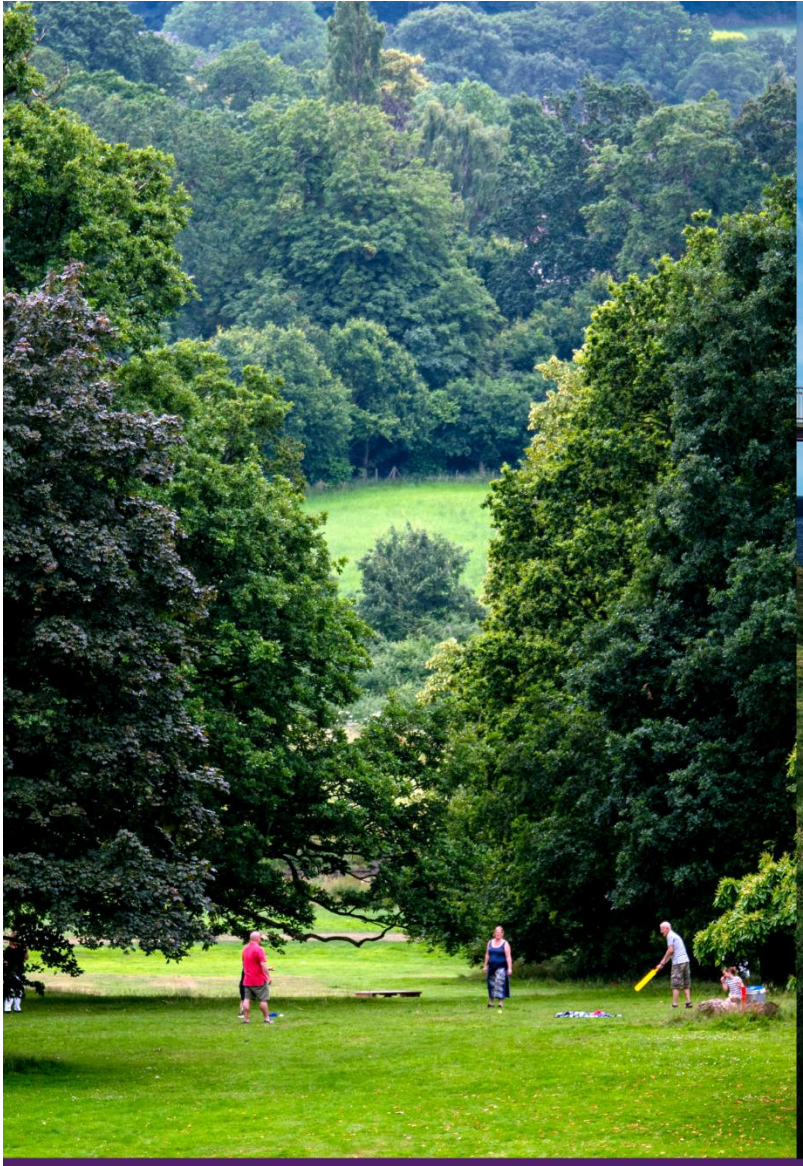

Barnsley Council Air Quality Action Plan 2025

In fulfilment of part IV of the Environment Act 1995

Barnsley 2030

BARNSLEY
Metropolitan Borough Council

Local Authority Officer	Pollution Control
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Foreword

We continue to be proud of our borough, working towards our 2030 visions, Making Barnsley the Place of Possibilities.

In September 2019, Barnsley Council declared a Climate Emergency and in October 2020 resolved to set pragmatic targets of becoming a net zero council by 2040 and through partnership working and innovation we committed to supporting our Borough to become net zero by 2045. We believe that everyone has a fundamental right to be able to breathe clean air and getting to the root cause of tackling air pollution is one of the key actions to achieve these ambitions; this Air Quality Action Plan sets out how we will help to achieve this.

Emissions come from various sources such as transportation, the production of electricity and industrial processes which all significantly contribute to global warming. Such emissions accelerate the natural rate of global warming, which is altering the weather patterns and having an impact on ecosystems. Everything is connected; an increase in extreme temperatures can lead to a loss of our natural environment and the animals and ecosystems that rely on it. Too much carbon can starve plants as they need other vital nutrients such as zinc and sodium to thrive. The life cycles of our plants and insect population rely on timely seasonal change and conditions, as otherwise it will cause eco-systems to collapse and in some cases be displaced.

There is a significant body of evidence also that demonstrates that air pollution adversely affects the health and wellbeing of society and places financial strain on systems such as the NHS.

We recognise the impact poor air quality has on across the economy, society in terms of wellbeing and the environment. As part of the South Yorkshire Mayoral Combined Authority (SYMCA), we are keen to grow our economy to create more jobs and housing whilst also protecting our natural environment.

Our rich industrial heritage complements the stunning scenery and countryside that Barnsley offers and this helps us to attract inward investment and tourism.

We strive to become one of the most sustainable Borough's in the Yorkshire and Humber and this is reflected in our commitment to continue to reducing emissions, Examples of progress so far include:

- Through the Public Sector decarbonisation scheme we retrofitted our highest usage council buildings and some of our schools to use low or zero emission equipment such as air source heat pumps and photovoltaics.

- Through our Energise Barnsley partnership we are installing solar photovoltaics on up to 1000 council properties and have secured community bonds and pots to invest back into opportunities to support the local communities.

- We have replaced polluting vehicles from our council fleet with electric vehicles and as part of our procurement we also ensure that those that work with us are fully committed to reducing their emissions.

- We have rolled out a significant program of off-street electric vehicle charging points, including making provision to provide EV charging points for residents without access to off-street parking. All major BMBC carparks now have EV charging points and priority parking.

- Working with SYMCA we now have a ZEBra bus on one of our main corridors through the borough. We will continue to get more electric buses on our routes.

- We have delivered over 10km of new active travel routes and will continue to promote walking, cycling and more sustainable modes of transport and will work closely with SYMCA to ensure the suitable provision of bus and rail.

This plan provides the means of *how* we intend to achieve our aim and contains actions that will reduce polluting emissions and improve air quality. These vary from ensuring that new development does not unnecessarily worsen air quality to working with businesses to reduce emissions, promoting active travel, and the uptake of low-emission vehicles, amongst others.

The consultation on this plan was carried out from December 2025 to February 2025. The xx proposed measures within the plan were supported / broadly supported by

consultees, including residents, community groups, Youth Council, volunteering groups and SYMCA. These measures will be enacted and developed further over the 5-year period of the action plan. This is a working document, and updates will be available (at a frequency tbc) in the Barnsley Council Air Quality Annual Status Report .

We are proud of our air quality success – smoke control orders cover the entire borough. Two of our air quality management areas have already been revoked, whilst schemes such as South Yorkshire Care4Air and the ECO Stars heavy duty fleet recognition scheme which was developed in Barnsley, have received national recognition. The Eco Stars scheme has been such a success, the Transport Research Laboratory (TRL) have acquired the Intellectual Property Rights and taken this over to progress this even further.

However, there is a lot more to do. We need to ensure that we meet legal air quality standards in the shortest possible time while continually driving down emissions to further protect the public. This needs to be done systemically and collaboratively to ensure that we are not significantly having an adverse effect on other areas.

Many large companies now have obligations to report on environmental, social and governance measures and so it is important that we take a proactive approach to improving air quality as this will not only support with investment efficiency and a thriving natural environment, it will improve the health & wellbeing of people.

We have expanded the range of pollutants that are monitored in the Borough to include particles with a diameter of 2.5 microns or less in diameter. Due to it being one of the more dangerous sizes of particulate matter and this supports our commitment to improving the health and wellbeing of the borough.

Through our existing partnerships and community infrastructure, we aim to empower and support people to take action to look after their communities, an example of this is the Affordable Warmth scheme, as well as providing advice on how to reduce exposure to poor air quality while going about daily life. Together we can take collective action and make a significant difference.

Everyone can play a role in improving air quality in Barnsley. Where systems permit, we can cycle, walk or use public transport more often and especially over short distances. We can consider switching for gas boilers to heat pumps and other renewable forms of energy

generation and switch to zero emission vehicles.

With the support of everyone, we can contribute to making Barnsley the Place of Possibilities for now and our future generations, our places and the planet.

We all have roles to play in creating a cleaner and healthier Barnsley for all who live, work, or visit. This plan is an important step in achieving these aims.

Cllr Wendy Cain, Cabinet Spokesperson for Public Health and Communities

Executive Summary

This Air Quality Action Plan (AQAP) has been produced as part of our statutory duties required by the Local Air Quality Management framework. It outlines the action we will take to improve air quality in Barnsley between 2025 and 2030. It contains a number of actions designed to improve air quality in our air quality management areas and in the Borough as a whole.

The Climate Change Act 2008 (as amended) set a legally binding target on the UK to reduce its GHG emissions by 100% compared to 1990 levels.

This action plan replaces the previous action plan for the period 2017 to 2022. Projects delivered from the previous action plan and in addition to support our climate change objectives include:

- Delivery of a Quality Bus Corridor traffic management scheme resulting in the revocation of an air quality management area (AQMA)The delivery of several. Active Travel schemes, aimed to encourage people to use alternative modes of transport instead of the private car
- Development of the Barnsley MBC Air Quality and Emissions Good Practice Planning Guidance, in order to mitigate against the air quality impact of future development in the borough.
- Working with the South Yorkshire Mayoral Combined Authority (SYMCA) to introduce additional Zero Emission Buses (ZEBra) on routes in Barnsley
- Implementation of intelligent traffic management systems to ease traffic flow and congestions, and hence reduce emissions
- Significant progress in the way of civic leadership, engagement, climate adaptation and mitigation, governance, delivery, Greenhouse Gas reporting and a significant range of programs covering:
    - Energy efficiency & renewable energy
    - Sustainable transport & active travel
    - Highway improvements & maintenance
    - Resource efficiency
    - Decentralised heating

- Protections and Improvement to the natural environment
- Environmental Awareness Training
- Social Prescribing & other initiatives
- Communications
- Procurement & Social Value

Further detailed information can be found in appendix H, attached to this report.

Poor air quality is a significant public health issue. There is strong evidence that air pollution causes the development of coronary heart disease, stroke, respiratory disease, and lung cancer, exacerbates asthma and has a contributory role in mortality (Air Pollution Evidence Review from Public Health England, 2019 https://www.gov.uk/government/publications/improving-outdoor-air-quality-and-health-review-of-interventions). 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[2,3].

The mortality burden of the air pollution mixture (based on both particulate matter (PM2.5) and nitrogen dioxide (NO2)) in the UK, is equivalent to 29,000 to 43,000 deaths at typical ages. Between 2017 and 2025, the total cost to the NHS and social care of air pollution in England for where there is more robust evidence for an association, is estimated to be £1.60 billion for PM2.5 and NO2 combined (£1.54 billion for PM2.5 and £60.81 million for NO2) T. Barnsley Council is committed to reducing the exposure of people in the Barnsley borough to poor air quality in order to improve health.

Barnsley's air quality issues are typical of an urban location, with emissions from road transport being a major source of air pollution, and the underlying reason for declaration of all our air quality management areas. Emissions from industrial and domestic sources are still of importance and continue to be subject to the relevant regulation, where appropriate.

Previous assessment of the Borough's air quality revealed the breaching (exceedance) of the annual average objective (standard) for nitrogen dioxide gas (NO_2) at receptors (mainly houses). These areas are close to several arterial roads and junctions near to Barnsley town center, and close to the M1 motorway. Nitrogen dioxide is strongly associated with traffic emissions. This polluting gas is associated with respiratory symptoms in particular[5].

We are developing actions under five key themes, which have been developed and agreed by the Barnsley Council Air Quality Action Plan Steering Group, chaired by our Service Director of Public Health and Regulation. These are:

Reduce Traffic Behavioral

Change Increase efficiency

Regulation

Improve our green

spaces

Underlying these key themes are aims which provide the focus and commitment for each of the themes, ensuring that all stakeholders understand the overall aims of this Plan.

5 Defra, February 2015 – Getting to grips with air pollution – the latest evidence and techniques – A briefing for Directors of Public Health

Whilst we understand that national actions and legislation are expected to deliver road traffic emission reduction, primarily our priorities will be to compliment these national actions with local air quality improvement, particularly at local residual air pollution hot spots, such as our AQMAs.

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

Barnsley has several AQMAs, and this plan includes actions for all of these, rather than producing individual action plans for each AQMA.

Responsibilities and Commitment

This AQAP was prepared by the Regulatory Services department of Barnsley Council with the support and agreement of the following officers and departments:

Regulatory Services	
Strategic Transport inc Sustainability & Climate Change	
Planning	
Public Health	

This AQAP has been approved by members of Air Quality Steering Group:

This commitment to local air quality improvement has been further demonstrated by the Council developing a new Corporate Plan performance indicator for air quality. This is *CO25 Air quality nitrogen dioxide levels – micrograms per cubic meter under Outcome 11 – Strong and Resilient Communities, Protecting the borough for future generations (target date for achievement being 2020)*. The target of 40 micrograms per cubic meter relates to the annual average European Limit Value, the standard that is

being breached within our AQMAs, and the standard that the actions within the action plan are attempting to meet.

Furthermore, actions which will impact on Highways England's' road network (especially the M1 motorway in the Barnsley borough and the A616 in Langsett where we have declared AQMAs), will receive sign-off from Highways England officers, following joint working between the Council and Highways England in developing actions, and subsequent consultation.

The below table details the actions the Council wishes to pursue, subject to securing appropriate funding, and securing stakeholder approval.

No.	Proposed Action	Effectiveness
1	Congestion management	High
2	SYMCA Bus Reform	High
3	Encourage uptake of lower emission vehicles and alternative fuels (EVs, CNG, H_2)	High
4	Langsett	High
5	Planning applications – air quality assessment and mitigation	High
6	Procurement	High
7	Control over emissions from Part B and A2 processes, and act as consultees for Part A1 processes	High
8	Enforcement of the Clean Air with regards to industrial smoke	High
9	Enforcement of the Clean Air with regards to domestic smoke control	High
10	Investigation of nuisance complaints, including appropriate action to resolve the problem	High
11	BMBC fleet improvement	High
12	Priority parking for LEVs	High
13	Freight and Delivery Management	High
14	SJC - Work with organisations to support them to reduce their carbon emissions through a program of activity involving behavior change and the roll-out of software to help them identify emissions; data and insight would be used to direct investment to areas where an impact can be made to achieve significant reductions	High
15	SJC - Continue to strengthen strategic partnerships such as Energise Barnsley and Barnsley Positive Climate Partnership to deliver interventions at scale to achieve a reduction in emissions	High
16	SJC - Explore the potential of heat networks with anchor institutions and key sites where the public convene to access essential services	High
17	Following Mayor Coppard's initiative to plant over 1.4 million trees, we are committed to plant "our share" of over 246,000 – that's one tree for every person living in Barnsley	
18	Consolidation Centre	Medium
19	Barnsley Intelligent Transport System (MOVA / SCOOT/ Bus	Low

	Virtual Triggers)	
19	Delivery of Active Travel Routes Encourage cycling and walking behavior change	High
20	Delivery of an improved Active Travel Hub – enabling more bikes and EV bikes for hire	low
21	Care4Air	Low
22	Assessment of air quality impact of major traffic schemes	Low
23	Smoky diesel hotline	Low
24	Development of an Active Travel Strategy for developers for the next Local Plan	Low
25	Anti-idling enforcement	Low

These actions have been ranked low, medium or high on their effectiveness to reduce air pollution emissions, based on Government guidance.

This AQAP will be subject to an annual review, appraisal of progress and reporting to the relevant Council Committee. Progress each year will be reported in the Annual Status Reports (ASRs) produced by Barnsley MBC, as part of our statutory Local Air Quality Management duties.

If you have any comments on this AQAP please send them to Pollution Control at:

Regulatory Services
Public Health and Communities
Barnsley MBC
PO Box 634, Barnsley, S70 9GG
Telephone: 01226 773743

Email: pollutioncontrol@barnsley.gov.uk

Table of Contents

List of Tables

List of Figures

Introduction

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

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 Barnsley MBC's air quality ASR (Annual Status Report).

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Summary of Current Air Quality in Barnsley

Please refer to the latest Annual Status Report (ASR) from Barnsley MBC, available at https://www2.barnsley.gov.uk/services/environment-and-planning/pollution/air-quality, which details progress with current actions in improving air quality, along with our latest air quality monitoring data.

Barnsley's air quality issues are typical of an urban location, with emissions from road transport being a major source of air pollution and the underlying reason for declaration of all our air quality management areas. Emissions from industrial and domestic sources are still of importance however and continue to be subject to the relevant regulation, where appropriate.

Previous assessment of the Borough's air quality revealed the breaching (exceedance) of the annual average objective (standard) for nitrogen dioxide gas (NO_2) at receptors (mainly houses). These areas are close to several arterial roads and junctions near to Barnsley town centre, and close to the M1 motorway. Nitrogen dioxide is strongly associated with traffic emissions in particular. This polluting gas is associated with respiratory symptoms[7].

These areas have been declared air quality management areas (AQMAs).

Currently, Barnsley MBC has the following AQMAs, all declared due to exceedance of the annual average objective for nitrogen dioxide gas.

Table 1 - Existing AQMAs in the Barnsley Borough

AQMA No.	Adjacent roads / junctions	Year declared	Estimated no. of domestic dwellings within AQMA
1	M1 Motorway, 100 metres either side of the central reservation within the Barnsley Borough	2001	265
2A	A628 Dodworth Road	2005	285
4	A61 Harborough Hill Road	2008	42
5	Junction of A633 Rotherham Road and Burton Road	2008	16
6	A616 passing through Langsett	2012	7
7	Junction of A61 Sheffield and A6133	2012	2

7 Defra, February 2015 – Getting to grips with air pollution – the latest evidence and techniques – A briefing for Directors of Public Health

	Cemetery Road		

A map showing the location of the current AQMAs is contained within appendix C.

In addition, several road links have been identified by Defra from their national assessment of air quality as exceeding the European Limit value for NO_2. These road links can be viewed at https://uk-air.defra.gov.uk/data/gis-mapping[8]. Some of these road links are found within in borough, with some of these then broadly corresponding to AQMA areas in Barnsley. Local Authorities are required to have due regard for these areas, particularly as the Government's national air quality plans rely heavily on current and proposed local actions (including actions taken from Barnsley MBC air quality action plan) to meet the European Union limit values for NO_2.

Those areas which have been determined as "national exceedance areas" in Barnsley, but have **not** been declared AQMAs by the Council, are primarily the result of the Council, when reviewing these areas, finding no relevant exposure (e.g. affected nearby houses etc.).

[8] Defra, UK Ambient Air Quality Interactive Map

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Barnsley MBC's Air Quality Priorities

1.1 Public Health Context

(CMO report) These issues are important public health issues and are addressed through several key programmes, including promotion of active travel which contributes to reducing emissions, as well as improving physical activity levels. The annual burden of long-term exposure to air pollution in the UK has been estimated to be an effect equivalent to 29,000 to 43,000 deaths at typical ages (UKHSA Chemical Hazards and Poisons Report, 2022).

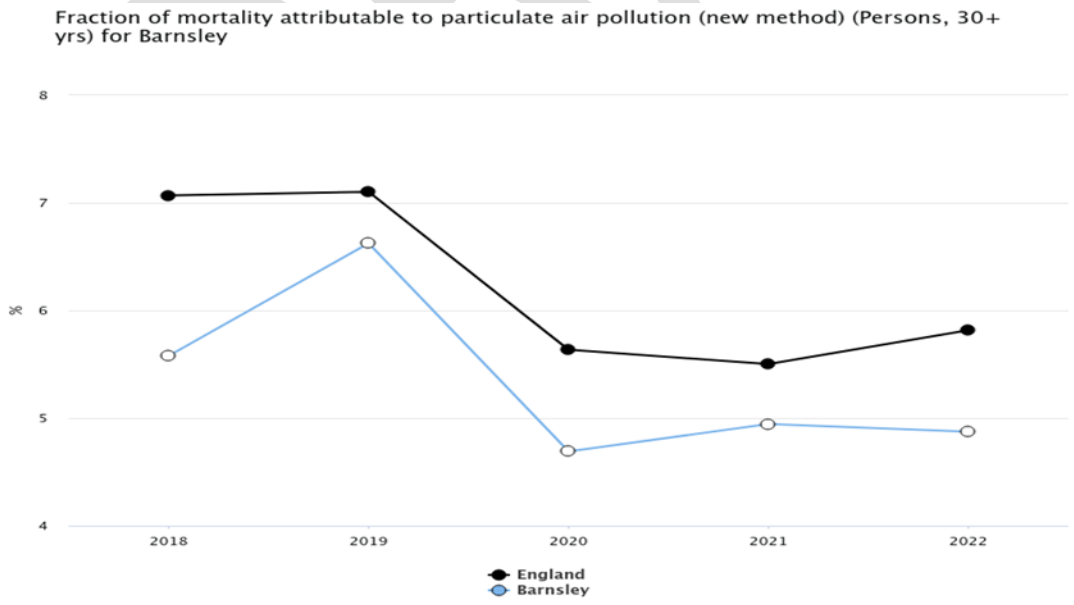
Although air pollution can be harmful to everyone, it particularly affects people living in polluted areas, those who are exposed to higher levels of air pollution in their day to day lives, and those who are more susceptible to health problems caused by air pollution, widening health inequalities (https://www.gov.uk/government/publications/health-matters-air-pollution).

The inclusion of the following indicators supports local areas to prioritise action on air quality to help reduce the health burden from air pollution.

Which can contribute to the causes of adult mortality attributable to particulate air pollution (measured as fine particulate matter, PM2.5*).

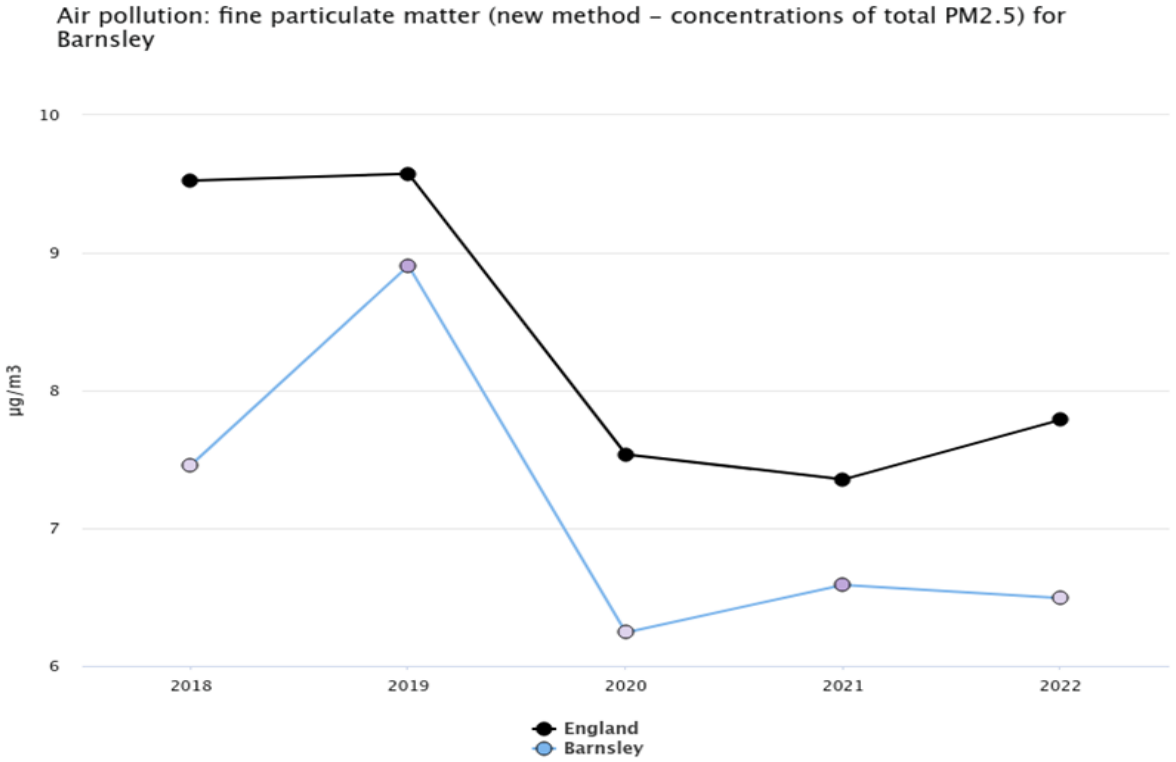
* PM2.5 means the mass (in micrograms) per cubic meter of air of individual particles with an aerodynamic diameter generally less than 2.5 micrometers. PM2.5 is also known as fine particulate matter.

