atmosphere of the products of combustion. They are intrinsically linked. National policy advises local authorities to ‘bear in mind the synergies between air quality and climate change, and the added benefits to the local, regional and global environment of having an integrated approach to tackling both climate change and air quality goals.’

To this end there has been a commitment made between the ECCU (Energy and Climate Change Unit) and officers working on air quality to ensure that emission reduction strategies employed by Bradford MDC are carried out with regard to the guidance illustrated in the following diagram; (Air Pollution: Action In a Changing Climate DEFRA March 2010). This undertaking will ensure that actions taken are beneficial in terms of Air Quality and Climate Change simultaneously;

Policy map displaying air quality/climate change interactions



Air Quality Officers will contribute to the development of the Climate Change Strategy for the District to ensure that the two strategies compliment each other and produce tangible benefits for both Climate Change and Air Quality.

Industry & Commerce

Bradford MDC will:

- Enforce legislation for relevant process releases using the Environmental Permitting regime
- Assist and advise businesses on all current air quality and emission reduction issues
- Encourage sustainable activities and encourage the adoption of recognised environmental accreditation systems.
- Encourage participation in waste minimisation schemes.

Domestic Sector

Bradford MDC will:

- Assist, advise and educate householders with regard to smoke control, solid fuel usage and appliance maintenance.
- Liaise with public and private sector Landlords and registered Housing Associations with regard to smoke control, solid fuel usage and appliance maintenance.
- Investigate and, where appropriate, enforce legislation which involves air quality issues e.g. breaches of smoke control orders

Health & Education

- Forge a strong working partnership with the Bradford Primary Care Trust (PCT) and the Strategic Partnership to secure collective commitment to delivery of this strategy.
- Engage with the public health professionals of the PCT to ensure that the local health improvement programme commits to actions to improve local air quality.
- Create a consultative mechanism with the PCT to offer public advice concerning any air pollution episodes.
- Provide annual air quality reports for public information via Bradford Council's web site.
- Promote awareness of DEFRA air pollution Regional Information Bulletins.

- Include air quality awareness information in Health Education Programmes.
- Promote air quality training through schools and colleges.
- Encourage local businesses to minimise emissions to atmosphere.

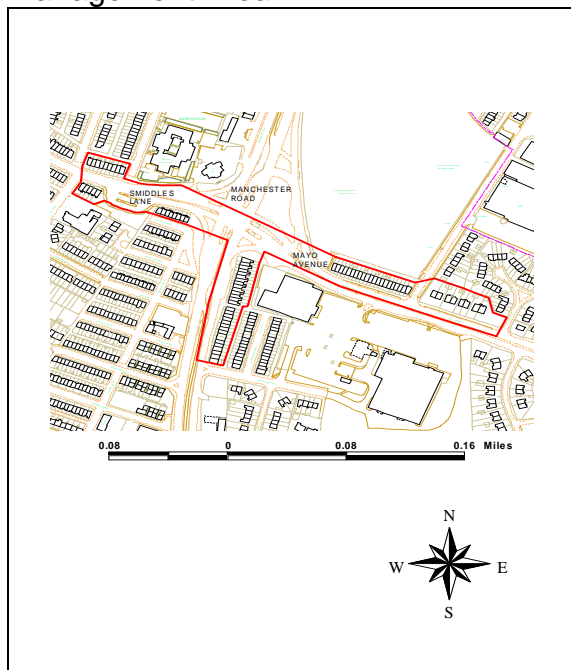
References

- Air Quality Strategy for England, Scotland, Wales and Northern Ireland (DEFRA 2007)
- Local Air Quality Management: Policy Guidance. (DEFRA 2003)
- The Integration of Air Quality Management with Climate Change (EMAQ 2007)
- Air Quality Action Plans (NSCA 2000)
- Local Air Pollution Control (CIEH 2000)
- Air Pollution in The UK 2005 (NETCEN report for DEFRA 2006)
- Air Quality and Climate Change: A UK Perspective (DEFRA 2005)
- Air Pollution: Action in a Changing Climate (DEFRA 2010)
- Low Emissions Strategies-using the planning system to reduce transport emissions, Good Practice Guidance (DEFRA 2010)

Appendix 1:

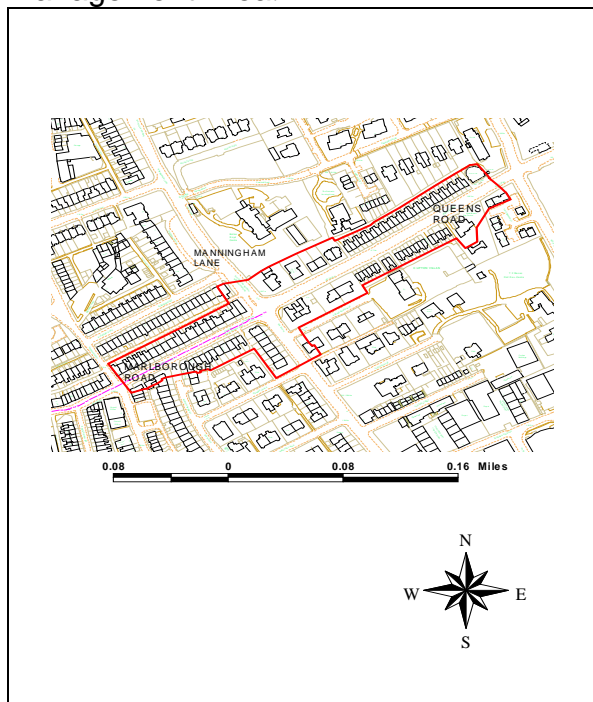
The City of Bradford Metropolitan District Council Air Quality Management Order (No.1), 2006

The Area surrounded by the red line has been designated as an Air Quality Management Area.



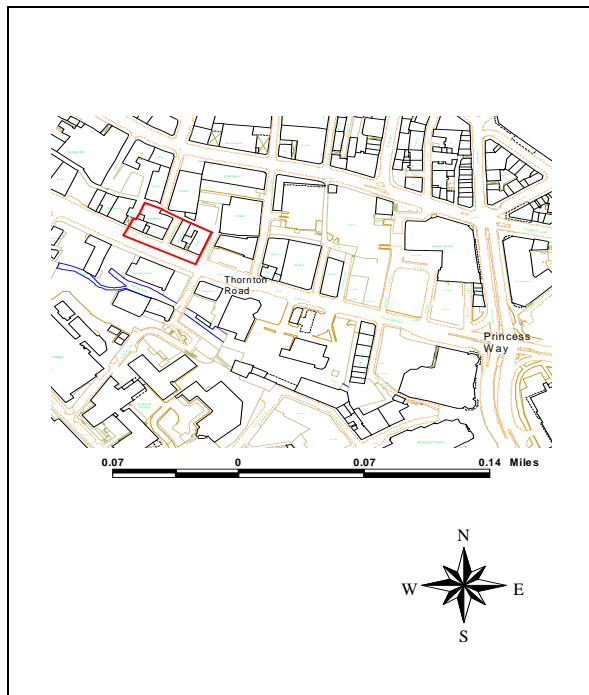
The City of Bradford Metropolitan District Council Air Quality Management Order (No.2), 2006

The Area surrounded by the red line has been designated as an Air Quality Management Area.



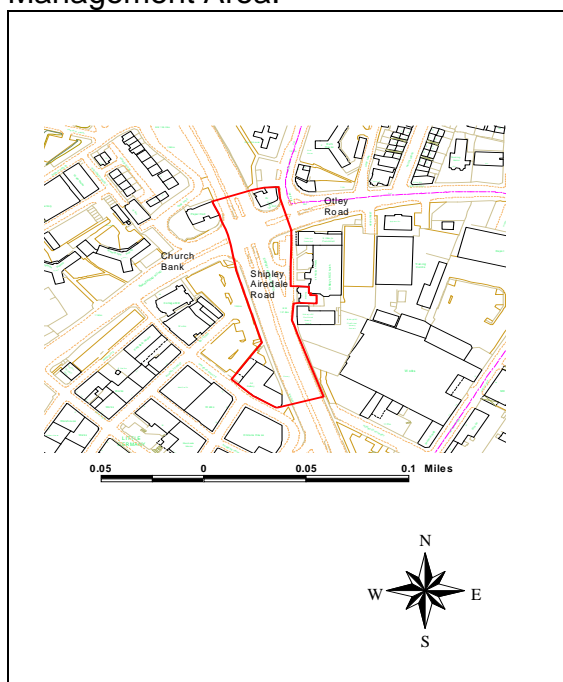
The City of Bradford Metropolitan District Council Air Quality Management Order (No.3), 2006

The Area surrounded by the red line has been designated as an Air Quality Management Area.