Mortality burden associated with long term exposure to particulate air pollution at current levels, expressed as the percentage of annual deaths from all causes in those aged 30 and older.



Annual concentration of fine particulate matter at an area level, adjusted to account for population exposure. Fine particulate matter is also known as $PM_{2.5}$ and has a metric of

micrograms per cubic meter (µg/m3).



Although Barnsley is meeting the standards for $PM_{2.5}$, there is no known safe concentration for this pollutant, hence, the Government's desire that emissions of this pollutant are tackled at local, as well as national level. As local sources of $PM_{2.5}$ particles are very similar to sources of nitrogen dioxide gas (traffic, houses, industry), it is important also to assess any action to reduce emissions of nitrogen dioxide for their impact on $PM_{2.5}$ emissions. A1: Emissions for five key air pollutants

[9] Barnsley MBC, Regulatory Services, January 2016, $PM_{2.5}$ Monitoring in Barnsley 2015-15, report to Barnsley MBC, Public Health

It is now acknowledged that there are health impacts at concentrations below the limit values and objectives for both particulate matter and NO_2. Consequently, Public Health are keen that concentrations of both of these pollutants are addressed generally within the borough where feasible and not just within our AQMAs, in order to give wider protection to public health.

Other public health outcome framework indicators (PHOF) for the borough highlight the prevalence of poor health (e.g. cardiovascular disease, respiratory disease), which can be associated with poor air quality (one of many factors), or are a co-benefit of actions to improve air quality (such as promotion of the active travel agenda on levels of obesity)[11].

The public health links with poor air quality have been further highlighted within the Chief Medical Officer Annual report 2022 into Air Quality. 15 recommendations have been made: Overall Outdoor air pollution.

1. Outdoor air pollution is falling and will fall further, provided we continue and accelerate the things we know work. This requires action in many sectors, but the interventions are all realistic. We need to focus on areas where people live, study, work and undertake leisure activities.

Indoor air pollution

2. As outdoor air pollution falls, indoor air pollution becomes a greater proportion of the problem. Ventilation and reducing emissions are important. Several interventions are highlighted in the report. However, the path to improvement is not as clear as for outdoors, and further research will be needed.

Specific recommendations

Transport

3. The electrification of light vehicles and public transport is important for reducing air pollution from vehicle tailpipes – momentum must be maintained, and accelerated wherever possible. Emissions from tyres and road wear will not be improved by electrification, and this is a key research and innovation need.

4. A greater range of options for reducing air pollution emissions from heavy vehicles is needed. Some specialised vehicles such as refrigerated units need to be addressed, especially in urban areas.

5. The electrification of railways can significantly reduce air pollution emissions from

trains and improve air quality for travelers, staff and those living nearby. Where this is not possible, bi-mode or other low-pollution technologies should be used. Closed spaces are important, for example we should look to end diesel trains being left running in enclosed stations.

Urban planning

6. With national government, local authorities are central in the response to air pollution. Urban planning should support reducing air pollution concentrations locally – such as reducing air pollution near schools and healthcare settings. Shifting to active travel where possible has direct health wins as well as reducing air pollution from vehicles – planning should support this.

Industry

7. The substantial improvements from industrial processes over recent years are impressive. Wherever possible remaining industries that emit pollution should be sited away from densely populated areas. Where they cannot, such as construction, mitigations can significantly reduce the impact and they should be adhered to. Agriculture

8. Ammonia emissions from agriculture contributes to secondary particulate matter air pollution, which can travel large distances and affect populated areas. Significant reductions in ammonia air pollution could be achieved by precision application of slurry to, or into soil, and covering slurry-stores. There would be capital costs, but these changes could be self-sustaining afterwards.

The NHS

9. The NHS is committing to halving its contribution to poor air quality within a decade while reducing health inequalities.

10. The training of healthcare staff should include the health effects of air pollution and how to minimise these, including communication with patients.

Indoor air pollution

11. People spend large periods of time indoors and many indoor places are public, where individuals have little control over the quality of air they breathe. These two factors should be recognised in the planning and development of public indoor spaces. 12. Effective ventilation, while minimising energy use and heat loss, is a priority for reducing air pollution, respiratory infections and achieving net zero. This is a major engineering challenge which needs solving.

13. While there is co-ordination across government, the ownership of indoor air quality policy within government needs to be clarified.

Wood stoves and other solid fuel heating

14. The use of wood stoves is increasing and can impact air quality significantly in urban areas. Air pollution emissions can be reduced, but not fully eliminated, by using modern, less polluting stoves and burning wood that is dry. In smoke control areas, the rules should be adhered to.

15. Research priorities are highlighted in the research section. Indoor air pollution in particular needs greater research interest. Policies should be evaluated once implemented. R

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This report further strengthens the link that the most vulnerable groups in society are those most affected by air pollution, through the combined impact of poor air quality and deprivation, along with longer term health inequalities. This report also details the ongoing costs of air pollution to the NHS and the wider social care system.

1.2 Planning and Policy Context

The air quality impact of development is recognised nationally and locally. Nationally, the National Planning Policy Framework December 2024(NPPF) provides guidance as to how planning can take account of the impact of new development on air quality.

Paragraphs specifically require that developments: (i) Prioritise sustainable transport modes; (ii) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.(iii) do not cause unacceptable impacts; (iv) contribute towards compliance with relevant limit values or national objectives for pollutants; (v) take into account the presence of AQMAs and Clean Air Zones;(vi) consider cumulative impacts; and (vii) identify opportunities to improve air quality and mitigate impacts.

Supporting the NPPF and in order to ensure that the air quality impact of future development in the borough is appropriately mitigated, this Service has developed the Barnsley MBC Air Quality and Emissions Good Practice Planning Guidance[14] Barnsley MBC Air Quality and Emissions Good Practice Planning Guidance The guidance provides a template for integrating air quality considerations into land-use planning and development management policies that can influence the reduction of road transport emissions. The air quality assessments follow a three stage process:

- Stage 1: Determining the classification of the development proposal
- Stage 2: Assessing and quantifying the impact on local air quality
- Stage 3: Determining the level of a mitigation required by the proposal to meet Local Development Plan requirements.

Consequently, this guidance has been incorporated as an action into this plan, a complete copy of this guidance can be found in appendix D.

Source Apportionment

To inform the development of this Action Plan, a source apportionment study was carried out by Ricardo in order to identify key contributors to air pollution and emissions at pollution hotspots in Barnsley. Source apportionment was carried out using background mapping data published by Defra[1] and local roads modelling. Traffic data for the modelling was taken from traffic data published by the DfT and local traffic counts. Emissions from road traffic were calculated using the emission factors and fleet projections provided in the Emissions Factors Toolkit[2], published by Defra.

The study looked at the contribution of sources to total NO_2 at 5 locations where monitored annual mean NO_2 concentrations were within 10% of the UK Air Quality Objective of 40 µg/m³. Figure 1-1 presents contributions to concentrations away from local sources in Barnsley centre from background mapping data. Figure 1-2 presents a further apportionment of the contribution from local roads to concentrations at NO_2 hotspots in Barnsley by vehicle type. Table 0-1 presents this source apportionment information in tabular format.

The three main contributors to regional NOx and NO_2 concentrations are emissions from roads, domestic and commercial combustion, and rural sources. Local contributions to NO_2 concentrations from road transport are dominated by emissions from cars and HGVs. In Langsett (the locations of DT3 and DT8) LGVs are also a major source of NO_2 concentrations, reflecting the larger proportion of freight and through traffic on the A616.

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[1] https://uk-air.defra.gov.uk/data/laqm-background-home

[2] Defra, Emissions Factors Toolkit | LAQM

Figure 0-1: Source apportionment of regional contribution to annual mean NO_2 concentrations at hotspots in the BMDC area

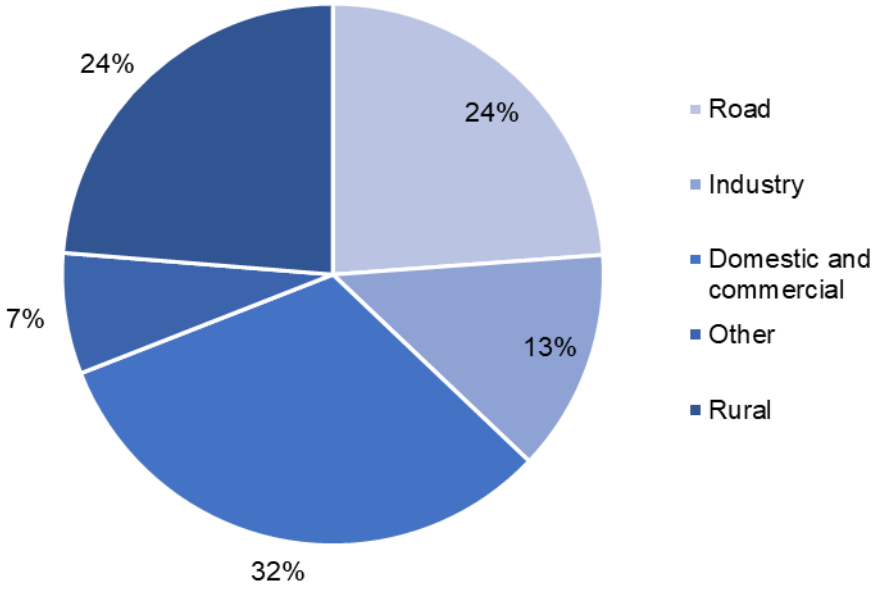

Figure 0-2: Source apportionment of local roads contribution to annual mean NO_2 concentrations at hotspots in the BMDC area by vehicle type, µg/m³

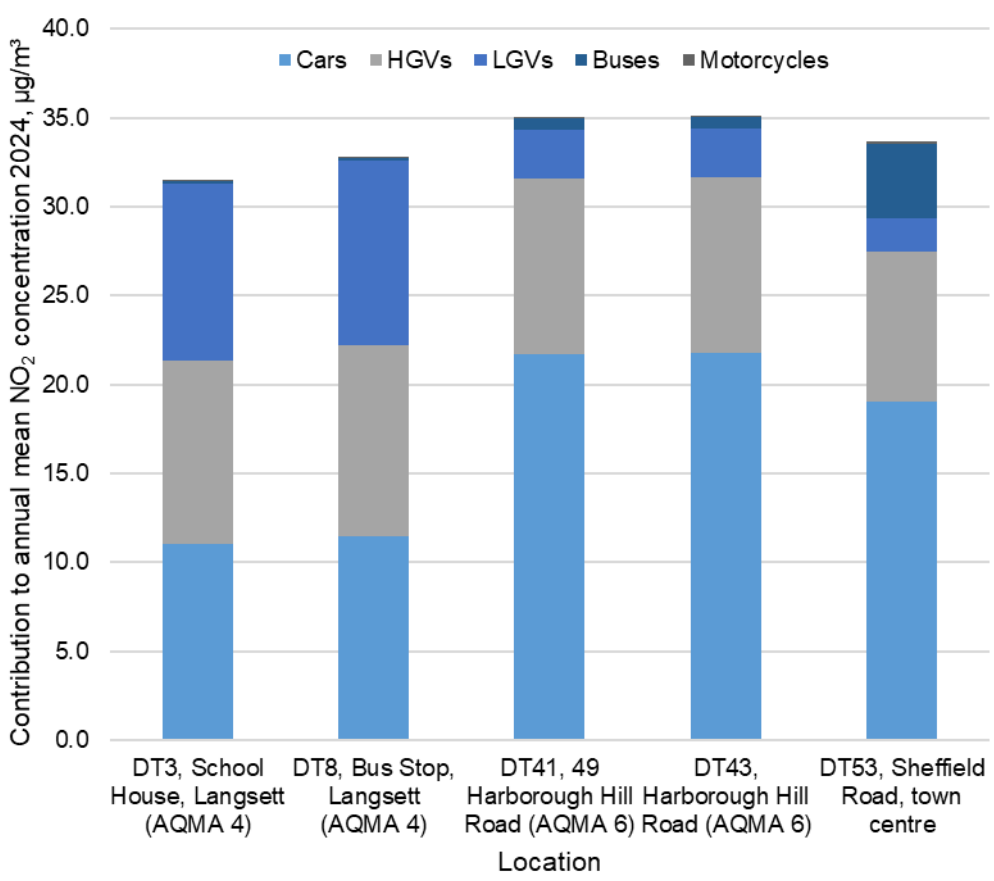

Table 0-1: Source apportionment of local roads contribution to annual mean NO_2 concentrations at hotspots in the BMDC area by vehicle type, µg/m³

Site ID	Location	Cars	HGVs	LGVs	Buses	Motor-cycles
DT3	Footpath Sign, School House, Langsett	35%	33%	32%	< 0.1%	< 0.1%
DT8	Langsett - Footpath Sign Bus Stop	35%	33%	32%	< 0.1%	< 0.1%
DT41	49 Harborough Hill Road	62%	28%	8%	2%	< 0.1%
DT43	Harborough Hill Road – near to bakery	62%	28%	8%	2%	< 0.1%
DT53	Sheffield Road, town centre	57%	25%	6%	13%	< 0.1%

Required reduction in emissions

The monitoring data collected during 2024 shows only three monitoring locations (DT41, DT43, and DT53) which exceed the 40 µg/m^3 annual mean threshold set for NO_2. Concentrations at a further two monitoring locations (3 and 8) are within 10% of the objective. Table 0-2 sets out the required reduction in NO_2 concentrations and emissions of NOx from local roads to achieve compliance. The largest reduction in road emissions and NO_2 concentrations is seen at DT41 on Harborough Hill Road.

Table 0-2: Required reduction in emissions to achieve compliance with the threshold for annual mean NO_2 concentrations in 2024

Site ID	Location	Monitored NO_2 concentration, 2024, µg/m³	Required reduction (µg/m³)	Required reduction in road emissions as %
DT41	49 Harborough Hill Road	48.3	8.3	31.2
DT43	Harborough Hills Road – near to bakery	48.1	8.1	30.0
DT53	Sheffield Road, town centre	44.6	4.6	18.3

Natural year of compliance

The expected year of natural compliance (i.e. the year that compliance with the target level would be achieved without including the measures in the Air Quality Action Plan) was assessed through emissions projections and dispersion modelling at the three locations where monitored annual mean NO_2 concentrations exceeded the Air Quality Objective in 2024.

Traffic flows in future years were estimated using the projections from the Trip End Model

Presentation Program (TEMPro), published by the Department for Transport.[3] Vehicle fleet projections for future years were taken from the Emissions Factors Toolkit, published by Defra. Background concentrations for future years were taken from the Defra background maps.

The natural year of compliance is presented in Table 0-3. Compliance is predicted to be achieved across all three locations by 2027; as such, the measures in this Air Quality Action Plan will act to ensure that compliance is achieved and achieve further improvements to air quality across Barnsley.

Table 0-3: Expected year of natural compliance at locations where concentrations exceed the UK Air Quality Objective

Site ID	Location	Monitored NO_2 concentration, 2024, µg/m³	Year of natural compliance
DT41	49 Harborough Hill Road	48.3	2027
DT43	Harborough Hills Road – near to bakery	48.1	2027
DT53	Sheffield Road, town centre	44.6	2026

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[3] DfT, Trip End Model Presentation Program (TEMPro) download - GOV.UK

Quantification of Measures

Emissions from road transport in future years will also be affected by other factors including population growth and improvements in vehicle emissions technology. As a result, all locations are expected to reach compliance for annual mean NO_2 concentrations by 2030.
To quantify the additional reductions that will be achieved through the Action Plan in order to safeguard and bring forward compliance, dispersion modelling was carried out using Ricardo's RapidAir model to quantify the expected impacts of three priority actions on NO_2 concentrations at hotspot locations in Barnsley:

- M2: SYMCA bus reform.
- M13: Introduce priority parking for LEVs, combined with other measures to support shift to EV and LEV use.
- M24 and M25: Reduction in the number of cars to represent a modal shift towards active travel and public transport.

Table 0-1 provides a summary of the methodology used in the scenario modelling for each scenario.

Table 0-1: Assessment methods for scenario modelling

Measure ID	Description	Evaluation method
M2	SYMCA bus reform	100% of the bus fleet was assumed to be electric vehicles on routes passing monitoring locations in AQMA 6 and on Sheffield Road. Note that these bus routes do not pass through Harborough Hill, and as a result locations in AQMA 4 will not be impacted by this measure. No modelling has been carried out to account for potential modal shift from private vehicles resulting from improved services.
M13	Introduce priority parking for LEVs, combined with other measures to support shift to EV and LEV use.	The impact of this measure will be to encourage a shift from petrol and diesel private vehicle use to electric or LEV vehicles for trips to and from the car parks where the scheme is implemented. This measure was assumed to apply to the Market Gate car park and Glass Works car park in the vicinity of AQMA 4. On this road, a 2.5% shift from petrol and diesel private vehicles to EV and LEVs was assumed in combination with other measures to support LEV and EV usage (including EV charging points) in the AQAP. Concentrations in AQMA 6 and at DT53 were assumed to be unaffected by any vehicle fleet changes.
M24, M25	Reduction in the number of cars to represent a modal shift towards active travel and public transport	These are borough-wide measures and are assumed to affect traffic at all modelled locations. The following three scenarios were modelled to provide a comparison of the impact of different magnitudes of shift towards public transport and active travel: • HIGH: 10% reduction in car traffic flows.

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		• MEDIUM: 7% reduction in car traffic flows. • LOW: 5% reduction in car traffic flows. Emissions from road transport in future years will also be affected by other factors including population growth and improvements in vehicle emissions technology.

Estimated impact of measures

Error! Reference source not found. presents the expected further reduction in NO_2 concentrations resulting from measures 2 and 13 in the Action Plan. Table 6-4 presents the expected reduction in annual mean NO_2 concentrations resulting from measures 24 and 25. The Symca bus reform (M2) is predicted to have a significant impact on concentrations at DT53, but a smaller impact on concentrations in AQMA 6 where cars, LGVs and HGVs are the main contributors to NO_2 pollution.

Measures targeting emissions from private cars have a greater impact in AQMA 4 and at DT53 compared to AQMA 6, reflecting the large contribution of LGVs HGVs to emissions in AQMA 6.

Table 0-2: Estimated percentage reductions in NO_2 concentrations at hotspot locations in Barnsley from measures M2 and M13, 2030

Site ID	Location	AQMA	Estimated percentage reduction from M2	Estimated percentage reduction from M13
3	Footpath Sign, School House, Langsett	AQMA 6	0.3%	-
8	Langsett - Footpath Sign Bus Stop	AQMA 6	0.3%	-
41	49 Harborough Hill Road	AQMA 4	-	2.1%
43	Harborough Hill Road – near to bakery	AQMA 4	-	3.2%
53	Sheffield Road, town centre	Outside AQMA	8.1%	-

Table 0-3: Estimated percentage reductions in NO_2 concentrations at hotspot locations in Barnsley from measures M24 and M25, low, medium, and high scenarios, 2030

Site ID Location In AQMA?	Estimated percentage reduction from M24 and M25		
	Low	Medium	High
3 Footpath Sign, School House, Langsett AQMA 6	0.9%	1.3%	1.9%

Site ID Location In AQMA?	Estimated percentage reduction from M24 and M25		
	Low	Medium	High
8 Langsett - Footpath Sign Bus Stop AQMA 6	0.9%	1.3%	1.9%
41 49 Harborough Hill Road AQMA 4	2.8%	3.6%	4.8%
43 Harborough Hill Road – near to bakery AQMA 4	3.2%	4.1%	5.3%
53 Sheffield Road, town centre Outside AQMA	1.7%	2.3%	3.1%

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Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
AQS	Air Quality Strategy
ASR	Air quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less

Primarily, reduction of road transport emissions is subject to the successful implementation of progressively tighter engine emission standards (EURO standards),

and the operation of strict testing regimes. These issues have been the subject of recent considerable debate. Clearly however, local authorities have no control over these particular regimes, being the remit of national and international authorities.

However, Central Government have made it clear to local authorities that local measures to tackle road traffic emissions are required, as well as relying on national / international actions to reduce emissions. This has been highlighted by Central Government, by the inclusion of local authority actions (including actions taken from our 2012-2016 action plan) within their national plan, submitted to the European Commission in December 2015[17],[18]. The importance of local actions are stressed within these documents.

It should also be recognised that traffic emissions are not the only source of emissions, as typically, in urban areas, industrial and domestic emissions account for a proportion of overall emissions. Defra's 2004 report (Air Quality Expert Group: Nitrogen Dioxide in the UK – Summary)[19] discusses this issue further.

In order for this plan to be effective and feasible, it is important that actions are targeted to their sources. It should also be noted that the source apportionment exercise does not take account of other circumstances within each of our AQMAs (e.g. the impact of gradient or excessive localised congestion within a particular AQMA).

1.3 Required Reduction in Emissions

An emission reduction exercise has been undertaken, following the requirements of Technical Guidance LAQM.TG16 Chapter 7. The following results were obtained:

Table 10 – Required Reduction in NOx Emissions, AQMAs

AQMA	Required reduction in road NOx (µg/m^3) to achieve annual mean objective	% reduction required
2A	7	9.9

[17] Defra, December 2015, Improving air quality in the UK. Tackling nitrogen dioxide in our towns and cities – UK overview document
[18] Defra, December 2015, Air Quality Plan for the achievement of EU air quality limit value for nitrogen dioxide (NO_2) in Yorkshire and Humberside (UK0034)
[19] https://uk-air.defra.gov.uk/assets/documents/reports/aqeg/nd-summary.pdf

4	19.1	40
6	89.2	52.7
7	11.6	16.3

These data show that very significant road NOx reductions are required in AQMAs 4 and 6. It should be noted that there are local circumstances for these AQMAs which reflect these required reductions. Both AQMAs are subject to significantly increased emissions due to gradient, whilst Langsett, due to its remote location, (adjacent to the Peak District National Park in the Pennines) has relatively low concentrations of background NOx, compared to the Barnsley urban area. Proposed actions within these AQMAs therefore need to reflect these particular emission profiles. Subsequently additional local actions, specific to these two AQMAs will be required to achieve compliance.

No emission reduction calculations have been undertaken for AQMAs 1 and 5, as NO_2 concentrations within these AQMAs are meeting the objective. Our 2016 Annual Status Report[20] recommended that we proceed to a detailed assessment, with a view to revoking AQMA 5, due to several years compliance. In contrast, due to proposals for a managed motorways scheme along the M1 motorway in Barnsley, we await further information on the air quality impact of this scheme, before we proceed further.

Achieving sufficient reduction in NOx emissions in order to comply with the NO_2 annual mean objective / EU limit is not the sole aim of this plan. The prevention of any deterioration in air quality in those areas of the Borough which are close to the objective / limit value will also continue, regardless of achieved compliance in our AQMAs, along with continued protection of health.

1.4 Key Themes

We have developed actions under five key themes. These have been developed and agreed by the Barnsley MBC Air Quality Action Plan Steering Group, chaired by our Director of Public Health. These are:

[20] Barnsley MBC, June 2016, 2016 Annual Status Report, https://www2.barnsley.gov.uk/services/environment-and-planning/pollution/air-quality

- Reduce Traffic
- Behavioral Change
- Increase Efficiency
- Improve Fleet
- Regulation

Underlying these themes are aims which provide the focus and commitment for each of the themes, ensuring that all stakeholders understand the overall aims of the Plan. The key themes are detailed in Table 11 below:

Table 11 – Key Priorities

Key Theme	Reduce Traffic	Behavioural Change	Increase Efficiency	Improve Fleet	Regulation
Aim	**We aim to improve air quality by promoting public transport and other travel alternatives to the use of the private car**	**We aim to improve air quality by encouraging people who live, work or learn in Barnsley to take steps to reduce their impact**	**We aim to improve air quality by ensuring our transport networks operate as efficiently as possible by smoothing traffic flows and reducing Congestion**	**We aim to improve air quality by reducing emissions from our Barnsley MBC fleet and other assets**	**We aim to improve air quality by ensuring that industrial and domestic air pollution is correctly and fairly regulated, and ensuring that businesses are aware of their statutory requirements**
Action	SYMCA bus Reform Promoting Travel Alternatives	Delivery of Active Travel schemes Car and Lift sharing programmes Active Travel Plan Policy Anti-idling	Carriageway Improvements Specific scheme for AQMA 6 Junction improvements schemes Planning applications - air quality mitigation and assessment Barnsley Intelligent Transport Systems Assessment of air quality impact of major traffic schemes	Procurement BMBC Fleet improvements Introduction of EV charging in car parks	Control over emissions from Environmental Permits Enforcement of Clean Air Act with regards to industrial smoke Enforcement of Clean Air Act with regards to domestic smoke Investigation of nuisance complaints, including appropriate action to resolve the complaint

The NICE air quality guidance for local authorities, recognises (amongst other proposed air quality mitigations), the impact of the introduction of 20 mph zones and vegetation barriers on improving air quality. Overview | Air pollution: outdoor air quality and health | Guidance | NICE

Development and Implementation of Barnsley MBC AQAP

1.5 Consultation and Stakeholder Engagement

In developing/updating this AQAP, we have worked with other local authorities, agencies, businesses and the local community who have a stake in improving local air quality. Schedule 11 of the Environment Act 1995 requires local authorities to consult the bodies listed in Table 12. We have also undertaken a review of local, regional and national existing strategies[22,23,24], plans and policies which have direct or indirect links to air quality. The local plans referenced below have assisted in the development of this plan, while supporting continued and sustainable growth in the borough.

The Plan also aligns with the aims and objectives of the Council's Housing Strategy (2014-2033)[25], in particular the objective to deliver a more sustainable housing stock. For instance, the objective to reduce carbon emissions from housing will also assist with reduction of local air quality pollutant emissions generally, through the progressive use of more energy efficient ways to heat and power local housing.

Furthermore, through the planning regime, appropriate mitigation will be required for any future development which may be located in areas of air quality concern.

Examples of such mitigation include the provision of electric vehicle charging points in car parks, the introduction of Active Travel schemes to promote walking and cycling and other Travel Plan interventions.

https://www.barnsley.gov.uk/media/gxqo1mvn/bmbc-housing-strategy-2024-2028.pdf

In addition, this process has included a review of our previous action plan[26].

The Plan also recognises other Council aspirations, notably restructuring the economy through economic regeneration. Increasing economic activity to maintain enough jobs and businesses to support the working population will potentially generate increased traffic on the local road network, which can then impact on congestion and road traffic emissions. This issue has been acknowledged. Regionally, the emerging Sheffield City Region Integrated Infrastructure Plan[27] recognises air quality as an issue and identifies opportunities to reduce transport related emissions. Locally, the Local Plan identifies sites in the Borough for future development; whilst also within the Local Plan, there is a policy specifically relating to mitigation of air

[22] Barnsley MBC, 2014, Barnsley MBC, Highways and Transportation, Barnsley MBC Transport Strategy, 2014-2033
[23] Barnsley MBC, Housing and Energy, 2016, Energy Strategy 2015-2025
[24] Barnsley MBC, Public Health, 2016, Our Public Health Strategy 2016-18
[25] Barnsley MBC, Housing and Energy, 2014, Housing Strategy 2014-2033
[26] Barnsley MBC, 20, Air Quality Action Plan
[27] Sheffield City Region, 2016, Sheffield City Region Integrated Infrastructure Plan

quality impact from future development, in locations where there are potential air quality concerns.

Importantly, this plan follows the development of a Sheffield City Region (SCR) Air Quality Action Plan (see appendix F). Consequently this plan is very closely linked to the SCR Air Quality Action Plan, as this regional plan identifies mechanisms for air quality related actions which may be undertaken at this level, with associated funding bids also undertaken regionally. The development of regional funding bids is currently expected to be carried out by officers from the Combined Authority, in partnership with officers from Barnsley MBC. This arrangement is likely, as any subsequent funding awards for schemes which would benefit Barnsley, would very likely be lodged and administered by the Combined Authority. The actions proposed within the SCR action plan are very similar to this plan, with the regional plan acting as a supporting document to this plan. Barnsley MBC's air quality Steering Group will have the final decision regarding any regional actions to be pursued within the borough.

A formal consultation exercise on the draft plan was undertaken in late 2016. All relevant information was made available on the Barnsley MBC website (www.barnsley.gov.uk). Stakeholders were directed to the Barnsley MBC consultation web page (http://consult.barnsley.gov.uk/portal), where they were invited to comment online on the draft plan.

In addition, stakeholders who were considered to have a significant role in developing and implementing the plan were contacted directly. Besides those stakeholders listed in Table 12 below, there will be further consultation with stakeholders internal to the Council via the Steering Group, and it is expected that current dialogue with other external stakeholders (e.g. Highways England) will continue.

The response to our consultation stakeholder engagement is given in appendix A.

Table 12 – Consultation Undertaken

Yes/No	Consultee
	the Secretary of State (to be undertaken after completion of final draft)
Yes	the Environment Agency
Yes	Highways England

Yes	all neighbouring local authorities
Yes	other public authorities as appropriate, such as Public Health officials
Yes	bodies representing local business interests and other organisations as appropriate

1.6 Steering Group

This draft action was presented to the inaugural meeting of the Steering Group, following approval of the draft plan by Council. The composition of the Steering Group is detailed in table 13:

Table 13 – Composition of the Steering Group

Chair	Director of Public Health, Barnsley MBC
Secretariat and Administration	Regulatory Services, Barnsley MBC
Directors and Heads of Strategic Transport	Head of Strategic Transport
Directors and Heads of Development	Service Director, Public Health and Communities Directorate,
Directors and Heads of Planning	Head of Planning
Directors and Heads of Public Health	Director of Public Health Head of Public Health Public Health Principal

The Steering Group will meet twice a year to gauge progress with the actions, promote new actions (where appropriate) and ensure that the local air quality management process in Barnsley is delivering and evolving.

The inaugural meeting of the Steering Group considered the actions within the draft of this plan and consequently approved the list of actions to go forward to wider consultation.

Regardless of actions being approved by stakeholder consultation, or by the Steering Group, some of these actions are yet subject to the securing of suitable funding.

1.7 AQAP Actions

Table 14 shows the proposed Barnsley MBC Air Quality Action Plan measures. It contains:

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

Furthermore, the table in appendix G provides further evaluation of our proposed actions, particularly identifying definite or potential funding sources; their impact on NOx and particulate matter (including $PM_{2.5}$) emissions; and the sectors of the vehicle fleet that these are actions are targeting.

N.B. Please see future Annual Status Reports for regular annual updates on implementation of these measures

Table 14 – Proposed Air Quality Action Plan Measures

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
1	Carriageway improvements	Traffic Management	Congestion Management	BMBC ST	Schemes are in the pipeline for delivery	In the pipeline for delivery	Completion of scheme	To be determined, and dependent on any future scheme feasibility study	in the pipeline – some out for delivery	CRSTS funding is to March 2027	Previous construction of road management schemes adjacent / within AQMAs has resulted in revocation
2	SYMCA Bus Reform	Transport Planning and Infrastructure	Public Transport Improvements	SYMCA ST	2026	2027	Penetration of ZEBRA buses in the Fleet	Dependent on agreement and any subsequent retrofit funding	Consultation on proposed BUs Reform Jan 2025	2027	Agreement based on previously signed ones elsewhere in South Yorkshire, but opportunity to update emission requirement (EURO specification)
3	Encourage uptake of lower emission vehicles and alternative fuels (EVs, CNG, H_2)	Promoting low emission transport	Procuring alternative refuelling infrastructure to promote Low Emission Vehicles, EV recharging Public vehicle procurement – prioritising uptake of low emission vehicles	BMBC, ST, Reg Services,	Dependent on specific projects	2016-2021, subject to funding bids etc.	Use of charging points in borough	The results of the 2011 FA modelling exercise for the this action indicate, that, after application of certain assumptions has resulted in a decrease of between 10% and 14% in NO_2 concentrations. It must be borne in mind that these are likely to be best case scenarios, which will only be achieved by a significant shift to low emission vehicles in the vehicle fleet	See 2016 ASR	2021, subject to securing funding	See 2016 ASR. It is hoped that this project can build upon other existing projects elsewhere in South Yorkshire
4	Specific schemes for the Langsett AQMA (AQMA No. 6)	Traffic Management	Congestion Management	National Highways	2016-2017	Subject to outcomes of the planning phase	Reduction in concentrations (see 2013 detailed assessment)	Reduction in concentrations (see 2013 detailed assessment)	Setting up of working group	Subject to identification of appropriate actions and funding	The joint HE-BMBC working party has identified potential actions, which now require further consideration and consultation

Barnsley MBC

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
5											
6	Speed restrictions on gradient Feasibility Study	Traffic Management	Congestion Management	BMBC, Regulatory Services	2016-17	On completion of planning phase, securing of funding and approval of relevant stakeholders	Implementation of scheme	Subject to conclusions of assessment (supporting dispersion modelling exercise)	Initial modelling exercise undertaken, which will require further refinement following dialogue with stakeholders	Subject to approval of scheme	This AQMA has been declared due to increased emissions using a steep uphill carriageway. Concentrations adjacent to the downhill carriageway are meeting EU limit values
7	Procurement	Policy Guidance and Development Control	Sustainable Procurement Guidance	BMBC Procurement	2016-17	Subject to production of revised Procurement policy taking account of air quality	Production and implementation of revised policy	Unable to determine	None	Ongoing	Process will involve the review of other local authority procurement policies
8	Control over emissions from Part B and A2 processes, and act as consultees for Part A1 processes	No EU category / classification	No EU category / classification	BMBC Regulatory Services	Completed	Ongoing	Unable to determine	Unable to determine	Ongoing	Ongoing	Ongoing statutory duty for local authorities
9	Enforcement of the Clean Air Act with regards to industrial smoke	No EU category / classification	No EU category / classification	BMBC Regulatory Services	Completed	Ongoing	Unable to determine	Unable to determine	Ongoing	Ongoing	Ongoing statutory duty for local authorities
10	Enforcement of the Clean Air Act with regards to domestic smoke control	No EU category / classification	No EU category / classification	BMBC Regulatory Services	Completed	Ongoing	Unable to determine	Unable to determine	Ongoing	Ongoing	Ongoing statutory duty for local authorities

Barnsley MBC

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
11	Investigation of nuisance complaints, including appropriate action to resolve the problem	No EU category / classification	No EU category / classification	BMBC Regulatory Services	Completed	Ongoing	Unable to determine	Unable to determine	Ongoing	Ongoing	Ongoing statutory duty for local authorities
12	BMBC fleet improvements	Vehicle Fleet Efficiency	Vehicle retrofitting programmes	BMBC	Not yet determined, as subject to future funding bids	Not yet determined, as subject to future funding bids	Not yet determined	Not yet determined	None	Not yet determined	Dependent on future opportunities
13	Priority parking for LEVs	Promoting low emission transport	Priority parking for LEVs	BMBC	2016-17	Post planning phase, so 2017 onwards	Not yet determined	Not yet determined	Working towards consultation of revised Car Parking Strategy	Not yet determined	Consultation process should provide opportunity to comment on priority parking for LEVs
14	Freight and Delivery Management	Freight and Delivery Management	Delivery and Service plans	BMBC H&T	Not yet determined	Not yet determined	Not yet determined	Not yet determined	Not yet determined	Not yet determined	
15											
16											

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
17											
18	Consolidation Centre	Freight and Delivery Management	Freight Consolidation Centre	BMBC	Not yet determined	Not yet determined	Not yet determined	Not yet determined	None	Not yet determined	Dependent on future opportunities
19	Barnsley Intelligent Transport Systems	Transport Management	Congestion Management	BMBC, ST	Completed	2022-2027	As the system is responsive to demand management requirements, it is considered difficult to prescribe a key performance indicator, however ITS (SCOOT/MOVA / Bus Virtual Triggers[28]) has been installed within several of our AQMAs	As the system is responsive to demand management requirements, it is considered difficult to prescribe a target annual emission reduction	See previous PRs. Installation of SCOOT within AQMAs, 2A, 4 and 7. Installation of MOVA in AQMA 5		Intend to continue beyond 2025, subject to securing of further funding in future years
20	Encourage cycling and walking (developing infrastructure and campaigns)	Promoting Travel Alternatives Transport Planning and Infrastructure	Promotion of Cycling Promotion of Walking Public cycle hire scheme Cycle network	BMBC, ST	Ongoing	2022- 2027	To be determined	Table A.1 Action Toolbox of LAQM 16 indicates low impact on reducing PM and NOx emissions	Barnsley Cycle Hub (web link), Barnsley Cycle Boost (web link)	2021	Successful City Region Sustainable Transport Settlement (CRSTS) , with bids for funding thereafter
21	Care4Air	Public Information	Via the internet, leaflets, radio, television and other mechanisms	BMBC, Regulatory Services	Completed	2016-2021	Unable to determine	Unable to determine	See website for details of progress	Subject to funding	http://www.care4air.org/

28 SCOOT – Split Cycle and Offset Optimisation Technique; MOVA – Microprocessor Optimised Vehicle Actuation, both designed to maximise traffic flow

Barnsley MBC

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
22	Assessment of air quality impact of major traffic schemes	Traffic Management	Congestion Management	BMBC Regulatory Services	Completed	Ongoing	Unable to determine?	Unable to determine?	Assessment of previous schemes	Ongoing	Assessment of schemes to ensure that design and layout has beneficial impact on emission reduction
23	Smoky diesel Hotline	Public Information	Via the internet, leaflets, radio, television and other mechanisms	BMBC Reg Services	Completed	Ongoing	Unable to determine	Unable to determine	Ongoing	Ongoing	See (https://www.gov.uk/report-smoky-vehicle)
24	Car and Lift sharing programmes	Alternatives to private vehicle use	Car and Lift sharing schemes	BMBC, SYTPE	Completed	Ongoing	Unable to determine	Unable to determine	Not yet determined	Not yet determined	See (https://southyorkshire.liftshare.com)
25	Promoting Travel Alternatives (Workplace travel planning; encourage / facilitate home-working; personalised travel planning; school travel plans)	Promoting Travel Alternatives	(Workplace travel planning; encourage / facilitate home-working; personalised travel planning; school travel plans)	BMBC ST	Completed	Ongoing	Not yet determined	Not yet determined	Not yet determined	Not yet determined	Ongoing projects
26	Anti-idling policy feasibility study	Traffic Management	Anti-idling enforcement	BMBC H&T	2016-17	Following completion of feasibility study and adoption of the policy	Not yet determined	Not yet determined	Not yet determined	Not yet determined	Feasibility study to determine if an anti-idling policy is appropriate for Barnsley

These proposed actions are discussed in more detail below:

Carriageway Improvements

As well as current congestion issues, it is hoped that the Borough will be subject to further employment and housing growth in future, in order to continually drive local economic regeneration and secure a more prosperous future. Such development and increasing economic activity, by its very nature, will generate increased traffic on the local network. This can have impact on congestion and emissions. In

order to mitigate against this, previous transport modelling work undertaken has demonstrated that carriageway improvements can be undertaken to improve vehicle flows and hence reduce emissions. This has proven successful in the past in Barnsley, resulting in the revocation of two AQMAs.

South Yorkshire Mayoral Combined Authority (SYMCA) Bus Reform

As of January 2025 the SYMCA have been consulting on a Bus Reform with their preferred option being Bus Franchising. Under Bus Franchising, the MCA would take control of how buses are run, owning the depots and bus fleets. It will give them the power to decide bus routes, timetables, quality standards, ticket options , cost of fares, how to improve the reliability of the bus network and how buses, trams and trains can connect. Being responsible for bus fleets will enable more Zero Emission buses to be procured

Barnsley Intelligent Transport Systems

SCOOT and MOVA have been installed at various junctions in the Barnsley urban area, including AQMAs 2A, 4 and 5. These systems are used to "try to minimise the traffic problems by using a variety of traffic management methods. SCOOT (Split Cycle Offset Optimisation Technique) is a tool for managing and controlling traffic signals in urban areas. It is an adaptive system that responds automatically to fluctuations in traffic flow through the use of on-street detectors embedded in the road"[29]. MOVA tends to be used at more isolated junctions, but the principle is the same as SCOOT. Reducing congestion has beneficial effects on road transport emissions, and is quoted within Table A1 of Annex A of the LAQM Action Toolbox (TG 16) as an action with air quality benefit. The Council has also procured a system called "Bus Virtual Triggers" which will be installed at traffic signals throughout the borough. This system will detect a bus approaching and alter the signal timings to allow the bus to get through the junction. This will save vehicles idling and improve journey times

Encourage uptake of lower emission vehicles and alternative fuels (EVs, CNG, H_2)

[29] http://www.scoot-utc.com/

Electric Vehicles (EVs), as well as those powered by compressed natural gas (CNG) and hydrogen (H_2) are essentially zero tailpipe emission. Clearly these will have great air quality benefit. Regionally, the Sheffield City Region Air Quality Action Plan states "at present the uptake of low emission vehicles amongst the public has been limited, as with most products in their infancy, although there has recently been some acceleration in the number of nationally registered EVs. Growth in uptake is forecast over the next 25 years as car manufacturers move to develop low emission alternatives. The gradual shift to low emission, electric and hybrid vehicles will only be possible if research and investment in an infrastructure that can support them is undertaken at national and local level. The partners have a key role to play by directing resources to encourage the shift to a low emission economy."

The Energy Savings Trust website (http://www.energysavingtrust.org.uk/travel/electric-vehicles) provides a detailed discussion around the use of low emission vehicles, including electric vehicles. This site includes information relating to available grants for purchasing electric vehicles, running costs, range issues and location of re-charging facilities. The UK's government's official advisers, the Committee on Climate Change, say 60% of new car sales in the UK should be electric by 2030, in order to deliver the nation's carbon cuts at the least cost.

With this expected major shift in sales of new electric vehicles (especially cars), the Council (along with all other local authorities) is now partnered with the NHS Fleet Recognition Scheme, which enables Council staff to purchase an EV vehicle. As of 2025 a number of staff have taken up this offer. The majority of Council owned car parks in the town centre now have an EV charging point and through the LEVI funding it is anticipated that this will be rolled out to the Principal Towns. Appendix D contains the Barnsley MBC Air Quality and Emissions Good Practice Guidance, which recommends to developers suitable mitigation to offset the air quality impact of future development. This guidance recommends, where appropriate, the installation of electric vehicle charging points for these future developments.

The Council is trialing an electric vehicle, previously purchased from Defra air quality grant funding, in order to demonstrate the suitability of such technology to undertake routine Council business. The Council is therefore keen to facilitate the uptake of such low emission vehicles.

Encourage cycling and walking (developing infrastructure and campaigns)

In 2021, the Council received over £13m from the Transforming Cities Fund, which was later rolled into the City Region Sustainable Transport Settlement (a further £45m) for infrastructure projects aimed specifically for bus corridor improvements and Active Travel schemes. A full list of schemes are listed in Table 1. There have also been funds secured through the newly formed Active Travel England; currently in Tranche 5 of funds being released. . Specifically, the guidance states that "Investing in cycling (….and walking….) can help bring about a modal shift away from use of private vehicles, thereby reducing emissions of relevant air pollutants. There are also co-benefits in encouraging cycling, e.g. on health".

Care4Air

Care4Air is the South Yorkshire air quality campaign, owned by the four South Yorkshire local authorities and the SYPTE. This scheme has been operating for several years (see http://www.care4air.org/). This campaign aims to encourage behavioral change using a positive "social marketing" message in order for individuals and organisations to reduce emissions. In the past, this campaign has been very successful and has received national recognition. Consideration needs to be given regarding the direction of the scheme, and again, identify appropriate funding.

ECO Stars Heavy Duty Vehicle (HDV) Recognition Scheme

Barnsley MBC

The ECO Stars fleet recognition scheme is a free scheme that aims to help fleet operators improve efficiency and reduce fuel consumption, with the subsequent benefit of reducing emissions. This scheme was originally set up by Barnsley and neighbouring South Yorkshire local authorities as a means of working with this fleet sector (HGVs, buses, coaches and vans) in order to improve air quality. The success of the scheme has resulted in an approach by the Transport Research Laboratory to take over the running of the scheme and the intellectual property rights, which the Council agreed to.

[30] eDriving Solutions Ltd., June 2015, An Evaluation of the South Yorkshire Safer Roads Partnership ECO-Business Driving Scheme

Specific schemes for the Langsett AQMA (AQMA No. 6)

The air quality issues within Langsett are still being monitored via diffusion tubes and further discussion will taking place with national highways to see if any further improvements can be made to further lower N02 emmisions on this route.[1]. To summarise, a major trans-pennine road (A616) passes through the village of Langsett. A significant number of HGVs use this road, which is subject to a gradient and right hand turn junction within the village. The A616 is a National Highways administered road. This road is also part of proposed an enhanced trans-pennine connectivity scheme, and initial discussions have been held with National HIghways on appropriate air quality mitigations within the context of the proposed scheme. Further work is required to progress this issue, but it is hoped that this work will continue in 2017-18, with the outcomes and way forward to be reported in next years' Annual Status Report. It must be stressed however that improvement in air quality in Langsett requires the active involvement and commitment of National HighwaysPlanning applications – air quality assessment and mitigation

In order to mitigate more effectively against the air quality impact of future development, this service will continue to implement local guidance. The guidance provides a template for integrating air quality considerations into land-use planning and development management policies that can influence the reduction of road transport emissions. Consequently, this has been added to this Barnsley MBC Air Quality Action Plan.

The air quality assessments follow a three stage process:

- Stage 1: Determining the classification of the development proposal
- Stage 2: Assessing and quantifying the impact on local air quality

[31] Barnsley MBC, November 2013, Air Quality Further Assessment Report

• Stage 3: Determining the level of a mitigation required by the proposal to meet Local Development Plan requirements

This local guidance is complimented nationally by the requirements of the National Planning Policy Framework.

In addition, the planning process can consider the siting of any new large industrial sources. Underpinning the planning process are the relevant planning policies. Currently these are contained within the Local Plan adopted in 2019. All relevant planning policies relating to air quality can be viewed at Local Plan

These policies require an applicant to consider air quality in these circumstances. Should this assessment (which is appraised by the local authority) indicate exceedance of any UK air quality objectives / EU limit values, then the proposed development will require appropriate mitigation, or the application may then be refused on air quality grounds.

Subsequent to the planning process, it is likely that the siting of a large industrial process would then be subject to the issue of an environmental permit, by either the Environment Agency or Barnsley MBC, dependent on the nature and size of any installation. This process would introduce further scrutiny of any air quality issues.

Similarly, the impact of introducing exposure close to these installations can be assessed (such as the encroachment of domestic housing on large industrial sources). Should this assessment indicate exposure to air pollution exceeding UK objectives / EU limit values, then any application for any such development would require suitable mitigation or would be refused on air quality grounds.

There is a finite number of large industrial installations in the borough, and this authority is also aware of large industrial installations in neighbouring authorities, so the impact of these can also be considered, such this prove necessary.

Procurement

Consideration can be given to adoption of Barnsley MBC procurement procedures, which take account of the opportunities to encourage, require or acquire lower emission vehicles.

Assessment of air quality impact of major traffic schemes

The air quality impact of any future major traffic schemes is considered in detail and recommendations for mitigation are made when appropriate.

Control over emissions from Part B and A2 processes, and act as consultees for Part A1 processes

Continuing control over those industrial processes which require an environmental permit ensures that air emissions are kept at a legislative minimum or below. Barnsley MBC are also becoming aware of the proposed Medium Combustion Plant Directive. We are already considering this issue, especially for planning applications for the installation of "short term operating reserve" (STORs), and the subsequent impact of these on air quality in the borough. We note however that the UK's transposition of the directive is still under consultation, so any future implementation of the directive by the local authority will be addressed in our future air quality Annual Status Reports.

In addition, consideration has been given to the potential effects of the proposed combustion activity (diesel engines with a net rated thermal input of 1-50 MW), intended to be introduced into the Environmental Permitting Regulations 2010 (as amended) by January 2019.

This relates to the possible growth of diesel arrays, and the use of standby generators. We are already considering this issue, especially for planning applications for the installation of "short term operating reserve" (STORs), and the impact of air quality in the borough. We are asking for appropriate air quality assessments, with the methodology agreed with the local authority. These assessments are required to assess these installation's predicted emissions on local air pollution concentrations, including comparison against UK air quality objectives / EU limit values. Should this assessment (which is appraised by the local authority) indicate exceedance of any UK air quality objectives / EU limit values, then the proposed development will require appropriate mitigation, or the application may then be refused on air quality grounds.

Enforcement of the Clean Air with regards to industrial smoke

Continuing control of industrial air emissions.

Enforcement of the Clean Air with regards to domestic smoke control

Continuing control of domestic air emissions. Barnsley MBC is aware of the growing impact of domestic sources on $PM_{2.5}$ emissions from biomass burning. The entire Barnsley borough is covered by smoke control orders, and Barnsley MBC offer advice to householders who are considering using biomass and solid fuel appliances. Further information can be found at https://www.barnsley.gov.uk/services/pollution/air-pollution/smoke-control. All stoves or boilers intended for domestic use in the Barnsley borough therefore will have to be exempted appliances or the householder will need to use an authorised fuel. Furthermore, Barnsley MBC investigate complaints regarding domestic smoke under the requirements of the Clean Air Act 1993. Action ten of this Plan consequently deals with enforcement of the Clean Air Act with regards to domestic smoke control, which include emissions from domestic solid fuel stoves and boilers.