The City of Bradford Metropolitan District Council Air Quality Management Order (No.4), 2006

The Area surrounded by the red line has been designated as an Air Quality Management Area.



Appendix 2:

Major air pollutants and their effects

Nitrogen dioxide (NO₂)

The principal source of NO₂ is the internal combustion engine. It is produced during the combustion process when nitrogen in the air reacts with oxygen at high temperatures. It is a reddish brown pungent smelling gas which is highly toxic. When breathed in it attacks and damages the mucous lining of the lungs

PM₁₀ particulates

Particulates are fine solid particles suspended in the air. Particulate matter (PM) is usually classified by the size of the particles the maximum size of the particles is placed after the initials e.g. PM₁₀. Those smaller than 10 micrometres (µm) are capable of being carried deep into the lungs.

Benzene

A hydrocarbon compound widely used in the chemical industry, and also a constituent of petrol. It is highly toxic and also carcinogenic.

1, 3-Butadiene

Produced mainly from the combustion of petrol but also from the production of synthetic rubber for tyres. It is carcinogenic.

Lead

Emitted from the combustion of coal. Affects kidneys, digestive tract, joints and the nervous system. Affects intellectual development in children.

Sulphur dioxide

Produced by the combustion of fuels containing sulphur, such as coal and heavy oils. Causes lung damage. It is the main constituent of "acid rain" which damages soils, plant life and water systems.

Carbon monoxide

Produced by the incomplete combustion of fuels. The main source is road transport but combustion of domestic and industrial fuels also make a significant contribution. Reduces the blood's ability to carry oxygen to brain and body tissues

Ozone

Is not emitted by any human source. It is produced when other pollutants, primarily oxides of nitrogen, react together in strong sunlight. Irritates eyes and nose, may lead to airway damage and reduced lung function. Also causes damage to plant life and many building materials.

Carbon dioxide

Emitted naturally by plants and animals and by the action of rain on limestone. Also produced by the complete combustion of carbonaceous fuels. It is the major "greenhouse gas".

Polycyclic aromatic hydrocarbons (PAH)

The main sources are domestic coal and wood burning fires, accidental fires, bonfires and road transport. Exposure leads to an increased risk of lung cancer.

Methane

Occurs as a result of bacteriological decomposition. Major sources are landfill sites and agriculture. Is often collected and used as a fuel. A significant greenhouse gas with a greenhouse factor approximately 23 times that of carbon dioxide

Hydrogen sulphide

A toxic gas with the smell of rotten eggs produced by anaerobic decomposition. Associated with landfill sites and sewage treatment.

Appendix 3

Development Scheme Low Emission Strategy LES SPD

Bradford Council will consider taking forward the development of a LES SPD either as an individual council or preferably as part of a regional group initiative lead by the LES partnership.

PRINCIPLES OF IMPLEMENTING A DEVELOPMENT SCHEME LOW EMISSION STRATEGY

- Integrated, evidence based approach to residual road transport emission reduction via the simultaneous assessment and mitigation of both regulated air quality pollutants and Greenhouse Gases
- Improve residual road transport emissions via the accelerated uptake of cleaner fuels and technologies
- Recognition of road transport emissions creep, due to the aggregated impact of development schemes, and the need to improve assessment methods for establishing impact and options for mitigation
- Recognition of the incremental benefits of individual development schemes and residual road transport emissions improvement, aggregated across an area
- Pro-active, integrated approach to land-use planning with other key, local authority low emission strategies to reduce road transport emissions e.g. transport plans, community/social fleet emission improvement strategies, economic development and procurement strategies
- Achieve development scheme acceptability through the implementation of reasonably practicable on and off-site low emission mitigation measures, including the consideration of compensatory damage costs (off-set tariff), required by a combination of planning conditions and obligations
- Consideration of the use of Community Infrastructure Levy, where adopted, or in situations where it is likely to be triggered, for the implementation of low emission road transport infrastructure

Appendix 4

Life Cycle Emissions Comparison of Vehicle Technology and Fuels