Barnsley MBC have also undertaken monitoring of $PM_{2.5}$ concentrations within parts of the borough[32], which may be subject to domestic $PM_{2.5}$ emissions. This monitoring concluded that air quality standards relating to $PM_{2.5}$ were not being exceeded.

Investigation of nuisance complaints, including appropriate action to resolve the problem

Regulatory services will continue to investigate complaints and monitor the borough to control domestic and industrial emissions. To ensure complaince

Smoky diesel Hotline

Central Government still operate their web page for the reporting of excessively smoking heavy goods vehicles, coaches and buses (https://www.gov.uk/report-smoky-vehicle). The Council can publicise this hotline locally, and lobby Central Government, whether it would be feasible to develop a similar hotline for light duty vehicles. Vehicle pollution link to reporting for BMBC

Consolidation Centres

Should opportunity for these arise in the Borough, then the air quality benefits of these should be encouraged.

Barnsley MBC fleet improvement

Barnsley Council's fleets are already members of the ECO Stars HDV fleet recognition scheme. Consequently, they are trialling an "enhanced roadmap" for the ECO Stars scheme, with the aim of identifying opportunities to further reduce emissions.

Car and Lift sharing programmes

The Liftshare scheme (https://southyorkshire.liftshare.com) is already operating in South Yorkshire. There is opportunity to further publicise this scheme to fleets in the Barnsley area.

[32] Barnsley MBC, Regulatory Services, January 2016, $PM_{2.5}$ Monitoring in Barnsley 2015-15, report to Barnsley MBC, Public Health

Priority parking for Low Emission Vehicles

Barnsley MBC has a new Car Parking Strategy, which includes the provision of EV charging in its car parks. as means of encouraging their use in the Barnsley urban area.

Promoting Travel Alternatives

We will be replacing the current Supplementary Planning Document in time for the next Local Plan with a new Active Travel Strategy which will be aimed at developers to encourage sustainable modes of transport in their new housing (and commercial) developments.
We will also be introducing a workplace travel plan for Council officers.

Appendix A: Response to Consultation

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

Consultee	Category	Response
Langsett Parish Council	Transport	Concern was raised by Langsett Parish Council that the proposed actions to improve air quality within AQMA 6 (Langsett) were too vague and without timelines. Highways England are the authority for the A616 through Langsett. Barnsley MBC will endeavour to set up a joint working party involving BMBC, LPC and NH to address these concerns.
Environment Agency	Industry	Further consideration to be given in the Plan to emissions from stationary sources. This has been addressed in section 1.8 above.
Barnsley Council Public Health	Transport	Consideration of 20 mph zones and vegetation barriers as detailed in the draft NICE guidance – addressed in section 1.8 above. Strengthen links with NHS and social car partners – will be addressed by Barnsley MBC Public Health and Regulatory Services as implementation of the Plan progresses. Driver training to reduce speeds and emissions, particularly working with NHS / social care / voluntary sector fleets.
Local resident Local resident	Transport	Consideration of an assisted purchase scheme for low emission vehicles – currently the Council has no facility for such schemes. The Council now partners with the NHS Fleet Recognition Scheme for the purchase of EV and Hybrid vehicles
	Transport	Concern that the Plan did not address the air quality impact of new development and that the Plan did not consider other sources of traffic emissions as well as diesel cars. The resident has been directed to those sections of the Plan where these issues have been addressed.

Local ward member	Transport	A local ward member requested that the Plan had more consideration of the role of electric vehicles have in securing future road traffic emission reduction. This has subsequently been undertaken in the Plan.
Local ward member	Other	A local ward member raised the issue of public smoking. The member has been responded to directly with the Council's Public Health plans to deal with this issue. This issue is separate to the aims and purpose of this Action Plan.

External consultees contacted directly

Neighbouring local authorities (Doncaster, Rotherham, Sheffield, Wakefield, Kirklees, High Peak)

Environment Agency

Highways England

Stagecoach

South Yorkshire Passenger Transport Executive

Sheffield City Region Combined Authority

Peak District National Park

Freight Transport Association

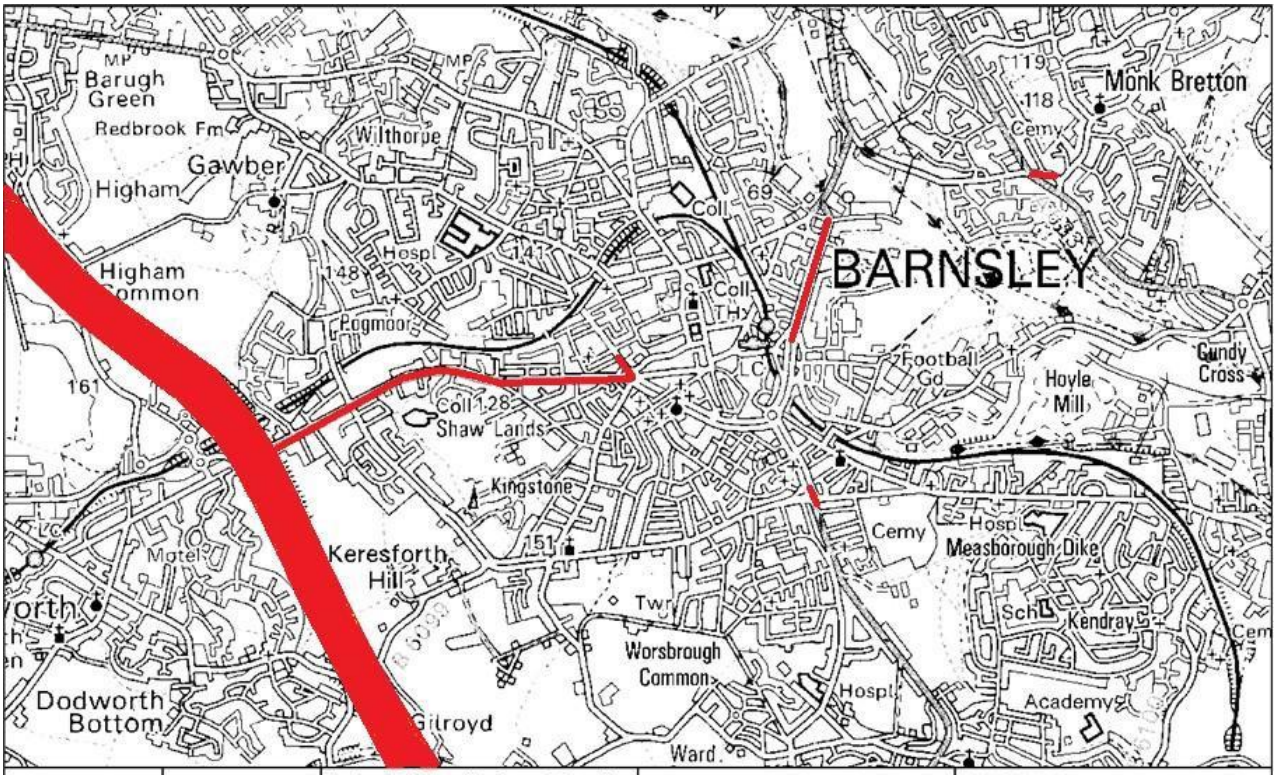
Barnsley and Rotherham Chamber of Commerce

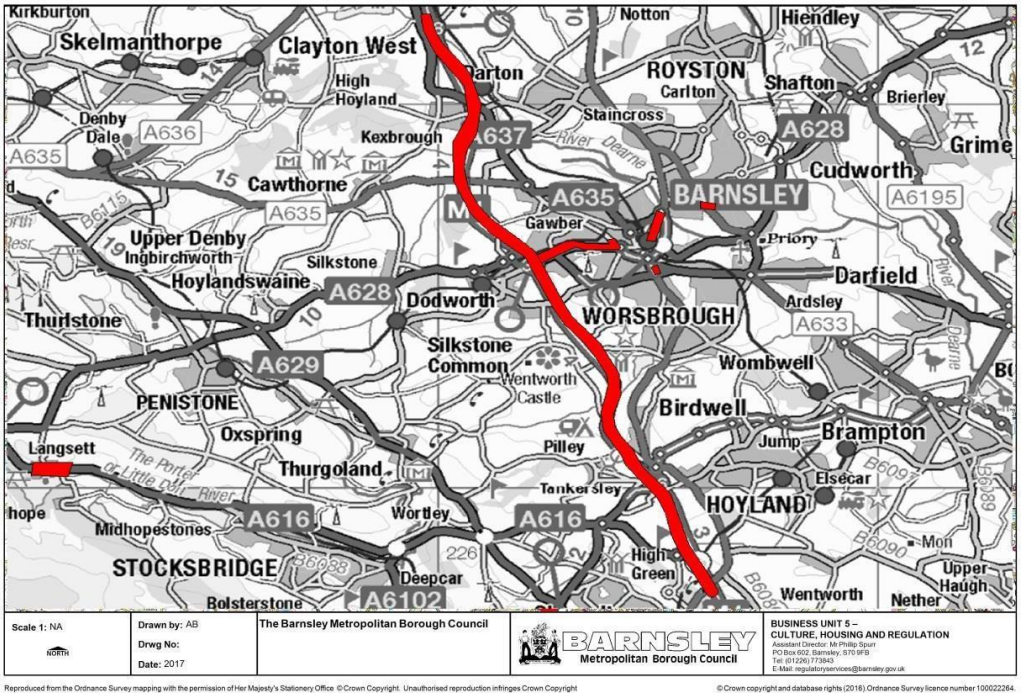
Appendix B: Reasons for Not Pursuing Action Plan Measures

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

Action category	Action description	Reason action is not being pursued (including Stakeholder views)

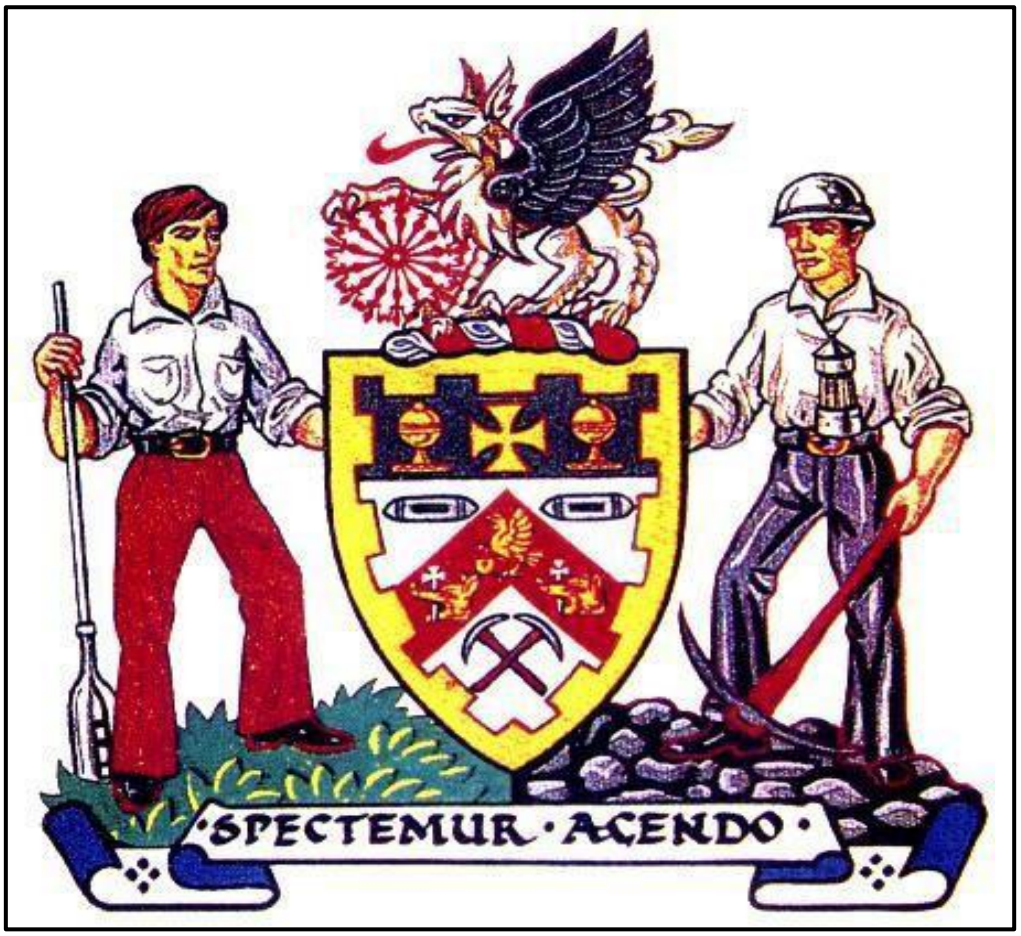
Appendix C: Maps of Existing AQMAs





Appendix D - AIR QUALITY AND EMISSIONS GOOD PRACTICE PLANNING GUIDANCE

Barnsley Metropolitan Borough Council



AIR QUALITY AND EMISSIONS

GOOD PRACTICE PLANNING GUIDANCE

September 2014

This technical guidance is aimed at helping planning authorities deliver national air quality objectives through cost effective service planning

CONTENTS

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1. Summary

1.1 The spatial planning system has an important role to play in improving air quality and reducing exposure to air pollution. Whilst planning policy cannot solve immediate air quality issues, it has a role to play so that any likely scheme impacts are reasonably mitigated and future scheme occupants are able to make more sustainable vehicle choices.

1.2 This technical guidance deals primarily with those pollutants regulated under the local air quality management (LAQM) regime and the impact of traffic emissions, although the increasing use of biomass boilers is now becoming an important planning issue. The assessment and control of dust impacts during demolition and construction is also considered, as dusts contribute to airborne particulate matter, as well as being dust soiling. Greenhouse gas emissions are not addressed explicitly, as they are covered by other initiatives, but synergies exist between measures to minimise climate change and local air quality impacts.

1.3 The guidance provides a template for integrating air quality considerations into land-use planning and development management policies that can influence the reduction of road transport emissions. Consequently, it will be added to the existing Barnsley MBC Air Quality Action Plan.

1.4 The air quality assessments follow a three stage process:

- Stage 1: Determining the classification of the development proposal
- Stage 2: Assessing and quantifying the impact on local air quality
- Stage 3: Determining the level of a mitigation required by the proposal to meet Local Development Plan requirements

1.4 This technical guidance deals with those pollutants regulated under the local air quality management (LAQM) regime and are associated with the impact of traffic emissions. Greenhouse gas emissions are not addressed explicitly, as they are covered by other initiatives, but synergies exist between measures to minimise climate change and local air quality impacts.

1.5 The guidance provides a template for integrating air quality considerations into land-use planning and development management policies that can influence the reduction of road transport emissions and to be used to update air quality action plans.

The air quality assessment process follows a three stage process:
1. Determining the classification of the development proposal;
2. Assessing and quantifying the impact on local air quality;
3. Determining the level of a mitigation required by the proposal to meet Local Development Plan requirements.
The assessment process is summarised in the flow chart in Appendix 6.

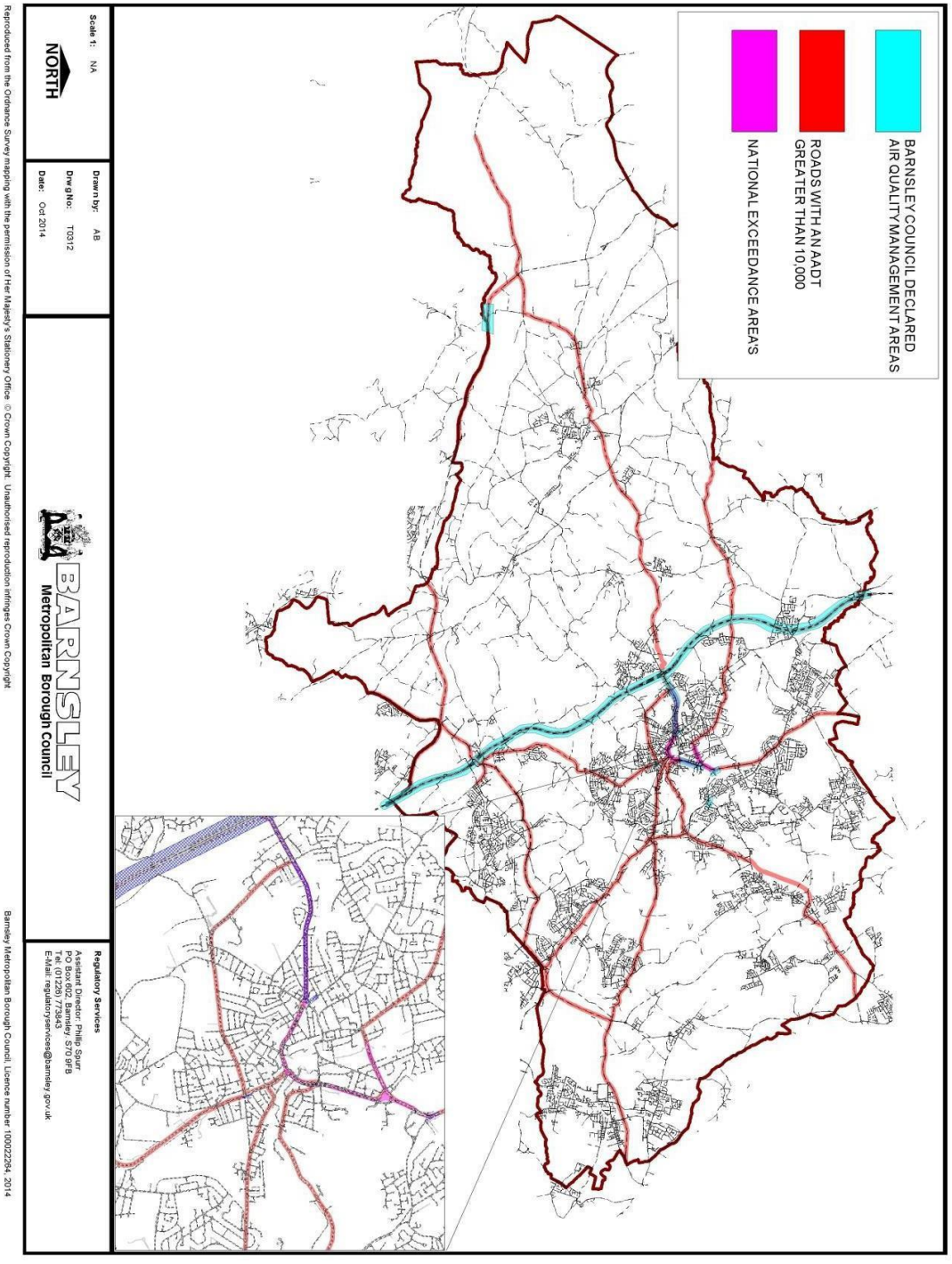
2. Pre-Planning Discussions

2.1 In order to avoid unnecessary delays in the planning process and ensure optimum scheme design and sustainability, it is vital for communication at an early stage in any significant proposal. It is therefore essential that pre-application discussions with the relevant air quality personnel to confirm the scale of development and the assessment requirements are undertaken
Air Quality Assessment and Mitigation Development Control
When will an Air Quality Assessment be required?

1. *When the proposal meets or exceeds the criteria in Table 2 (page 8)*
2. *When the proposed development **of any size** is classed as C1 to C4 or D1 and is proposed for the Air Quality Assessment Area identified on Map 1*

The flow chart in Appendix 6 assists in this identification process.

Map 1: Barnsley Air Quality Assessment Areas



3. Introduction

3.1 New developments have the potential to affect air quality. Local planning policy will play a significant role in ensuring that development schemes are designed to be sustainable. This guidance has been developed to:

- Introduce an air quality assessment scheme which includes the quantification of impacts, formulating damage costs and identifying mitigation measures to be implemented to negate the impact.
- Tackles cumulative impact.
- Provides clarity and consistency of the process to developers, planners and local communities.

3.2 The major air pollution concern within the Barnsley borough is poor air quality due to transport emissions. Barnsley has seven air quality management areas (AQMAs), all declared due to exceedance of the annual average objective for nitrogen dioxide (NO_2), a pollutant strongly associated with transport emissions. Barnsley's AQMAs are listed in the table below:

Table 1: Barnsley's AQMAs

AQMA No.	Adjacent roads / junctions	Year declared
1	M1 Motorway, 100 metres either side of the central reservation within the Barnsley Borough	2001
2A	A628 Dodworth Road	2005
3	Junction of A61 Wakefield Road and Burton Road	2005
4	A61 Harborough Hill Road	2008
5	Junction of A633 Rotherham Road and Burton Road	2008
6	A616 passing through Langsett	2012
7	Junction of A61 Sheffield and A6133 Cemetery Road	2012

3.3 In addition, the publication of national exceedance areas (http://uk-air.defra.gov.uk/data/gis-mapping) has highlighted roads within the borough above the NO_2 annual average objective, which require further consideration.

3.4 The public health impacts of air pollution are also becoming clearer; particularly the impact of $PM_{2.5}$ particles. $PM_{2.5}$ refers to the airborne particle fraction less than 2.5 microns in size. This particle fraction directly relates to the Public Health Outcomes Framework Health Protection indicator 3.01 "Fraction of Mortality attributable to Particulate Air Pollution". Extensive research has shown that these particles are the major outdoor air pollution contributor to poor health and it is currently considered that there may no known absolute safe level of exposure.

4. Planning Policy Framework

4.1 National Policy

National planning policy is set by the National Planning Policy Framework (NPPF) National Planning Policy Framework The NPPF December 2024 places a general presumption in favour of sustainable development, stressing the importance of local development plans. Paragraph 187(e) states that planning should: *Planning policies and decisions should contribute to and enhance the natural and local environment by: preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans;*

4.1.1 It goes on to state (paragraphs 120 and 124) that:

"To prevent unacceptable risks from pollution and land instability, planning policies and decisions should ensure that new development is appropriate for its location. The effects (including cumulative effects) of pollution on health, the natural environment or general amenity and the potential sensitivity of the area or proposed development to adverse effects from pollution, should be taken into account.

"Planning policies should sustain compliance with and contribute towards EU limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas. Planning decisions should ensure that any new development in Air Quality Management Areas is consistent with local air quality action plans".

4.1.2 To support the NPPF, Defra have produced National Planning Policy Guidance (NPPG), including one relating to air quality. Paragraph eight of this guidance (reference ID: 32-008-20140306) deals specifically with mitigating air quality impact and states:

"Mitigation options where necessary will be locationally specific, will depend on the proposed development and should be proportionate to the likely impact. **It is important therefore that local planning authorities work with applicants to consider appropriate mitigation so as to ensure the new development is appropriate for its location and unacceptable risks are prevented.** Planning conditions and obligations can be used to secure mitigation where the relevant tests are met.

Examples of mitigation include:

- the design and layout of development to increase separation distances from sources of air pollution;
- using green infrastructure, in particular trees, to absorb dust and other pollutants;
- promoting infrastructure to promote modes of transport with low impact on air quality;
- controlling dust and emissions from construction, operation and demolition; and
- contributing funding to measures, including those identified in air quality action plans and low emission strategies, designed to offset the impact on air quality arising from new development."

4.2 Local Planning Policy

- The Planning and Compulsory Purchase Act 2004, amended by the Localism Act 2011 requires planning authorities to prepare Development Plans Barnsley's Devel Local Plan adopted 2019;
- Joint Waste Plan adopted in 2012
- Neighbourhood Development Plans

In addition we have a suite of Supplementary Planning Documents, Planning Advice Notes and Masterplan Frameworks.

4.2.2 The Local Plan identifies sites for future development and includes a number of strategic and development management policies relating to local air quality management that will fulfil the National Planning Policy Framework sustainable development criteria. This technical guidance supports the implementation of the strategic and development policy framework. The Local Plan policies relating to pollution control and air quality are contained in Appendix 1.

5. Local Air Quality Management

5.1 The Environment Act 1995 established a local air quality management regime. It requires local authorities to review and assess ambient air quality in their areas against health based standards for a number of specific pollutants prescribed in the Air Quality Regulations 2000 and Air Quality (Amendment) Regulations 2002. If there is a risk that levels of air pollution in any part of the authority's area will be higher than the prescribed objectives, the authority is required to designate an Air Quality Management Area (AQMA). It is then required to produce an Action Plan which sets out the measures it intends to take in pursuit of the objectives.

5.2 It is not necessarily the case that a proposed development in an area of poor air quality will have a negative impact. However, it is important to recognise when such development might introduce additional people into an area of poor air quality. The declaration of an AQMA does not mean that there will be no new development within that area. Rather, it means that greater weight must be given to the consideration of air quality impacts and their mitigation.

5.3 In addition, the boundary of an AQMA does not necessarily define the limit of the area of poor air quality. The only constraint on the boundary definition is that it should be at least as large as the area of exceedance, where there is relevant exposure.

5.4 The fact that a development is within or close to an AQMA does not mean that it is necessarily affecting an area of exceedance of the objective, or that it is being affected by air pollution that exceeds the objective. On the other hand, a development could introduce new exposure into an area of poor air quality, which has not been identified and declared as an AQMA, as previously there was no relevant exposure.

6. Air Quality and Emissions Mitigation Assessment Process

6.1 Stage 1: Development Type Classification:

Three levels of development classification are determined using adapted criteria from the Department for Transport[33].

Table 2: Criteria for Development Classification

Land Use	Description	TA Required
Food Retail (A1)	Retail sale of food goods to the public – supermarkets, superstore, convenience food store	>800 m^2 (GFA)
Non-Food Retail (A1)	Retail sale of non-food goods to the public; but includes sandwich bars or other cold food purchased and consumed off site	>1500 m^2(GFA)
Financial and professional services (A2)	Banks, building societies and bureaux de change, professional services, estate agents, employment agencies, betting shops.	>2500 m^2(GFA)
Restaurants and Cafes (A3)	Use for the sale of food for consumption on the premises.	>2500 m^2(GFA)
Drinking Establishments (A4)	Use as a public house, wine-bar for consumption on or off the premises.	>600 m^2(GFA)
Hot Food Takeaway (A5)	Use for the sale of hot food for consumption on or off the premises.	>500 m^2(GFA)
Business (B1)	(a) Offices other than in use within Class A2 (financial & professional). (b) Research & development – laboratories, studios. (c) Light industry	>2500 m^2(GFA)
General industrial (B2)	General industry (other than B1).	>4000 m^2(GFA)
Storage or Distribution (B8)	Storage or distribution centres – wholesale warehouses, distribution centres & repositories.	>5000 m^2(GFA)
Hotels (C1)	Hotels, boarding houses & guest houses	>100 bedrooms
Residential Institutions (C2)	Hospitals, nursing homes used for residential accommodation and care.	>50 beds
Residential Institutions (C2)	Boarding schools and training centres	>150 students
Residential institutions (C2)	Institutional hostels, homeless centres.	>400 residents
Dwelling Houses (C3)	Dwellings for individuals, families or not more than six people in a single household.	>50 units
Non-Residential Institutions (D1)	Medical & health services, museums, public libraries, art galleries, non-residential education, places of worship and church halls.	>1000 m^2(GFA)
Assembly and Leisure (D2)	Cinemas, dance & concert halls, sports halls, swimming, skating, gym, bingo, and other facilities not involving motorised vehicles or firearms.	>1500 m^2(GFA)
Other		
1. Any development generating 30 or more two-way vehicle movements in any hour		
2. Any developments generating 100 or more two-way vehicle movements per day		
3. Any development proposing 100 or more parking spaces		
4. Any relevant development proposed in a location where the local transport infrastructure is inadequate		
5. Any relevant development proposed in a location adjacent to an Air Quality Management Area (AQMA)		

1. MINOR Proposal: Development proposals that fall below the above criteria.

[33] http://webarchive.nationalarchives.gov.uk/20100409053417/http://www.dft.gov.uk/adobepdf/165237/202657/guidanceontaappendixb

2. MEDIUM Proposal: Development proposals that meet the above requirements.
3. MAJOR Proposal: Development proposals that meet the above requirements and the additional criteria set out in table 2.

Table 3: Additional Trigger Criteria for Major Developments

- Where the proposed development falls within the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2011 and includes air quality and/or transport as a specific likely impact.
- Proposals located within the area identified in Map1
- Proposals that include additional HGV movements by more than 10% of total trips.

Where significant demolition and construction works are proposed.

6.2 Stage 2: Air Quality Impact Assessment

MINOR and MEDIUM Classified Proposals:

6.2.1 Smaller development proposals may not in themselves create an additional air quality problem but traffic emissions from these developments will add to local air pollution and the developments themselves could potentially introduce more people likely to be exposed to existing levels of poor air quality. An assessment of the likelihood of introducing additional exposure will be determined using the following criteria:

- The proposal is one of the Land Use types:
    - C1 to C3 in table 2;
    - C4 (Homes of Multiple Occupation);
    - D1 in table 2.

And:
The proposal is within the area identified on Map 1 (this includes the area within or adjacent to an AQMA; applicable roads; and includes roads at or above the relevant national objective highlighted on the Defra GIS modelled maps - *http://uk-air.defra.gov.uk/data/gis-mapping*).

6.2.2 The outcome of the exposure assessment will determine the level of mitigation required make the development acceptable. Should there be no acceptable mitigation the recommendation to the planning officer will be to consider refusing the proposal on air quality grounds. A planning application will not be validated until such an Air Quality assessment is submitted.

MAJOR Classified Proposals

6.2.3 The scale and nature of this type of proposal is such that a detailed air quality assessment will be required to determine the impact on public health and the local environment. Once again, a planning application will not be validated until such an assessment is submitted. The assessment requires:

A. The identification of the level of exposure through the change in pollutant concentrations including cumulative impacts arising from the proposal, during both demolition/construction operations and operational phases. Mitigation measures should be identified and modelled where practicable.
B. The calculation of pollutant emissions costs from the development.

A. The methodology to be used for the determination of pollutant concentration change should meet the requirements of the Department for the Environment, Food and Rural Affairs (Defra) Technical Guidance Note LAQM TG(09)[34]. Further details of the air quality assessment requirements are shown in Appendix 2.

B. The pollutant emissions costs calculation will identify the environmental damage costs associated with the proposal and determine the amount (value) of mitigation that is expected to be spent on measures to mitigate the impacts. The calculation utilises the most recent Defra Emissions Factor Toolkit[35] to estimate the additional pollutant emissions from a proposed development and the latest DEFRA IGCB Air Quality Damage Costs for the specific pollutant of interest, to calculate the resultant damage cost[36]. The calculation process includes:

- Identifying the additional trip rates generated by the proposal (from the Transport Assessment);
- The emissions calculated for the pollutants of concern (NOx and PM_{10}) [from the Emissions Factor Toolkit];
- The air quality damage costs calculation for the specific pollutant emissions (from Defra IGCB);
- The result is totalled for a five year period to enable mitigation implementation.

6.2.4 The calculation is summarised below with further details of the process along with an example calculation are shown in Appendix 3.

Box 1: Road Transport Emission Calculation Summary

Road Transport Emission Increase = ∑[Estimated trip rate for 5 years X Emission rate per 10 km per vehicle type X Damage Costs]

5.6 To clarify, the derived calculated damage costs for each major development are not for local authority use, but to assist the developer in assessing the proportionate financial commitment for the required mitigation.

[34] http://laqm.defra.gov.uk/technical-guidance/index.html
[35] http://laqm.defra.gov.uk/review-and-assessment/tools/emissions.html#eft
[36] https://www.gov.uk/air-quality-economic-analysis

6.3 Stage 3: Mitigation

6.3.1 The outcome of Stage 2 (Assessment) identifies the level of air quality impact and is then used to determine the level of mitigation required to negate the potential effects upon health and the local environment.

6.3.2 The scale of damage cost will determine the level of appropriate mitigation required for specific proposals. Measure identification will be assisted by:

- Outcomes from the Transport Statement/Assessment and any Travel Plan
- Specific needs identified in site specific spatial policy allocations;
- Travel Awareness/Planning and Highway Development requirements;
- Defra air quality guidance (Defra Measures Guidance)

6.3.3 Where mitigation is not integrated into a proposal, the Local Planning Authority will require this through planning conditions. The NPPF (paragraph 152) suggests that "where adequate mitigation measures are not possible, compensatory measures may be appropriate". If on-site mitigation is not possible then the Local Planning Authority will seek compensation for the identified air quality impacts through a section 106 agreement.

6.3.4 Default mitigation measures are presented for each type of proposal that demonstrate a minimum requirement. This is not an exhaustive list and will be adapted for particular locations and needs identified by relevant officers and the scale of damage costs. The authority would welcome the opportunity to work to devise innovative measures that will lead to improving local air quality. To confirm, when type 2 mitigation is required, type 1 will also be required. For type 3 mitigation, type 1 and 2 will also be required.

TYPE 1 (Minor) Proposal Mitigation:

6.3.5 If the proposal meets the exposure criteria in Stage 2, further mitigation is required to reduce the level of exposure. This will be in the form of:

- Possible short term screening monitoring or utilising the distance calculation provided by Defra (Defra Distance) at the proposed location to identify the level of exposure;
- Redesigning the proposal to reduce the ingress of pollution;
- Including a stand-off distance and/or vegetation boundary from the development.

6.3.6 A key theme of the NPPF is that developments should enable future occupiers to make "green" vehicle choices and (paragraph 35) "incorporate facilities for charging plug-in and other ultra-low emission vehicles". Therefore, an electric vehicle recharging provision rate is expected in addition to mitigation arising from the exposure assessment. To prepare for increased demand in future years, appropriate cable provision should be included in the scheme design and development, in agreement with the local authority and include the default mitigation listed below.

Box 2: TYPE 1 (Minor) Suggested Mitigation Options

Residential:
1 charging point per unit (dwelling with dedicated parking) or 1 charging point per 10 spaces (unallocated parking).
The use of such mitigation measures as designing the layout of the site taking into account air quality; and the use of green infrastructure or contributing to the funding of green infrastructure at schools etc.
Provision of secure cycle storage
Provision of incentives for the use of public transport

Details of the electric charging specification are shown in appendix 4.

6.3.7 This list is not meant to cover all possible mitigation measures. Where innovative measures are proposed, these should have demonstrable air quality benefits. If measures are provided in mitigation of potential traffic impacts, these will be permitted to count towards the air quality mitigation measures.

TYPE 2 (Medium) Proposals Mitigation:

6.3.8 Proposals meeting the Type 2 criteria in table 2 will require a detailed Travel Plan. Travel Plan guidance is provided in Appendix 5.
In respect of the Travel Plan it is essential that:

- The content of the travel plan is fully assessed prior to its approval in conjunction with local authority travel plan and highway development control officers. Pre-application advice will be essential.
- The agreed targets and objectives included in the travel plan are secured for implementation by mutual agreement of the local authority and the developer/applicant (normally by means of a Section 106 agreement).
- The outputs of the travel plan (typically trip levels and mode split) are annually monitored against the agreed targets and objectives.
- Should the travel plan not deliver the anticipated outputs or meet the targets and objectives further mitigation/alternative/compensation measures need to be identified and implemented.
- A named co-ordinator is essential to the success of the travel plan. For larger schemes a commitment in terms of staff resource allocation will be expected.

6.3.9 The NPPF identifies a Travel Plan as a "key tool" to promoting and delivering sustainable transport and that all transport mitigation measures may be included within the Travel Plan. The default mitigation measures to be incorporated into the scheme design include those listed below. The list is not exhaustive and there may be additional issues that are site-specific and reflect local conditions, as well as other material considerations.

Box 3: TYPE 2 (Medium) Suggested Mitigation Options

All minor proposal mitigation measures could be considered (as set out in Box 2)
Commercial / Retail – 10% of parking spaces to be provided with an electric vehicle charging point, this may be phased with an initial 5% provision and the remainder at an agreed trigger level
Industrial – 10% of parking spaces to be provided with an electric vehicle charging point; this may be phased with an initial 5% provision and the remainder at an agreed trigger level
All – Travel Plan This could include: An agreed strategy for discouraging high emission vehicle use and encouraging modal shift (i.e. to public transport, cycling and walking), as well as uptake of low emission fuels and technologies Improved pedestrian access to public transport New or improved bus stop infrastructure; Provision of ticketing Site layout designed to encourage walking; Cycle paths to link to local cycle network
Commercial specific All commercial vehicles should comply with current or the most recent European Emission Standards from scheme opening, to be progressively maintained for the lifetime of the development Fleet operators should provide a strategy for reducing emissions, including the uptake of low emission fuels and technologies such as ultra-low emission service vehicles Fleet operators should consider joining schemes such as the South Yorkshire ECO Stars scheme

TYPE 3 (Major) Proposal Mitigation

6.3.10 The pollution damage costs attributed to the proposal emission changes will determine the level of mitigation compensation required to offset the impact of the development. A suite of default compensation measures beyond the proposal scheme design are listed below. This is not an exhaustive list and may be adapted for particular locations and needs identified by relevant officers. The type, scale and specificity of measures will be agreed with the planning authority.

Box 4: TYPE 3 (Major) Suggested Mitigation Options

MEDIUM proposal measures

Support measures to reduce the need to travel:

- Local sourcing of staff, products and raw materials.
- Development and use of hub distribution centres employing low emission deliveries.
- Explore alternative working practices – flexitime, teleworking, homeworking, videoconferencing, compressed working hours.

Support measures to reduce private car use:

- Development of car clubs and car sharing with financial incentives and promotion.
- Use of workplace car clubs and car sharing with financial incentives and promotion.
- Use of workplace pooled low emission vehicles – cars, vans, taxis, bicycles.
- Provision of dedicated low emission shuttle bus including managed pick-up and drop-off.
- Contribution to the emerging low emission vehicle infrastructure.
- Contribution to site low emission waste collection services.
- Incentives for the take-up of low emission vehicle technologies and fuels.
- Support driver training schemes.

Measures to support improved public transport:

- Provision of new or enhanced public transport services to the site.
- Shuttle services to public transport interchange, rail station or park and ride facilities.
- Support improving information services for public transport.
- Promoting low emission bus service provision.
- Support air quality monitoring programmes.

Further measures to promote cycling and walking:

- Improvements to district walking and cycling networks including lighting, shelters, and information points and timetables.
- Bike/e-bike hiring schemes.
- Guaranteed ride home in emergencies.
- Provision of secure and safe cycle parking facilities.
- Support cycle training.
- Supporting community / local organisation groups to promote sustainable travel.

6.3.11 It is likely that there will be additional Travel Plan measures required outside the air quality requirements. Air quality measures should not be seen as the complete number of measures.
Such agreed measures will be taken forward by condition where possible, or through the use of Section 106 agreements.

Proposal mitigation statement

6.3.12 Each development will require a brief mitigation statement which must include:

- The calculated damage cost (Major proposals).
- Proposed mitigation/compensation measures.

- Estimated mitigation cost (Major proposals) that is equivalent to the value of the emissions calculation (appropriate to the type and size of development and local policy requirements);
- A proposed demolition/construction management plan that includes:
    - A brief project description and likely sources of dust emissions;
    - Measures to be adopted to minimise dust emissions;
    - Emergency measures to be adopted in the event of unforeseen circumstances;
    - Incident logging and reporting procedures.

7. Planning Recommendation

7.1 The impact on air quality is a material planning consideration in the determination of a planning application. Each decision must be a balance of all material considerations depending upon the individual merits and circumstances. The weight to be given to the impact on air quality in the consideration of a planning application and the acceptability of proposed mitigation measures lies with the relevant local planning authority. Any agreed measures will be taken forward by condition where possible, or through the use of Section 106 agreements.

Appendix 1: Barnsley MBC Planning Context

Policy AQ1 Development in Air Quality Management Areas

Development which impacts on areas sensitive to air pollution[13] in air quality management areas will be expected to demonstrate that it will not have a harmful effect on the health or living conditions of any future users of the development in terms of air quality (including residents, employees, visitors and customers), taking into account any suitable and proportionate mitigation required for the development.

We will only allow residential development which impacts on areas sensitive to air pollution, where the developer provides an assessment that shows living conditions will be acceptable for future residents, subject to any required mitigation.

We will only allow development which impacts on areas sensitive to air pollution which could cause more air pollution, where the developer provides an assessment that shows there will not be a significantly harmful effect on air quality, subject to any required mitigation.

Furthermore, development which impacts on areas sensitive to air pollution due to traffic emissions will be expected to demonstrate suitable and proportionate mitigation relative to the increased traffic emissions generated by the development. [14]

Appendix 2

Air Quality Assessment Protocol to Determine the Impact of Vehicle Emissions from Development Proposals

An air quality assessment should clearly establish the likely change in pollutant concentrations at relevant receptors resulting from the proposed development during both the construction and operational phases. It must take into account the cumulative air quality impacts of committed developments (i.e. those with planning permission).

Key Components of an Air Quality Assessment

The assessment will require dispersion modelling utilising agreed monitoring data, traffic data and meteorological data. The modelling should be undertaken using recognised, verified local scale models by technically competent personnel and in accordance with LAQM TG.09. The study will comprise of:

1. The assessment of the existing air quality in the study area for the baseline year with agreed receptor points and validation of any dispersion model;
2. The prediction of future air quality without the development in place (future baseline or do-nothing);
3. The prediction of future road transport emissions and air quality with the development in place (with development or do-something).
4. The prediction of future road transport emissions and air quality with the development (with development or do-something) and with identified mitigation measures in place.

The assessment report should include the following details:

A. A detailed description of the proposed development, including:
    - Identify any on-site sources of pollutants;
    - Overview of the expected traffic changes;
    - The sensitivity of the area in terms of objective concentrations;
    - Local receptors likely to be exposed;
    - Pollutants to be considered and those scoped out of the process.
B. The relevant planning and other policy context for the assessment.
C. Description of the relevant air quality standards and objectives.
D. The assessment method details including model, input data and assumptions:
    For traffic assessment;
    - Traffic data used for the assessment;
    - Emission data source;
    - Meteorological data source and representation of area;
    - Baseline pollutant concentration including any monitoring undertaken;
    - Background pollutant concentration;
    - Choice of base year;
    - Basis for NO_x:NO_2 calculations;
    - A modelling sensitivity test for future emissions with and without reductions;

    For point source assessments:
    - Type of plant**;**
    - Source of emission data and emission assumptions;
    - Stack parameters – height, diameter, emission velocity and exit temperature;
    - Meteorological data source and representation of area;
    - Baseline pollutant concentrations;
    - Background pollutant concentrations;
    - Choice of baseline year;
    - Basis for deriving NO_2 from NOx.
E. Model verification for all traffic modelling following DEFRA guidance LAQM.TG (09):
F. Identification of sensitive locations:

G. Description of baseline conditions:
H. Description of demolition/construction phase impacts:
I. Summary of the assessment results:
    - Impacts during the demolition/construction phase;
    - Impacts during the operation phase;
    - The estimated emissions change of local air pollutants;
    - Identified breach or worsening of exceedances of objectives (geographical extent)
    - Whether Air Quality Action Plan is compromised;
    - Apparent conflicts with planning policy and how they will be mitigated.

J. Mitigation measures.

Air Quality Monitoring

In some case it will be appropriate to carry out a short period of air quality monitoring as part of the assessment work. This will help where new exposure is proposed in a location with complex road layout and/or topography, which will be difficult to model or where no data is available to verify the model. Monitoring should be undertaken for a minimum of six months using agreed techniques and locations with any adjustments made following Defra technical guidance LAQM.TG (09).

Assessing Demolition/Construction Impacts

The demolition and construction phases of development proposals can lead to both nuisance dust and elevated fine particulate (PM_{10} and $PM_{2.5}$) concentrations. Modelling is not appropriate for this type of assessment, as emission rates vary depending on a combination of the construction activity and meteorological conditions, which cannot be reliably predicted. The assessment should focus on the distance and duration over which there is a risk that impacts may occur. The Institute of Air Quality Management (IAQM)[37] has produced a number of definitive guidance documents to which this guidance refers. The document `Guidance on the Assessment of the Impacts of Construction on Air Quality and the Determination of their Significance' should be the reference for reporting the construction assessment.

Cumulative Impacts

The NPPF (paragraph 124) recognises that a number of individual development proposals within close proximity of each other require planning policies and decisions to consider the cumulative impact of them. Difficulties arise when developments are permitted sequentially, with each individually having only a relatively low polluting potential, but which cumulatively result in a significant worsening of air quality. This will occur where:

- A single large site is divided up into a series of units, such as an industrial estate or retails park;
- A major development is broken down into a series of smaller planning applications for administrative ease; and
- There are cumulative air quality impacts from a series of unrelated developments in the same area.

The first two cases the cumulative impact will be addressed by the likelihood that a single developer will bring forward an outline application for the whole site which should include an air quality assessment as part of an Environmental Assessment. For major developments that are broken down into a series of smaller planning applications, the use of a `Master or Parameter Plan' that includes an air quality assessment will address the cumulative impact.

[37] IAQM www.iaqm.co.uk

Appendix 3

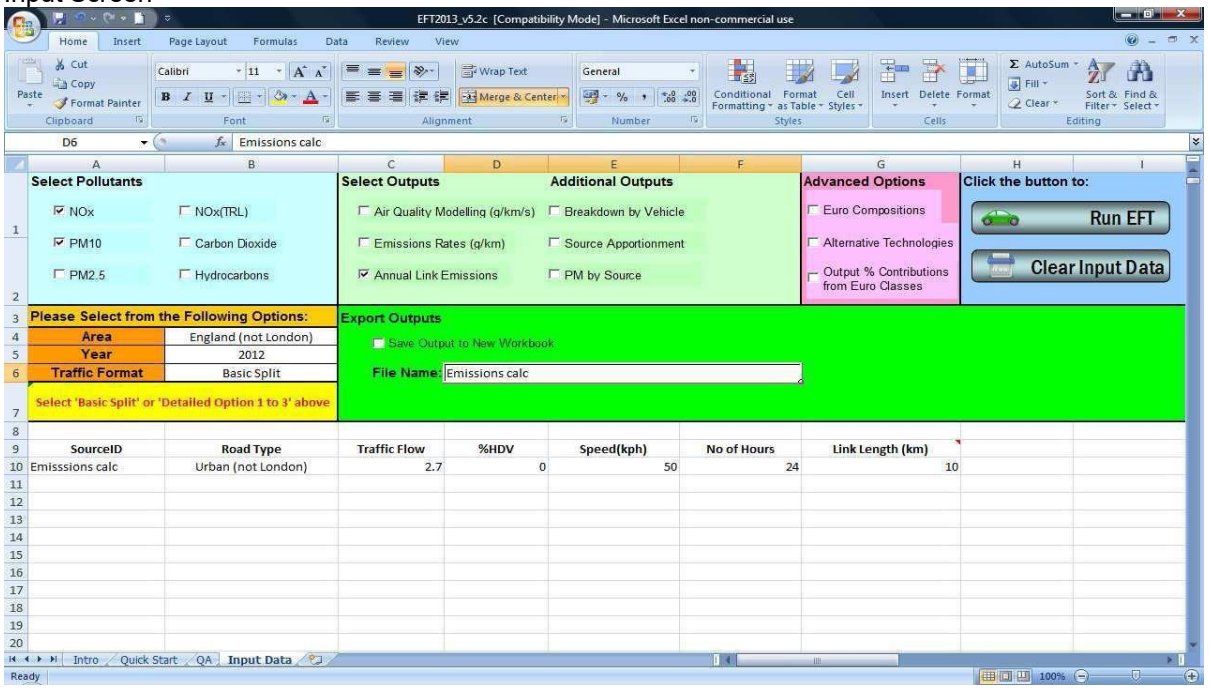
Emissions Assessment Calculator

The calculation utilises the current Emissions Factor Toolkit (EFT)* to determine the transport related emissions from a development proposal. If the proposal is to include alternative fuels or technology i.e. LPG, EV etc, then there are "advanced options" within the EFT to accommodate this.

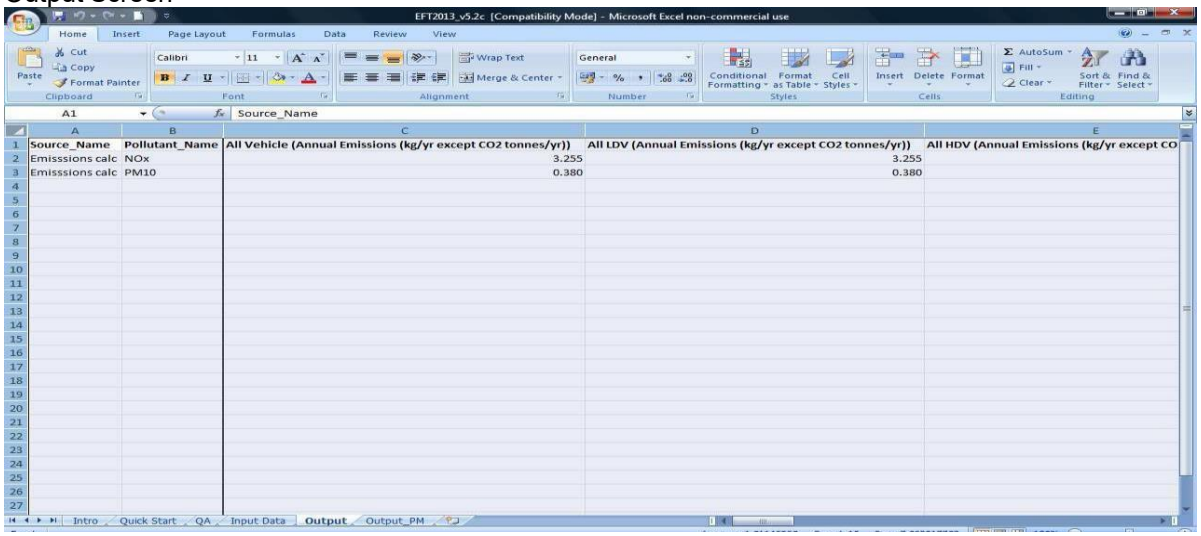
*http://laqm.defra.gov.uk/review-and-assessment/tools/emissions.html#eft

A screen shot of the input and output pages are shown below:

Input Screen



Output Screen



The output is in kg of specified pollutant per year and requires converting to tonnes per year. This is then multiplied by the IGCB damage costs for the specified pollutant.

The following example demonstrates the calculation based on a development with 10 domestic properties[38].

EFT Input:

[38] Sussex Air Quality Partnership "Air Quality and Emission Mitigation Guidance for Sussex Authorities 2013"

	10 household (urban not London) (NOx and PM_{10})	
	X	27 (trip/traffic ratio for 10 houses)
	X	cars only (0% HGV)
	X	50kph (avg. speed)
	X	10km (NTS UK avg.)
EFT Output = 32.55kg/annum (NOX) & 3.795kg/annum (PM_{10})		
	=	0.0325tonnes/annum (NOX) & 0.003795tonnes/annum (PM_{10})
	X	£955/tonne (NOx) + £48,517/tonne (PM_{10})
	=	£31.08 = £184.15
	X	5 (years)
	=	£155.42 = £920.76
Total	**=**	**£1,076**

Notes:

1. Trip Rates are sourced from the Transport Assessments and local authority where available.
2. Trip Length uses the National Travel Survey[39] - (UK average = 10km).
3. The IGCB damage costs are the central estimates (currently NOx = £955/tonne & PM_{10} transport average £48,517).

[39] https://www.gov.uk/transport-statistics-notes-and-guidance-national-travel-survey

Appendix 4

Electric Vehicle Charging Point Specification:

EV ready domestic installations

Cable and circuitry ratings should be of adequate size to ensure a minimum continuous current demand for the vehicle of 16A and a maximum demand of 32A (which is recommended for Eco developments).

- A separate dedicated circuit protected by an RCBO should be provided from the main distribution board, to a suitably enclosed termination point within a garage, or an accessible enclosed termination point for future connection to an external charge point
- The electrical circuit shall comply with the Electrical requirements of BS7671: 2008 as well as conform to the IET code of practice on Electric Vehicle Charging Equipment installation 2012 ISBN 978-1-84919-515-7 (PDF)
- If installed in a garage all conductive surfaces should be protected by supplementary protective equipotential bonding. For vehicle connecting points installed such that the vehicle can only be charged within the building, e.g. in a garage with a (non-extended) tethered lead, the PME earth may be used. For external installations the risk assessment outlined in the IET code of practice must be adopted, and may require an additional earth stake or mat for the EV charging circuit. This should be installed as part of the EV ready installation to avoid significant on cost later.

EV ready commercial installations

Commercial and industrial installations may have private 11,000/400 V substations where a TN-S supply may be available, simplifying the vehicle charging installation design and risk analysis. It is therefore essential for developers to determine a building's earthing arrangements before installation.

Commercial vehicles have a range of charge rates and it is appropriate to consider a 3-phase and neutral supply on a dedicated circuit emanating from a distribution board. More than one EV charging station can be derived from a source circuit, but each outlet should be rated for a continuous demand of 63Amps. No diversity should be applied throughout the EV circuitry. 3 phase RCBOs should be installed and the supply terminated in a switched lockable enclosure. If an external application (for example car park or goods yard) is selected, the supply should be terminated in a feeder pillar equipped with a multi-pole isolation switch, typically a 300mA RCD, a sub-distribution board (if more than one outlet is fed from the pillar). If an additional earthing solution is required, the earth stake can be terminated within this pillar. See IET guideline risk assessment.

Appendix 5

Travel Planning Guidance

Introduction

This document outlines how the planning process can be used to secure Travel Plans to improve and promote sustainable travel and to reduce the need to travel. Travel Plans are an integral part of Government policy on sustainability. Their aim is to improve the quality of life for everyone by facilitating development that is socially and economically beneficial and also environmentally sustainable. As such they are one of the most important tools in reducing the unnecessary use of vehicles and in turn the emission of harmful Nitrogen Dioxide and Particulate Matter.

This guidance has been produced to help ensure that Travel Plans contain both the necessary detailed measures for encouraging sustainable travel and that these measures are seen through to delivery and implementation.

What is a Travel Plan?

According to recent government guidance on Travel Plans (NPPF) they are, “long-term management strategies for integrating proposals for sustainable travel into the planning process. They are based on evidence of the anticipated transport impacts of development and set measures to promote and encourage sustainable travel” They are long term management tools particularly aimed at reducing the need to travel, gaining economic efficiencies, reducing the impact of car travel and encouraging greater use of public transport, cycling and walking.

When is a Travel Plan required?

The need for a Travel Plan is influenced by the scale of development. The decision as to the requirement for a travel plan lies with the relevant district planning authority.

The requirement for a Travel Plan would generally be in association with proposals for sites which require Type 2 mitigation measures and above, however Travel Plans may be required for developments below this threshold. Travel Plans apply to the whole of sites and the thresholds can be triggered by extensions to sites.

Travel Plan Procedure

There are six stages in the Travel Plan process:

Stage A – Scoping - Early consultation with the Council is recommended to discuss Travel Plan requirements and agree with the Council, which type of Travel Plan is most appropriate. If a Full Travel Plan is required (some districts will, in the earliest stages of an application accept Interim Travel Plans or, in the case of large missed use sites, Framework Travel Plans) this stage will also involve discussing the key issues to be addressed, the process and timetable to be followed, the scope and content of the Travel Plan and the outcomes sought.

Stage B - Pre-Application Discussions – Where a Full Travel Plan is required it should be submitted at this stage in draft form, so the detail may be discussed and agreed with the Council prior to submission.

Stage C – Submission - The Travel Plan (Full, Interim or Framework) should be submitted with the planning application which will not be validated until this document is received. The respective council will assess the Travel Plan, conduct any required statutory consultation and provide the applicant with written comments.

Stage D – Post-determination and Pre-occupation – Implementation of the Travel Plan should commence prior to the completion or opening of the development. This is to ensure that the measures are in place to positively influence and affect travel choices by all site users before their travel behaviour becomes fixed. The developer is responsible ensuring the Travel Plan is delivered.

Stage E – Post-opening - Many elements of the Full Travel Plan will be implemented once the development has opened and is occupied. The success in achieving identified targets is measured through appropriate surveys. Baseline monitoring should occur within three months of occupation.

Stage F – On-going Monitoring - All Travel Plans need to be monitored and annual reports submitted to the relevant Council. The Council will ensure Travel Plans are monitored and reported annually.

Securing a Travel Plan

The implementation and enforcement of Travel Plans is an essential part of the planning process. Legal Agreements (section 106 of the Town & Planning Act 1990) will be used to secure Travel Plans for larger and more complex developments; others will be secured by planning conditions.

Monitoring Travel Plans

A robust monitoring strategy must be incorporated into every Full Travel Plan and agreed with the Local Authority. The Travel Plan must be regularly reviewed by the travel plan co-ordinator and the local authority to assess performance against the targets specified in the Travel Plan, and to decide if alternative measures or approaches are to be pursued.

Enforcement and Sanctions

Where Travel Plan measures have not met the agreed targets and some remedy is necessary, the default mechanisms specified in the Travel Plan will be deployed. Enforcement action may be required where non-compliance with a Section 106 agreement or planning condition occurs and this causes harm. The relevant Council will take a proportionate approach, based on evidence.

Charges

Councils may require developers to contribute to the cost of monitoring Travel Plan progress. Charges would usually take the form of an annual fee for five years for this service, with rates based on the size of the development.

Appendix E: South Yorkshire AQCG Source Apportionment Methodology

It is necessary to update the source apportionment exercise for the Air Quality Management Areas (AQMAs) in South Yorkshire to contribute to the evidence base for prioritising measures within the Sheffield City Region air quality action plan.

The approach is based on Statutory Defra guidance[1] to assess air quality by Local Authorities in their Local Air Quality Management (LAQM) Review and Assessment duties and details the standard methodology advised for conducting modelling exercises.

This methodology represents a consistent approach which is available to all Local Authorities, using locally operated modelling systems.

It shall be noted that all modelling comes with inherent uncertainty and although a standard methodology looks to reduce this uncertainty, any modelling results come with a +/-25% accuracy.
The exercise will be conducted using the latest available Airviro Model developed in South Yorkshire over the last 16 years. Officers from each South Yorkshire local authority have received appropriate training for Airviro emissions database work and dispersion modelling, and are active members of a national Airviro User Group. Furthermore, officers have vast experience of undertaking their LAQM duties. There is therefore sufficient local expertise to ensure an agreed and consistent approach within the sub region.

The agreement is to use a baseline source apportionment of 2014. Therefore the following data sets are used;

- EDB – Rotherham/jk/EDB_0715_Base (database developed by AEAT using the Sheffield LEZ[2] vehicle split with updated EF from COPERT4 v10.0 and NAEI v6.0.1)
- Weather data – Scenario for 2014
- Traffic – AADT for 2014 from DfT[3]

The following factors will also be applied to any source apportionment model runs;
- Resolution will be at 25m grid squares
- Nitrogen dioxide conversion using the Derwent-Middleton equation

Model runs are performed for each AQMA and results are presented at sensitive receptors and/or at the worst case location where the following will be calculated;

Stage 1 – Source Apportionment of Sector Emissions
The percentage contribution of the following sectors will be calculated for South Yorkshire:
Industrial; Domestic; Background and Transport.

Stage 2 – Source Apportionment by Vehicle Type
The percentage contribution of each vehicle type to the transport sector emissions in each AQMA, the vehicle types are as follows:

Petrol Car, Diesel Car, LGV (100% considered diesel), Bus, HGV Rigid and HGV Articulated.
The % contribution will be calculated by performing a model run with one vehicle type in turn being omitted and subtracted from the total road transport emissions.

References;
[1]https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69334/pb13081-tech-guidance-laqm-tg-09-090218.pdf
[2]https://www.sheffield.gov.uk/environment/air-quality/LEZ-feasibility.html
33http://www.dft.gov.uk/traffic-counts/cp.php?

Appendix F: Sheffield City Region Air Quality and Climate Group Action Plan.

SHEFFIELD CITY REGION
AIR QUALITY AND CLIMATE ACTION PLAN 2016-2021
February 2016
(This is the latest available information)

AIR QUALITY AND CLIMATE ACTION PLAN 2016-2021

MISSION STATEMENT
TO IMPROVE LOCAL AIR QUALITY AND REDUCE CARBON EMISSIONS THROUGH LOCAL AND REGIONAL INTERVENTIONS

Introduction

This action plan aims to deliver air quality improvement and carbon reduction in the Sheffield City Region (SCR), by mitigating the impact of transport related emissions. The plan proposes and details actions which will assist in delivering better air quality and carbon reduction, and identifies potential indicative scheme costs, funding streams and timescales for delivery. In addition, quantification of emission and concentration reduction benefit has been undertaken, in order to develop a working prioritisation matrix for the plan.

Importantly, the rationale for these actions is underpinned by an extensive traffic based "source apportionment" exercise undertaken for the region's air quality management areas (AQMAs). This enables a clear understanding of the traffic related air quality problems in each AQMA, and subsequently informs the most appropriate actions to be undertaken.

The Air Quality and Climate Group (AQCG) has successfully delivered a number of projects over the last 10 years and laid the foundations for future work to reduce emissions of air pollutants and carbon from transport. There have also been significant developments during this time; in particular, the evidence regarding the harmful impact on health from air pollution resulting from transport emissions has become clearer and more significant.

The goal of reducing emissions from vehicles to air which result in poor air quality is central to the SCR Transport Strategy and presents partners with the challenges of reducing the emission from vehicles of both carbon dioxide (which contributes to climate change) and harmful gases such as nitrogen dioxide and fine particles that cause poor air quality locally (and which affects human health).

Transport is responsible for around 20% of direct greenhouse gas emissions in South Yorkshire. Developing and maintaining a private and public transport network that efficiently utilises and adopts new, low emission transport technologies will contribute to the economic success of South Yorkshire and the Sheffield City Region as a whole. This is recognised in the emerging transport strategy being developed by the Sheffield City Region Local Transport Body.

This plan is in four sections. The first section sets the scene for action, including discussion of the transport related air quality and climate change issues affecting the region, along with the context of air quality and carbon reduction within the emerging regional Transport Strategy.

The second section details the proposed actions to be undertaken, including assessment and prioritisation, along with identification of potential funding streams, links to SCR Transport Strategy groups and synergies with other SCR agendas, such as GVA uplift.
Section three details performance indicators for the plan, whilst Section four details the links and interfaces with other LTP groups.

This action plan will be subject to ongoing refinement and development in response to future opportunities and challenges (identification of additional funding sources, emphasis of future priorities, updated government guidance, the emergence of future opportunities to develop

additional schemes etc.), and will therefore be updated in response to any of the above, as and when required.

Section One; Setting the Scene

1.1 The Sheffield City Region in Context

The Sheffield City Region (SCR) is located at the strategic heart of the country. It is comprised of the nine local authority areas of Barnsley, Bassetlaw, Bolsover, Chesterfield, Derbyshire Dales, Doncaster, North East Derbyshire, Rotherham and Sheffield.

The Sheffield City Region has a diverse economy comprising a dynamic core city, important towns and market towns, fabulous countryside and a significant rural economy. The City Region encompasses more than 1.8 million people and approximately 700,000 jobs.

In January 2013, the Department for Transport announced a ten-year allocation of major scheme transport funding for Sheffield City Region. This funding is to be spent on major infrastructure projects and will form part of the Sheffield City Region Investment Fund (SCRIF). SCRIF is a framework of funding streams to deliver essential strategic infrastructure to increase economic growth and jobs in the Sheffield City Region.

To satisfy the Department for Transport that Sheffield City Region is able to allocate and spend the funding appropriately, Sheffield City Region has established a body to make key decisions regarding this funding and to oversee investments. This body was known as the Sheffield City Region Local Transport Body (SCR LTB) and is now incorporated within the remit of the Combined Authority.

Economic growth and major new road infrastructure could result in worsening of poor air quality, which has negative impacts on our health and environment. Conversely, a green and healthy environment can increase the attractiveness of a region to inward investment, and delivers a very positive perception of a region, particularly so with the increasing awareness and high profile of the public health impact of poor air quality.

Previously, the strategic context for air quality was contained in the South Yorkshire Local Transport Plan (SYLTP) 3 Evidence Base Document 7 (Reducing Emissions). This Action Plan summarises progress in current projects and identifies actions and options for further investigation so as to meet short, medium and long term air quality targets and reduce health impacts from poor air quality in our region/conurbation.

In terms of development and delivery the following challenges have been identified:

- Achieving economic growth and building major infrastructure whilst mitigating effects on our health and environment (without worsening already poor air quality.)
- Reducing emissions on the busiest parts of the transport network
- Increasing the efficiency of transport use to reduce vehicle miles on the network
- Supporting the uptake of low emission vehicles and fuels
- Reducing emissions from freight transport, buses and taxis
- Promoting active travel for shorter journeys

In October 2015, SCR agreed the terms of a proposed agreement between Government and the leaders of the Sheffield City Region to devolve a range of powers and responsibilities to the Sheffield City Region Combined Authority. As part of the devolution deal process, an ambition document was submitted to HM Treasury as part of the devolution deal process, which spans six key themes, one of which relates to transport - an integrated 21st Century Transport Network with greater intra-city region and pan-City Region connectivity.

Whilst air quality was not referenced in the deal, this does not mean that this Group cannot bid to access future funding from this particular source. As part of the agreement, it is proposed that £30m per annum for 30 years will be released to the region.

1.2 Air Quality

1.2.1 The Problem

In South Yorkshire the highest levels of pollutants are recorded close to major roads. Many people live in areas of elevated air pollution. All four local authorities in South Yorkshire have declared Air Quality Management Areas (AQMAs) for the gaseous pollutant nitrogen dioxide, and Sheffield City Council has also declared an AQMA for fine inhalable particles (PM_{10}).

In its guidance on Local Transport Plans, the Department for Transport (DfT) expects authorities to consider their contribution to national transport goals as overarching priorities for their local transport plans. These include reducing the social and economic costs of transport to public health, including air quality impacts, in line with EU obligations.

Over recent years the evidence of the damage caused by air pollution continues to grow stronger. But the UK is still failing to meet European targets for safe air pollution limits across many parts of the country. Thirty Eight out of the UK's 43 assessment zones are failing to meet EU targets on levels of annual mean nitrogen dioxide (which should have been met across the UK by 2010) and poor air quality has now been found to be shortening the lives of up to 200,000 people by an average of 2 years. These zones include the Sheffield-Rotherham and Yorkshire-Humber zones, encompassing the four South Yorkshire local authorities.

Additional evidence for the significant impact of air quality on health is detailed elsewhere[40], clearly however air quality is a very significant issue requiring attention.

1.2.2 Statutory Obligations and National Context

There is a statutory obligation in place on all local authorities to regularly review and assess the air quality in their areas, as set out in Part IV of the Environment Act (1995) and to determine whether or not the National Air Quality Strategy standards are likely to be achieved. Air quality is becoming one of the most important public health issues in the UK.

The European Commission has formally launched infraction proceedings against the UK for a breach of nitrogen dioxide limit values under the EU Air Quality Directive. The EU Limit values for air quality are not being met at many places in the Sheffield City Region, and currently air quality does not comply with EU and national law. There is potential for the UK Government to be fined for breach of the EU limit values post 2015, and infraction proceedings have already been instigated by the **European Commission which has sent the UK a 'Letter of formal notice' for breaching nitrogen dioxide (NO_2) limit values in 16 of 43 zones.** In April 2015, the Supreme Court ordered the Government to develop revised Air Quality Plans to tackle air pollution in the UK. These plans were published in December 2015.

The UK Government is responsible for ensuring compliance with EU air quality obligations, although local authorities do play an important role in managing local air quality. There is a discretionary power in Part 2 of the Localism Act under which the Government could require responsible authorities to pay all or part of an infraction fine. This would be subject to parliamentary process.

1.2.2.1 M1 J28-35a Smart Motorway

[40] http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18580

The operation of the M1 SM-ALR scheme operating at 70mph was considered to have significant, adverse air quality impacts for the opening year of 2017. A mitigation option of 60mph weekday am and pm peak, 70mph IP, 70mph OP and weekend was therefore proposed and modelled by Highways England (HE). This will impact on air quality, even with the mitigation in place.

HE concluded however that the mitigated operating regime would not affect the overall achievement of the compliance date with the EU Directive on ambient air quality for the Sheffield Urban Area, because there are road links within the Sheffield Urban Area (a reporting zone for defra's reporting purposes to the EU) which are predicted to have higher roadside concentrations for the same year, than those impacted on by the scheme.

The mitigated scheme will cause an adverse impact on air quality and, in particular, delay Rotherham MBC's ability to comply with the EU Directive on ambient air quality within its M1 Air Quality Management Area. For the Sheffield Urban Area, a compliance date of before 2020 is predicted by Defra in the latest National Plan. However, the M1 J28-J35 SM-ALR EAR modelling predicts that compliance with the EU limit value will be later than the year 2020 in Rotherham's M1 Air Quality Management Area.

1.3 Climate Change

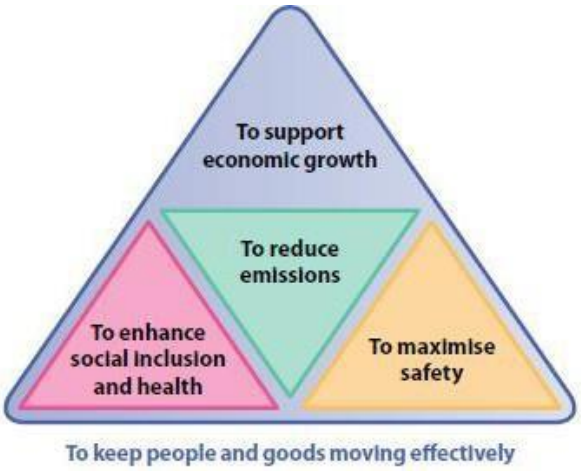
In 2008 the UK Climate Change Act established legally binding targets for the reduction of greenhouse gas emissions of 80% by 2050. According to figures calculated from the 2009 UK Greenhouse Gas inventory, HGVs (including buses) account for over 23% of emissions from the road transport sector and 4.6% of the total UK greenhouse gas emissions. In achieving the 80% reduction, there are some sectors that will be unable to meet this target (for example aviation and agriculture). Consequently, where possible, all other sectors of the economy will have to work towards total decarbonisation.

1.4 Air Quality Policy Context within the SCR

The role of the AQCG is to facilitate the delivery of the emissions reduction policies outlined in the SCR Transport Strategy (figure 1) and to support the delivery of the Strategic Economic Plan (SEP), by managing the environmental impact of economic growth across the region.

Included in the Air Quality and Climate Group's remit is to continue to address the need to evaluate and assess progress and performance through ongoing monitoring and measurement of emissions as required by Government. The Air Quality and Climate Group has the strategic lead for the air quality and climate change aspects of the **Sheffield City Region Transport Strategy (2011 – 2026)**, with overall responsibility for evaluation as well as those measures directly aimed at reducing emissions from vehicles and energy use. The Transport Strategy is currently centred on four goals:-

Figure 1



Underpinning these four goals are twenty-six policies, defined to achieve delivery of our Strategy. The AQ&CG has lead responsibility for the following three policies:-

Table 1

R	To work to improve the efficiency of all vehicles and reduce their carbon emissions and local air pollutants
U	To support the generation of energy from renewable sources and use energy in a responsible way
V	To improve air quality, especially in designated Air Quality Management Areas

As the LTP Implementation Plan has now expired, consideration is now being given to the preparation of a "Transport Delivery Plan", with the adoption of three time scales in the plan, these being:

- Short (2017-18)
- Medium (2018-19 to 2020-21)
- Long (post March 2021)

The timescales for actions contained within this plan will therefore reflect the proposed timescales for the future Transport Delivery Plan. Should these timescales change in any future Transport Delivery Plan, these timescales can be altered accordingly.

Consideration is also being given to refresh the overarching Transport Strategy (2011-2026); however at the time of drafting of this plan, it is understood that this refresh has been put on hold, pending a wider review of the City Region's infrastructure and investment ambitions.

At the time of the writing of this draft (January 2016), the definitive positioning of the AQC Group has yet to be finalised.

Section Two; Actions 2015-2021 and Potential Funding

2.1 Actions / Interventions

It should be noted that this plan is not an exploration of leading modal shift (this has been traditionally tackled by other LTP groups) but rather about incorporating the low emission technologies being developed for public and private transport. At present the uptake of low emission vehicles amongst the public has been limited, as with most products in their infancy, although there has recently been some acceleration in the number of nationally registered EVs. Growth in uptake is forecast over the next 25 years as car manufacturers move to develop low emission alternatives. The gradual shift to low emission, electric and hybrid vehicles will only be possible if research and investment in an infrastructure that can support them is undertaken at national and local level. The partners have a key role to play by directing resources to encourage the shift to a low emission economy.

Funding is needed for the SCR to reduce emissions from transport and to enable the city region to achieve sustainable economic growth.

The LTP and LSTF South Yorkshire projects which were led by the group for the period 2010-2016 include:

- The Care4air Campaign
- ECO Stars Fleet Recognition Scheme
- Air Quality Monitoring
- Air Quality Modelling
- Hydrogen refuelling infrastructure
- Electric vehicles
- CNG refuelling infrastructure

Following completion of the LTP3 implementation period (2011-2015), and the completion of LSTF projects by March 2016, the group will be required to provide support for LTP delivery, lead on projects and support bids for external funding streams such as the Ultra-Low Emission Vehicles (ULEV) and Clean Vehicle Technology Fund (CVTF).

The Office for Low Emission Vehicles (OLEV) announced funding to encourage the take up of ultra-low emission vehicles (ULEVs) in 2014. Bids for part of a £500m pot of funding are being assessed by DfT. These will support a range of measures and technologies that will assist the UK in meeting its low carbon commitments. Sheffield CC made a bid to the Go Ultra Low Cities Fund which offered £35m for 2-4 cities to commit to supporting a significant adoption of ULEV technology through 'softer measures' including free parking, car clubs, infrastructure provision and access to bus lanes. Although this particular bid has been unsuccesful, the lessons learned from this exercise will benefit the city region when developing future bids. In addition a feasibility study is being funded in 2015/16 for part of the £20m for local authorities to facilitate the uptake of ULEV taxis in Sheffield.

A key part of future work could be to try and encourage the de-dieselisation of the fleet. Sheffield CC's low emission zone (LEZ) study showed how significant diesel car emissions are in terms of causing poor air quality. (https://www.sheffield.gov.uk/environment/air-quality/LEZ-feasibility.html).

One project, which could form part of any ULEV bid could be the payment of a "scrappage" grant (as previously implemented nationally) for older diesel cars.

The SCR is an ideal place for funding from the £30m Low Emission Bus Fund. It is particularly important to fund the improvement of the SCR bus fleet as the impact of buses in AQMAs in the region is particularly high. In some AQMAs, buses contribute up to 40% of transport NOx emissions. Any improvement to the bus fleet will improve air quality. However, the bus operators need to be willing to take part in this, as the Councils do not run services directly.

There is a funding pot of £4m for a compressed natural gas (CNG) refuelling infrastructure, the details of which have not been released to date. A comprehensive survey of suitable sites for CNG refuelling stations in South Yorkshire has been undertaken by the group and the report is available on request from the group.

In September 2015, the Hydrogen Filling Station at Waverley close to M1 junction 33 was opened by ITM Power. The AQCG has worked closely on hydrogen refuelling with ITM Power. South Yorkshire is ideally placed to bid for the so far unspecified amount for hydrogen research being offered by OLEV.

It needs to be stressed that many of South Yorkshire schemes are already highly innovative compared to what else is currently being progressed nationally. Sites for CNG refuelling have been identified; we already have hydrogen powered vehicles running in South Yorkshire. An Electric Vehicle (EV) infrastructure is actively being encouraged through planning and also installed through LSTF schemes. The ECO Stars Fleet recognition scheme is nationally recognised and has over 100 members in South Yorkshire alone, as well as being rolled out throughout the UK. Care4air uses social marketing to get the key messages about transport and air quality out to the general public. But all these schemes need funding, and it is vitally important that such schemes continue if the SCR is to achieve sustainable economic growth.

If the work of the AQCG is successful, the SCR could potentially become one of a small number of areas which is a flagship region for the uptake of new technologies and ULEVs.
It would have a clean and attractive environment and benefit from good air quality, all of which would make the region more attractive to inward investment. The SCR will then be in a position to be a beacon for other regions looking to reduce their emissions and improve their local air quality. Successful regions will also attract international attention.

The AQCG will work closely with the SCR Combined Authority to secure the optimum level of funding for schemes to improve air quality and health for the people of the city region.

2.2 Programme Management / Governance

The Air Quality and Climate Group will continue to provide support and technical information for bids such as the Clean Vehicle Technology Fund, OLEV etc.

Following any refresh of the Transport Strategy (2011-2026) and development of Transport Delivery Plans, we will be able to better identify appropriate governance structures. In addition, the AQCG has considered programme management of proposed actions / schemes. Whilst members of this group can be nominated “leads” for individual projects, and the group as a whole possess considerable transportation knowledge and experience, the group proposes the acquisition of additional management resource to enable the successful production of funding bids and subsequent implementation of schemes. The group will therefore seek to include additional funding for management resource within funding bids as appropriate.

As a proportion of the identified funding of schemes is not administered by the SCR (e.g. OLEV, CVTF), working in obtaining this funding and subsequent implementation of these funded schemes can progress independently of the SCR to some extent.

2.3 Assessment and Prioritisation of Actions

Moving forward, we have developed an evidenced based and detailed action plan, which outlines the activities this Group would like to deliver in the short, medium and long term.
A technical exercise, detailed in Appendix A, was carried out identifying the contribution of different vehicle types to emissions in the South Yorkshire AQMAs. This evidence informs decisions on which actions should be taken forward to ensure they will provide the most cost effective improvements to air quality.

The broad conclusions of the exercise were that diesel cars (including taxis) are a particular major source of NOx within all of our AQMAs. Buses provide a significant contribution to road traffic related NOx emissions; however the proportion varies in each AQMA, depending on the

prevalence of buses and bus routes. This situation is similar for heavy goods vehicles (HGVs) emissions (again dependent on location of AQMAs in relation to prevalence of HGV movements), whilst light goods vehicles (LGVs) are making an increasingly significant contribution to NOx emissions within our urban areas, partly due to more home deliveries undertaken as a consequence of internet shopping.

Although the focus of the technical exercise has been on NOx emissions, the Group recognise the additional benefits of proposed activities / interventions. Where appropriate , associated particulate matter and carbon emission benefits are highlighted, along with other potential benefits, such as reduction in road traffic associated noise and the encouraging of safer driver techniques and active travel.

The technical work will further refine the application of activities and interventions to suit each AQMA accordingly. This further refinement and prioritisation will take place alongside the development of appropriate funding bids and the “scoping-out” of schemes.

Table two below lists existing and future proposed schemes, including potential funding mechanisms, likely timescales for delivery, indicative costs and summary assessment subsequent emissions and air pollutants concentrations reduction benefit. Table three therefore acts as a prioritisation matrix to ensure that the most cost effective, targeted and deliverable interventions are implemented.

Furthermore, table two has been broken down into specific project areas, these being:

- Awareness Raising
- Reduce Existing Vehicle Emissions
- Low Emission Vehicles and Fuels
- Project Assessment and Scenario Testing
- Implementation and Management

Each of the actions / interventions has been categorised into one of these project areas.

Table 2

SCR AQCG Previous Schemes

Project	Description	Status	Funding	Timeframe	Cost	Benefit		
						Emissions per vehicle	Concentrations	Additional Benefits
Awareness Raising								
Care4air	The South Yorkshire air quality campaign premise is to use social marketing to engage the public with the air quality subject. Launched in 2004 it has been highlighted as best practice nationally and continues as a strong brand to promote air quality in South Yorkshire.	Existing Scheme.	LSTF	Current until 31.03.16	L	L	L	Encourages carbon reduction, active travel
Public Information	Methods to inform the public on current local air quality levels and public health information.	Small scale local schemes delivered on a LA level.	Local Authorities	Current until 31.03.16	L	L	L	
Promote Travel Choices	InMotion funded by LSTF currently carries out this function providing advice to the public and businesses on the various public and sustainable transport choices available in South Yorkshire. Includes travel planning, bike loan and public transport ticket promotions.	Existing Scheme delivered by other groups.	LSTF	Current until 31.03.16	H	M	L	Encourages carbon reduction, active travel
Reduce Existing Vehicle Emissions								
ECO Stars	Eco Stars scheme provides recognition, guidance and advice to operators of goods vehicles, buses and coaches in the South Yorkshire area. Each member signing up receives tailor-made support to ensure that their fleet is running as efficiently and economically as possible, to help them progress to higher ratings	Existing Scheme.	LSTF	Current until 31.03.16	M	M	M	Encourages carbon reduction
ECO driving	LSTF main bid includes eco driving training / messages as part of the ECO Academy scheme. ECO driving information freely available with the ongoing commitment to the care4air website. PR campaign based on ECOdriving techniques delivered.	Existing Scheme delivered by other groups.	LSTF	Current until 31.03.16	L	L	L	Encourages carbon reduction, active travel
Retrofitting PSV	Two bus routes in the region have been selected for retrofitting using Thermo Management Technology (TMT) on Euro V buses, funded by the CVTF. The technology works by raising the engine temperature so that Ad-Blue is released which neutralises NOx emissions. The X78 and 75 rotes traverse a number of AQMAs in the region.	Pilot technology has been successfully carried out. Roll out to all buses commencing shortly.	CVTF	Current until 31.03.16	M	H	M	Reduction in PM10
Low Emission Vehicles and Fuels								
EV Infrastructure	**Local Sustainable Transport Fund – Electric Vehicle Project "Inmotion":** This is a unique project, circa £1m, funded through the Department for Transport's Local Sustainable Transport Fund. The project is delivered in conjunction with Npower and the 4 South Yorkshire metropolitan councils, and is co-ordinated by Sheffield City Council: http://www.inmotion.co.uk/schemes/electric-vehicles/ Electric Vehicle Project is promoting the uptake of EVs across small and medium size businesses in South	Existing Scheme.	LSTF	Current until 31.03.16	M	H	M	Reduction in PM10, reduction in road traffic noise

Project	Description	Status	Funding	Timeframe	Cost	Benefit		
						Emissions per vehicle	Concentrations	Additional Benefits
	Yorkshire.							
Hydrogen Re-fuelling	The project aim is to provide a refuelling infrastructure and demonstration vehicles to establish hydrogen as part of the mix of low emission technologies in the region. Establishment of a refuelling station will leverage private sector and government investment, increasing the use of Hydrogen in the local fleet	Previous project has seen investment in re-fuelling site and vehicles at the AMP.	LTP	Current until 31.03.16	**M**	**H**	**L**	
Sheffield Low Emission Study	Sheffield CC commissioned and completed a Low Emission Study in the city. The results have provided a detailed profile of emissions and helped quantify the scale of measures need to improve air quality. The proposal is to extend the study across South Yorkshire, using the methodology adopted in Sheffield. The results of the study would inform the future AQAP of the SCR and the Local Councils.	First study conducted for Sheffield only, has provided a lot of evidence for preferred options.	Defra	Current until 31.03.16	**M**	**n/a**	**n/a**	**Reduction in PM_{10}, reduction in road traffic noise**
Project Assessment and Scenario Testing								
Monitoring	Monitoring continues to take place across South Yorkshire as part of the LTP3 programme. The monitoring project focuses on road transport pollution and produces data which is used to measure progress towards the attainment of air quality targets.	Existing scheme.	LTP	Current until 31.03.16	**L**	**n/a**	**n/a**	
Modelling	Project to maintain and update an air quality model which is used to predict air quality and carbon emissions from traffic throughout South Yorkshire, following the development of a Countywide emissions database for all traffic, which includes the latest emission factors.	Existing scheme.	LTP	Current until 31.03.16	**L**	**n/a**	**n/a**	

Table 3 SCR AQCG Proposed Future Schemes

Project	Description	Status	Potential Funding Streams	Timeframe	Cost	Benefit		
						Emissions per vehicle	Concentrations	Addiional Benefits
Awareness Raising								
Public Information	Provision of information to the public on current local air quality levels, ways that individuals and businesses can contribute to improving air quality and public health information.	Small scale local schemes delivered on a LA level.	Local Authority	On-going	**L**	**L**	**L**	
Care4air	The South Yorkshire air quality campaign premise is to use social marketing to engage the public with the air quality subject. Launched in 2004 it has been highlighted as best practice nationally and continues as a strong brand to promote air quality in South Yorkshire.	Awaiting funding.	Government Grants SCR Devolved funding Developer contributions(As NPPF)	Subject to funding	**L**	**L**	**L**	**Encourages carbon reduction, active travel**
Promote Travel Choices	Previously InMotion funded by LSTF - provides advice to the public and businesses on the various public and sustainable transport choices available in South Yorkshire. Including travel planning, bike	Awaiting funding. Led by other groups but	DfT"Access" funds (2016/17?)	Subject to funding	**H**	**M**	**L**	**Encourages carbon reduction,**

Project	Description	Status	Potential Funding Streams	Timeframe	Cost	Benefit		
						Emissions per vehicle	Concentrations	Addiional Benefits
	loan and public transport ticket promotions.	contribute to improving air quality.	SCR Devolved funding DfT?					active travel
Reduce Existing Vehicle Emissions								
ECO Stars	The Eco Stars scheme provides recognition, guidance and advice to operators of goods vehicles, buses and coaches in the South Yorkshire area. Each member signing up receives tailor-made support to ensure that their fleet is running as efficiently and economically as possible, to help them reduce emissions and progress to higher ratings. The Scheme has been recognised nationally and rolled out to over 20 other areas in the UK. In Scotland it is supported by the Scottish Government.	Awaiting funding from April 2016	DfT"Access" funds (2016/17?) SCR Devolved funding	Subject to funding	M	M	M	Encourages carbon reduction
Bus measures	Funding such as that from the OLEV Low Emissions Bus Fund and CVTF provide opportunities to bid for funding to improve the bus fleet in South Yorkshire. The AQCG identify options and encourages operators to bid for these funds in partnership with SYPTE and the SCR team. Measures include retrofitting, fleet renewal, more stringent Quality Bus Partnerships (QBP), alternative fuelled vehicles.	Retrofitting with TMT bid already successful via CVTF. EV feasibility in Sheffield. QBP being rolled out across South Yorkshire.	DfT Funding from Low Emissions Bus Fund and CVTF; Subject to a competitive bidding process	Subject to funding Short/ Medium – Long term	M	H	M	PM_{10} reduction
Taxi Measures	The OLEV Taxi Fund is available for ultra-low emission taxis. Stricter licensing regime (Local Authorities) Provision of EV charging points convenient for taxi ranks.	Sheffield Feasibility Study identified Taxis emissions as an area for improvement.	OLEV Taxi Fund	Medium	M	H	M	PM_{10} reduction
Diesel Scrappage	A South Yorkshire scheme to provide a set monetary incentive to exchange old diesel vehicles for cleaner vehicles. The fund would apply only to those vehicles that were being scrapped and not sold on to be re-used elsewhere.	Feasibility stage. Subject to funding	Central Government	Long	M	M	M	PM_{10} reduction
Low Emission Vehicles and Fuels								
Low Emission Zones/Clean Air Zones	Feasibility studies carried out in Sheffield. Defra has proposed Clean Air Zones for 5 cities outside London. Sheffield is not one of them.	Feasibility Study completed. Subject to funding.	Local Authority Central Government (no funding has been announced for this to date)	Long	M	H	H	PM_{10} reduction
CNG Infrastructure	Implement CNG re-fuelling within the region as part of the mix of low emission technologies. Project could aim to lever in private sector and Government investment, increasing the use of CNG in the region and nationally. Requires private sector commitment	Feasibility study carried out identifying locations in South Yorkshire where CNG re-fuelling is suitable.	OLEV CNG re-fuelling Infrastructure Fund could be a source of potential funding.	Long	H	H	H	PM_{10} reduction
EV Infrastructure	Further infrastructure projects and promotion of the benefits of EV. Installation of public fast and rapid EV charging points to create a	Some EV points have been	Subject to funding from	Medium	M	H	M	Reduction in PM_{10},

Project	Description	Status	Potential Funding Streams	Timeframe	Cost	Benefit		
						Emissions per vehicle	Concentrations	Addiional Benefits
	viable network for both the residents of Sheffield City Region and visitors to the area.	installed through planning contributions and the Inmotion SME Electric LGV project.	Sheffield Go Ultra Low Cities Bid					reduction in road traffic noise
Hydrogen Re-fuelling	The project has already provided the first publically available refuelling station and demonstration vehicles to establish hydrogen as part of the mix of low emission technologies in the region. Aim to set up a hydrogen vehicle car club.	Re-fuelling station operational	Private sector funding.	Long	**M**	**H**	**H**	Reduction in PM_{10},
South Yorkshire Low Emission Study	Sheffield CC commissioned and completed a Low Emission Study in the city. The results have provided a detailed profile of emissions and helped quantify the scale of measures need to improve air quality. The proposal is to extend the study across South Yorkshire, using the methodology adopted in Sheffield. The results of the study would inform the future AQAP of the SCR and the Local Councils.	First study conducted for Sheffield only, has provided a lot of evidence for preferred options.	LTP/ DfT"Access" funds /AQ Grant	Short	**M**	**n/a**	**n/a**	
Project Assessment and Scenario Testing								
Monitoring	Monitoring continues to take place across South Yorkshire as part of the LTP3 programme. The monitoring project focuses on road transport pollution and produces data which is used to measure progress towards the attainment of air quality targets.	Existing scheme funded by LTP 2015/2016. Funding from 2016/17 needed.	LTP	On-going	**L**	**n/a**	**n/a**	
Modelling	Project to maintain and update an air quality model which is used to predict air quality and carbon emissions from traffic throughout South Yorkshire, following the development of a Countywide emissions database for all traffic, which includes the latest emission factors.	Existing scheme funded by LTP 2015/2016. Funding from 2016/17 needed.	LTP	On-going	**L**	**n/a**	**n/a**	
Implementation and Management								
Project Management Resource	To enable successful funding bids and implementation of elements of this programme, a funding contribution will be needed to fund project management.	Revenue Funding required.	No funding stream identified.	Short – Medium	**L**	**n/a**	**n/a**	

Timeframe: Current 2015-2016, Short-term 2016-2018, Medium term 2018-2021, Long term Post 2021.

Costs

Low	Medium	High
<£100,000	£100,000 - £1 million	>£1 million

Impact on Concentrations

Low	Medium	High
<0.3µg/m^3	0.3 – 1 µg/m^3	>1 µg/m^3

Impact on Emissions

Low	Medium	High
<10%	10-30%	>30%

Table 4: Potential Funding Streams

Department	Fund	Value	Description
OLEV	Low Emission Bus Fund (LEB)	£30m nationally with no cap on bids but if over £5m, must be scalable	Acts as a top up grant and payment towards infrastructure costs
	Cities Bid	£35m total, no indication of how this will be split between the 2 to 4 winners.	SCC are bidding into this to become an exemplar in encouraging the uptake and operation of ultra-low emission vehicles
	Gas Refuelling Infrastructure Fund	£4m nationally	Aimed at HGVs and the introduction of stations on the Strategic network i.e. motorway service stations
	Taxis	£20m nationally	For ultra-low emission taxis (acts as a top up grant and payment towards infrastructure costs like the LEB fund)
	Hydrogen Refuelling Infrastructure Fund	£6.6m nationally. With £0.25m awarded for AMP refuelling site	Sheffield based ITM Power received £1m funding for four upgrades to Sheff/Roth(x1) and London (x3) stations
DfT	Clean Vehicle Technology Fund (CVTF) (formerly Clean Bus Technology Fund - CBTF)	£5million nationally (up to £500,000 per authority area).	CBTF/CVTF was aimed at retrofitting NOx abatement technology. In 2015-2016 CBTF funding secured for £500,000 for upgrade of 25 buses.
	Green Bus Fund (now the LEB, see above)	The Green Bus Fund had four rounds and offered funding on a declining basis (£30m in round 1 reduced to £20m in round 4)	Covered the uplift cost between a standard bus and low carbon equivalent, now replaced by the Low Emission Bus (LEB) fund.
	Cycle Cities Ambition Grant	£114m extension made available to the 8 cities which originally applied (none in the SCR)	Previous SCR bid unsuccesful, but it is understood a plan is being developed to try to access this in the future.
	BSOG and the Low Carbon Vehicle Payment	BSOG is paid to the operators based upon their diesel consumption figures they submit to the DfT. On top of this an additional 6p per km is paid for operators of low carbon vehicles.	Although the amounts issued are not known, this is an area of greater influence to reduce the incentive to use more diesel.
	"Access" Fund	Government is considering committing £80M for revenue funding, over four years, after 2015-16 LSTF funding.	Pro rata (based on previous South Yorkshire LSTF settlements), this has been calculated as potentially being worth £1.4 per annum, which would be a reduction from previous LSTF funding. Awaiting further information.
DEFRA	Defra Air Quality Grant	The AQ Grant scheme has been annual since 1997. Funding offered has declined to £0.5m this year.	Supports expenditure by eligible local authorities on measures to improve air quality.

DECC			DECC have grants aimed at encouraging the uptake of renewable energy systems but this is at the periphery of air quality. This is more in the realms of carbon reduction
DH			The search of DH funding for transport was unsuccessful. In the past there have been partnerships to fund sustainable travel due to the health improvements. Possible area for development in the future, but local Public Health budgets are being reduced
LTP and EU Funding			ECO Stars was originally LTP funded, followed by LSTF. EU Intelligent Energy Funding has been used to roll it out across Europe according to the website. Care for Air is a communications campaign that has been supported by LTP funding

4. GVA Info for the Air Quality and Climate Change Action Plan

Across the North, our Cities and towns are engines of economic growth. As progress is made with implementation of the Northern Powerhouse, it is anticipated that our cities and towns will generate significant uplift in gross domestic product (GDP), including within the Sheffield City Region.

However this can bring about significant economic, social and environmental costs, which need to be managed and mitigated early in the planning process. As pioneering cities across the world are demonstrating, more compact and connected urban development, built around significant public transport, can create cities that are economically dynamic and healthier, and that have lower emissions. Such an approach to our planning and delivery of GVA[41] in the Sheffield City Region could enhance our environmental and Air Quality credentials now and into the future. Several of our actions within this plan will assist in mitigating the environmental impact of growth, without being a barrier to this increase of growth. These include the promotion of low emission infrastructures etc., to prepare for these future major shifts in how transport will operate in the region.

From an Air Quality/Climate Change perspective, it is difficult to provide figures in terms of its contribution to uplift in GVA. However well-designed policies in these fields can make growth and air quality and climate objectives mutually reinforcing in both the short and medium term. In the long term, if air pollution and climate change is not tackled, growth itself will be at risk. One way of monetising the impact of poor air quality is to look at the societal cost, many of which can impact on economic growth and the reputation of the region. This can be of real concern to businesses looking to establish themselves, expand or relocate to a new area. As part of business planning many companies take into account the wider implications and the potential for external costs which can impact on their businesses and workforce.

Examples of Societal Costs
In terms of wider impacts on the UK economy, DEFRA estimate that poor air quality costs between a total of £9 billion-£17 billion.

Congestion and poor air quality go hand in hand, with congestion costing our urban areas over £11bn each year, with the highest costs experienced during peak times of the day. This congestion is bad for cities and towns and bad for many businesses. In particular freight operators and their customers – over 25% of all road freight journeys, are delayed by congestion.

Air pollution is a major environmental risk to health. By reducing air pollution levels, regions can reduce the burden of disease from stroke, heart disease, lung cancer, and both chronic and acute respiratory diseases, including asthma, which alone costs the NHS an estimated £1 billion a year.

There are also economic benefits. Government estimates that the economic cost of the health impacts of poor air quality in the UK is around £15 billion per annum. Accordingly, reductions in emissions and exposure can generate significant savings in health budgets and reduced costs for employers.

Clean air attracts investment. Business services and international relocation agencies (such as Forbes) frequently ranks cities on how "toxic" or polluted they are. These and other rankings influence investment and location decisions by major firms. For instance, these quality of life issues affect the most economically valuable jobs, which are essential to London status as a preeminent global business center. Whilst the Forbes criteria applies to "international" cities, such as London, there can be a perception from businesses on the environmental attractiveness of a region, and, in the

[41] **Gross value added** (GVA) is the measure of the value of goods and services produced in an area, industry or sector of an economy, in economics. In national accounts GVA is output minus intermediate consumption; it is a balancing item of the national accounts' production account.

past, there have been such enquiries in the Sheffield City Region with regard to air pollution.

Section Three; Performance Indicators

In monitoring the outcomes and overall impact of our activity, the South Yorkshire LTP Partners developed a suite of performance measures aligned to our Transport Strategy. This Plan contains the results for Tier 2 indicators:

Tier 2: Delivery / Implementation – LTP related outcome indicators, including mode share of travel, public transport patronage, highway maintenance and road casualty numbers.

The Tier 2 indicators ascribed to AQ&CG activities are “Mode Share of Journeys” measure (2-01a), which relates to travel to / from the four main South Yorkshire urban centres. The other relevant Tier 2 indicator reports “Levels of NO_2 and PM_{10} in Air Quality Management Areas” (2-06a). Our ambition is for a slight improvement during the period of our Implementation Plan, with reported results actually exceeding projections.

Results from our designated Performance Indicators show that recorded levels of NO_2 are as predicted, remaining at a constant 44 -45 $\mu g/m^3$. Levels of PM_{10} have fallen further than originally projected, i.e. 22 - 23 $\mu g/m^3$, as compared to the forecasted 25 $\mu g/m^3$. These totals, however, are reported against a background of falling traffic levels.

Levels of monitored annual mean nitrogen dioxide and PM_{10} in South Yorkshire are decreasing gradually in the county’s AQMAs. Between 2005 and 2013, the average nitrogen dioxide annual mean measured by the group in AQMAs fell from 49 $\mu g/m^3$ to 43 $\mu g/m^3$. The average annual mean PM_{10} in South Yorkshire’s AQMAs fell from 31 $\mu g/m^3$ to 24 $\mu g/m^3$.

TABLE 5: South Yorkshire Air Quality and Climate related Performance Indicators (updated August 2014)

INDICATOR	COMPONENT	RESULTS							PERFORMANCE	
									RAG	Notes
	Calendar Year	2008	2009	2010	2011	2012	2013	2014	RAG	Notes
2-01a : MODE SHARE OF JOURNEYS TO / FROM URBAN CENTRES People (%)	Single occupancy cars	426,305 (30.9)	433,639 (31.3)	438,154 (31.8)	423,101 (31.8)	421,344 (32.4)	432,069 (33.1)		**N/A**	No forecasts have been established for this indicator
	Multi occupancy cars	367,981 (26.6)	376,608 (27.2)	364,850 (26.5)	361,432 (27.1)	342,107 (26.3)	326,363 (25.0)			
	Light Goods Vehicles	108,288 (7.8)	102,006 (7.4)	103,127 (7.5)	102,725 (7.7)	102,598 (7.9)	100,553 (7.7)			
	Medium / Heavy Goods Vehicles	33,154 (2.4)	28,968 (2.1)	28,374 (2.1)	26,745 (2.0)	25,331 (1.9)	25,648 (2.0)			
	Buses	264,057 (19.1)	243,524 (17.6)	237,547 (17.2)	219,035 (16.4)	209,682 (16.1)	225,364 (17.3)			
	Trams	38,665 (2.8)	35,709 (2.6)	42,421 (3.1)	33,382 (2.5)	32,574 (2.5)	34,112 (2.6)			
	Trains	49,068 (3.6)	53,937 (3.9)	54,558 (4.0)	54,887 (4.1)	60,020 (4.6)	56,696 (4.3)			
	Motor Cycles	6,101 (0.4)	6,932 (0.5)	5,623 (0.4)	5,362 (0.4)	6,039 (0.5)	4,331 (0.3)			
	Pedal Cycles	6,468 (0.5)	7,330 (0.5)	7,150 (0.5)	7,805 (0.6)	7,554 (0.6)	7,037 (0.5)			
	Pedestrians	81,577 (5.9)	95,996 (6.9)	97,528 (7.1)	98,010 (7.4)	91,926 (7.1)	91,470 (7.0)			
	All	1,384,649 (100.0)	1,386,812 (100.0)	1,379,332 (100.0)	1,332,484 (100.0)	1,299,175 (100.0)	1,303,643 (100.0)			

	Calendar Year	2008	2009	2010	2011	2012	2013	2014	RAG	Notes
2-06a: LEVELS OF NO2 AND PM10 IN AQMAs ug/m3	NO2 (Actual)	44	45	45	44	45	43		**G**	Forecasts have been suggested to 2013 only at the present time. Projections for 2014 will be investigated once the implications of "Euro6" engines have been assessed.
	NO2 (Forecast)	N/A	N/A	N/A	45	45	44	TBC		
	PM10 (Actual)	24	22	25	23	22	24		**G**	
	PM10 (Forecast)	N/A	N/A	N/A	25	25	24	TBC		

RAG

R	Red: Performance not achieving forecast level and / or worse than reported in the previous year.
A	Amber: Performance improving but still not achieving forecast level and / or worse than reported in the previous year but improved since the ‘base year’.
G	Green: Performance matching or exceeding forecasts and / or better than in the previous year.
N/A	Not Available.

Section Four; Interfaces with Other LTP Groups and External Agencies

SUBJECT	ISSUE
ASSET MANAGEMENT & MAINTENANCE GROUP (Lead officer - Lee Garrett, DMBC)	
Energy efficiency	Reduce the carbon impact of our assets.
Low carbon energy	Exploit our existing and future assets for the generation of low carbon energy.
Low carbon travel	Ensure our assets support the promotion of travel modes such as cycling, walking and public transport.
Alternative / Low Carbon fuels	Maintenance implications of installing new infrastructure for alternative / renewable fuels for vehicles. Ensure our infrastructure supports the provision of refuelling facilities in recognition of the increasing shift towards low emission fuels including gas, electric and hydrogen. Specifically we will, together, develop a low carbon energy strategy across the LTP's assets, including the identification of sites within our asset base suitable for gas and electric recharging.
Lighting	Trialling / use of LED type lighting and associated capital costs; reducing the number and time lamps are on.
Use of assets for energy generation	Full assessments required on the scope and nature of assets for energy generation, e.g. use of signs and fixtures as sites for the generation of electricity, such as solar panels.
Better maintained roads	A better understanding required on the carbon and low emission impacts of "better" road surfacing.
NETWORK MANAGEMENT GROUP (Lead officer – Peter Vickers, SCC)	
Air pollution & other emissions	Make informed decisions to mitigate air pollution and other emissions and develop our collective modelling capability.
Journey reliability	A focus on journey reliability (rather than journey speed) is helpful to both agendas.
Project Assessment	There is a need for a more joined up process of formulating / assessing schemes. Carbon / air quality impacts need to be written specifically into scheme assessments of all significant schemes.
sylTS	There would be productive interfaces between sylTS and air quality assessments.
Highway incidents	Consideration needs to be given to the management of incidents on the highway and which agencies need to do what.
Carbon impact	Climate policies are very broad - consideration should be given to appropriate indicators of carbon impact.
FREIGHT PARTNERSHIP GROUP (Lead officer – Anne Beddoes)	
Engage with the freight community	Shape and complete the Freight Strategy so that air quality and carbon are mitigated.
Eco Stars	Promote Eco Stars to all fleet operators.
PUBLIC TRANSPORT BOARD (Lead officer – Louise Fannon)	
Fleet performance	Establish the current make-up and performance of the operator fleet.
	Develop a plan with emissions performance improvement over the next 10 years in line with collective AQAPs.
Eco Stars	Promote Eco Stars to all fleet operators.
Drive Green	
CYCLING AND ACTIVE TRAVEL GROUP (Lead Officer – TBC)	
Achieve modal shift	Develop an integrated communications plan.

SUBJECT	ISSUE
	Influence support packages for organisations Travel Plans e.g. advice on using vehicles efficiently / alternative fuels.
	Understand the impact of initiatives to promote more efficient vehicles on modal shift.
	Understand the opportunities to further reduce emissions related to initiatives such as car clubs / electric bikes.

SAFER ROADS PARTNERSHIP (Lead officer – Joanne Wherle)	
Eco-driving	Continue to integrate eco-driving into the safer roads programme.
Vehicle technology	Understand the safety issues associated with changes to vehicle technology, especially for electric, gas, hybrid and hydrogen vehicles.
HIGHWAYS ENGLAND (Sheffield and Rotherham Councils for M1 motorway))	
M1 speed limits.	Continue to work with the HE in relation to speed limits on the M1 motorway at Tinsley for air quality reasons, and other issues on the HE network, such as air quality issues on the A616 Transpennine route.

Appendix A: Source Apportionment of Emissions

South Yorkshire AQCG
Source Apportionment Methodology

It is necessary to update the source apportionment exercise for the Air Quality Management Areas (AQMAs) in South Yorkshire to contribute to the evidence base for prioritising measures within the Sheffield City Region air quality action plan.

The approach is based on Statutory Defra guidance[1] to assess air quality by Local Authorities in their Local Air Quality Management (LAQM) Review and Assessment duties and details the standard methodology advised for conducting modelling exercises.

This methodology represents a consistent approach which is available to all Local Authorities, using locally operated modelling systems.

It shall be noted that all modelling comes with inherent uncertainty and although a standard methodology looks to reduce this uncertainty, any modelling results come with a +/-25% accuracy.

The exercise will be conducted using the latest available Airviro Model used in South Yorkshire over the last 16 years. Officers from each South Yorkshire local authority have received appropriate training for Airviro emissions database work and dispersion modelling, and are active members of a national Airviro User Group. Furthermore, officers have vast experience of undertaking their LAQM duties. There is therefore sufficient local expertise to ensure an agreed and consistent approach within the sub region.

The agreement is to use a baseline source apportionment of 2014. Therefore the following data sets are used;

- EDB – Rotherham/jk/EDB_0715_Base (database developed by AEAT using the Sheffield LEZ[2] vehicle split with updated EF from COPERT4 v10.0 and NAEI v6.0.1)
- Weather data – Scenario for 2014
- Traffic – AADT for 2014 from DfT[3]

The following factors will also be applied to any source apportionment model runs;

- Resolution will be at 25m grid squares
- Nitrogen dioxide conversion using the Derwent-Middleton equation

Model runs are performed for each AQMA and results are presented at sensitive receptors and/or at the worst case location where the following will be calculated;

Stage 1 – Source Apportionment of Sector Emissions

The percentage contribution of the following sectors will be calculated for South Yorkshire: Industrial; Domestic; Background and Transport.

Stage 2 – Source Apportionment by Vehicle Type

The percentage contribution of each vehicle type to the transport sector emissions in each AQMA, the vehicle types are as follows:
Petrol Car, Diesel Car, LGV (100% considered diesel), Bus, HGV Rigid and HGV Articulated.
The % contribution will be calculated by performing a model run with one vehicle type in turn being omitted and subtracted from the total road transport emissions.

Subsequent breakdown of total NOx emissions in South Yorkshire, using Airviro estimates that 53% of emissions with the county are attributable to industrial, commercial and domestic sources, whilst the remainder (47%) are due to road transport emissions.

Road traffic emissions have consequently been further assessed, using the above methodology, in order to calculate the percentage contribution of each vehicle type to the transport sector emissions in each AQMA. These results are presented below for each of the four South Yorkshire districts.

References;

[1]https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69334/pb13081-tech-guidance-laqm-tg-09-090218.pdf
[2]https://www.sheffield.gov.uk/environment/air-quality/LEZ-feasibility.html
[3]http://www.dft.gov.uk/traffic-counts/cp.php

Appendix G: Further Evaluation of Actions

Proposed Actions Table

Low, Medium and High classification from Table A.1 – Action Toolbox LAQM.TG(16)

Low effect – action focused on a small proportion of sources contributing to an exceedance

Medium effect – action focused on only one key emissions source

High effect – action focused on dealing with key high emitting sources, or a number of emissions sources

No.	Proposed Action	Measure Category	Measure Classification	AQMA	Potential Funding	Lead Authority	Impact	Targeted Fleets / sources	Table A.1 Action Plan Toolbox TG(16) Effect on reducing $PM_{2.5}$ concentrations	Table A.1 Action Toolbox TG(16) Effect on reducing NOx and PM_{10} emissions Low, Medium, High Classification	Definite / Potential (as detailed Summer 2016)
1	Carriageway improvements	Traffic Management	Congestion Management	Dependent on location	To be confirmed	BMBC, ST	Alleviate congestion, reduce emissions	All	Yes	Table A1 deems the impact as being low. However, previous traffic management schemes in the borough have had a more significant impact	**Potential**, subject to future funding bids
2	SYMCa Bus Reform	Transport Planning and Infrastructure	Public Transport Improvements	Where bus routes located (2A, 4, 5, 7)	SYMCA	BMBC, ST	Bus emission standards, reliable journey time, less congestion, modal shift from car?	Bus	Yes	High	**Definite** Development of agreement currently ongoing, expected to be implemented by 2027

No.	Proposed Action	Measure Category	Measure Classification	AQMA	Potential Funding	Lead Authority	Impact	Targeted Fleets / sources	Table A.1 Action Plan Toolbox TG(16) Effect on reducing $PM_{2.5}$ concentrations	Table A.1 Action Toolbox TG(16) Effect on reducing NOx and PM_{10} emissions Low, Medium, High Classification	Definite / Potential (as detailed Summer 2016)
3	Encourage uptake of lower emission vehicles and alternative fuels (EVs, CNG, H_2)	Promoting low emission transport	Procuring alternative refuelling infrastructure to promote Low Emission Vehicles, EV recharging Public vehicle procurement – prioritising uptake of low emission vehicles	All and boroughwide)	SCR gainshare LTP Developer contributions (planning application conditioning)	BMBC, H&T	LEVs	All	Yes	High	**Potential** Subject to current funding bids
4	Langsett	Traffic Management	Congestion Management	6	HE AQ fund, Trans Pennine scheme	HE	Traffic management schemes	All	Yes	High, as Barnsley MBC detailed assessment (2013) indicated a more significant emission reduction	**Potential**, subject to funding and stakeholder approval

No.	Proposed Action	Measure Category	Measure Classification	AQMA	Potential Funding	Lead Authority	Impact	Targeted Fleets / sources	Table A.1 Action Plan Toolbox TG(16) Effect on reducing $PM_{2.5}$ concentrations	Table A.1 Action Toolbox TG(16) Effect on reducing NOx and PM_{10} emissions Low, Medium, High Classification	Definite / Potential (as detailed Summer 2016)
5	Planning applications – air quality assessment and mitigation	Policy Guidance and Development Control	Air Quality Planning and Policy guidance	All and boroughwide	Existing budget	BMBC Reg Services	Encourage and require Low Emission Strategy mitigations for new development	All	Not detailed in Table A1, but Low Emissions Strategy indicated as having +ve impact on $PM_{2.5}$ concentrations	Not detailed in Table A1, but Low Emissions Strategy indicated as having High impact on reducing NOx and PM_{10} emissions	**Definite** Ongoing since 2015
6	Speed restrictions on gradient Feasibility Study	Traffic Management	Congestion Management	4	Existing budget	BMBC Reg Services	Imposition of speed controls	All	Yes	Subject to conclusions of assessment (supporting dispersion modelling exercise)	**Potential** Subject to identification of appropriate funding, feasibility study and stakeholder approval
7	Procurement	Policy Guidance and Development Control	Sustainable Procurement Guidance	All and boroughwide	Procurement budget (See WYLES?)	Procurement / Assets	Lower emission vehicles for Council fleets / supply chain	All?	Not detailed in Table A1, but Low Emissions Strategy indicated as having +ve impact on $PM_{2.5}$ concentrations	Not detailed in Table A1, but Low Emissions Strategy indicated as having High impact on reducing NOx and PM_{10} emissions	**Potential**, subject to discussion and negotiation with Procurement

No.	Proposed Action	Measure Category	Measure Classification	AQMA	Potential Funding	Lead Authority	Impact	Targeted Fleets / sources	Table A.1 Action Plan Toolbox TG(16) Effect on reducing $PM_{2.5}$ concentrations	Table A.1 Action Toolbox TG(16) Effect on reducing NOx and PM_{10} emissions Low, Medium, High Classification	Definite / Potential (as detailed Summer 2016)
8	Control over emissions from Part B and A2 processes, and act as consultees for Part A1 processes	No EU category / classification	No EU category / classification	All and boroughwide	Contained within existing budget	BMBC Reg Services	Reduction in NOx and PM emissions	Industrial	Yes	Not detailed in Table A1, but will have +ve impact on reducing NOx and PM_{10} emissions	**Definite**, ongoing from previous Action Plans
9	Enforcement of the Clean Air Act with regards to industrial smoke	No EU category / classification	No EU category / classification	All and boroughwide	Contained within existing budget	BMBC Reg Services	Reduction in NOx and PM emissions	Industrial	Yes	Not detailed in Table A1, but will have +ve impact on reducing NOx and PM_{10} emissions	**Definite**, ongoing from previous Action Plans
10	Enforcement of the Clean Air Act with regards to domestic smoke control	No EU category / classification	No EU category / classification	All and boroughwide	Contained within existing budget	BMBC Reg Services	Reduction in NOx and PM emissions	Domestic	Yes	Not detailed in Table A1, but will have +ve impact on reducing NOx and PM_{10} emissions	**Definite**, ongoing from previous Action Plans
11	Investigation of nuisance complaints, including appropriate action to resolve the problem	No EU category / classification	No EU category / classification	All and boroughwide	Contained within existing budget	BMBC Reg Services	Reduction in NOx and PM emissions	Domestic	Yes	Not detailed in Table A1, but will have +ve impact on reducing NOx and PM_{10} emissions	**Definite**, ongoing from previous Action Plans

No.	Proposed Action	Measure Category	Measure Classification	AQMA	Potential Funding	Lead Authority	Impact	Targeted Fleets / sources	Table A.1 Action Plan Toolbox TG(16) Effect on reducing $PM_{2.5}$ concentrations	Table A.1 Action Toolbox TG(16) Effect on reducing NOx and PM_{10} emissions Low, Medium, High Classification	Definite / Potential (as detailed Summer 2016)
12	BMBC fleet improvements	Vehicle Fleet Efficiency	Vehicle retrofitting programmes	All and boroughwide	Subject to future funding opportunities and meeting funding criteria	BMBC	Reduction in NOx and PM emissions	HGVs, LGVs	Yes	Medium	**Potential**, dependent on future opportunities
13	Priority parking for LEVs	Promoting low emission transport	Priority parking for LEVs	All and boroughwide	BMBC	BMBC	Reduction in NOx and PM emissions	Petrol and Diesel Cars	Yes	High	**Potential**, subject to BMBC Car Parking Strategy requirements (Strategy being reviewed in 2016)
14	Freight and Delivery Management	Freight and Delivery Management	Delivery and Service plans	All and boroughwide	To be confirmed	BMBC H&T	Reduction in NOx and PM emissions	HGVs, LGVs	Yes	Medium	**Potential**, subject to future opportunities for dialogue with operators

No.	Proposed Action	Measure Category	Measure Classification	AQMA	Potential Funding	Lead Authority	Impact	Targeted Fleets / sources	Table A.1 Action Plan Toolbox TG(16) Effect on reducing $PM_{2.5}$ concentrations	Table A.1 Action Toolbox TG(16) Effect on reducing NOx and PM_{10} emissions Low, Medium, High Classification	Definite / Potential (as detailed Summer 2016)
15	ECO Stars HDV Fleet Recognition Scheme	Vehicle Fleet Efficiency	Vehicle Fleet efficiency and recognition schemes	All and boroughwide	STTF – Access fund	BMBC, H&T	Fleet operation best practice	Buses, HGVs, Vans	Yes	Medium	**Definite** Subject to Sustainable Travel Transition funding 16-17, and future Access funding
16	ECO Stars Taxi Fleet Recognition Scheme	Vehicle Fleet Efficiency	Vehicle Fleet efficiency and recognition schemes	All and boroughwide	STTF – Access fund	BMBC, H&T	Taxi Fleet operation best practice	Taxis, Private Hire Vehicles	Yes	Medium	**Potential** Subject to suitable funding
17	ECO Driving	Vehicle Fleet Efficiency	Driver training and ECO driving aids	All and boroughwide	STTF – Access fund, and others?	BMBC, H&T	Public and Private sector LDV best practice	Diesel and Petrol LDVs (Cars)	Yes	Medium	**Potential** Subject to future funding

No.	Proposed Action	Measure Category	Measure Classification	AQMA	Potential Funding	Lead Authority	Impact	Targeted Fleets / sources	Table A.1 Action Plan Toolbox TG(16) Effect on reducing $PM_{2.5}$ concentrations	Table A.1 Action Toolbox TG(16) Effect on reducing NOx and PM_{10} emissions Low, Medium, High Classification	Definite / Potential (as detailed Summer 2016)
18	Consolidation Centre	Freight and Delivery Management	Freight Consolidation Centre	All and boroughwide	Subject to opportunity to develop these facilities as part of future development in the borough	BMBC	Reduction in NOx and PM emissions	HGVs	Yes	Medium	**Potential**, dependent on future opportunities
19	Barnsley Intelligent Transport System (MOVA / SCOOT)	Traffic Management	Congestion Management	2A, 4, 5	Maintenance of systems cost met until 2018	BMBC, H&T	Alleviate congestion	All	Yes	Low	**Definite** Implemented, ongoing maintenance to 2018
20	Encourage cycling and walking (developing infrastructure and campaigns)	Promoting Travel Alternatives Transport Planning and Infrastructure	Promotion of Cycling Promotion of Walking Public cycle hire scheme Cycle network	All and boroughwide	SCR, Developer contributions, STTF (future access funds)	BMBC, H&T	Modal Shift	Diesel and Petrol LDVs (Cars)	Yes	Low	**Potential** Subject to Sustainable Travel Transition funding 16-17, and future Access funding

No.	Proposed Action	Measure Category	Measure Classification	AQMA	Potential Funding	Lead Authority	Impact	Targeted Fleets / sources	Table A.1 Action Plan Toolbox TG(16) Effect on reducing $PM_{2.5}$ concentrations	Table A.1 Action Toolbox TG(16) Effect on reducing NOx and PM_{10} emissions Low, Medium, High Classification	Definite / Potential (as detailed Summer 2016)
21	Care4Air	Public Information	Via the internet, leaflets, radio, television and other mechanisms	All and boroughwide	To be identified	BMBC Reg Services	Awareness raising campaigns facts Health benefits of cycling and walking	All (in this case, traffic, industrial and domestic)	Not detailed in Table A1	Not detailed in Table A1	**Potential** South Yorkshire regional action, subject to funding
22	Assessment of air quality impact of major traffic schemes	Traffic Management	Congestion Management	All and boroughwide	Existing budget	BMBC Reg Services	Ensure air quality impact of the scheme is minimised	All	Not detailed in Table A1	Not detailed in Table A1	**Definite**, ongoing from previous Action Plans
23	Smoky diesel Hotline	Public Information	Via the internet, leaflets, radio, television and other mechanisms	All and boroughwide	Contained within existing budget	BMBC Reg Services	Reduction in NOx and PM emissions	HGVs, Buses	Yes	Not detailed in Table A1, but will have +ve impact on reducing NOx and PM_{10} emissions	**Definite**, previous action, but consideration given to resurrecting this action due to current concerns regarding diesel emissions

No.	Proposed Action	Measure Category	Measure Classification	AQMA	Potential Funding	Lead Authority	Impact	Targeted Fleets / sources	Table A.1 Action Plan Toolbox TG(16) Effect on reducing $PM_{2.5}$ concentrations	Table A.1 Action Toolbox TG(16) Effect on reducing NOx and PM_{10} emissions Low, Medium, High Classification	Definite / Potential (as detailed Summer 2016)
24	Car and Lift sharing programmes	Alternatives to private vehicle use	Car and Lift sharing schemes	All and boroughwide	STTF, Access	BMBC, SYTPE	Reduction in NOx and PM emissions	Petrol and Diesel Cars	Yes	Low	**Definite**, see https://southyorkshire.liftshare.com
25	Promoting Travel Alternatives (Workplace travel planning; encourage / facilitate home-working; personalised travel planning; school travel plans)	Promoting Travel Alternatives	(Workplace travel planning; encourage / facilitate home-working; personalised travel planning; school travel plans)	All and boroughwide	Local Transport Plan?	BMBC H&T	Reduction in NOx and PM emissions	Petrol and Diesel Cars	Yes	Low	**Definite**, ongoing
26	Anti-idling policy feasibility study	Traffic Management	Anti-idling enforcement	All and boroughwide	To be confirmed	BMBC	Reduction in NOx and PM emissions	All	Yes	Low	**Potential**, subject to assessment of feasibility

APPENDIX H

Key programmes and activities that have contributed to the delivery of the SEAP and beyond.

1.0 Energy Efficiency & Renewable Energy

a. Council Buildings & Retrofit:

- £4.3M Public Sector Decarbonisation Scheme delivered which involved a range of energy efficiency upgrades and installations to key Council buildings and leisure centres, including LED lighting, BMS updates, solar photovoltaic installation, building fabric improvement, air source heat pumps installation and upgrades to controls. An initial review indicates total carbon savings of 611 tonnes of carbon dioxide equivalent per year based on today's energy costs with financial savings of £494k per year.
- £1.3M Public Sector Decarbonisation Scheme delivered energy metering systems and building controls across 11 BMBC maintained schools which has resulted in the installation of new hardware and changes to the building management strategy; these actions combined with an enhanced metering capability, means that is possible to identify areas of the estate that demand more energy and apply a plan to reduce or eliminate energy wastage.
- Behaviour change programmes have been introduced to reduce the demand for energy in Council buildings.
- Repairs have been made to the Cannon Hall roof, improving insulation, and reducing heat loss.
- Most energy and resources purchased for Council owned buildings is sourced from low carbon and renewable sources and according to the Department for Energy Security and Net Zero, the fuel mixed used is lower than the UK average.
- Sixteen energy-efficient houses have been built at Billingley View in Bolton upon Dearne, as part of a pilot scheme for the Barnsley Low Carbon Standard new build specification. All the properties will be owned by BMBC for social rent and be let and managed by Berneslai Homes.

b. Housing Retrofit:

Energise Barnsley

- 300 Council owned properties across the borough benefited from installations of solar energy, new batteries and smart meters and plans.
- Energise Barnsley and Berneslai Homes are preparing for a solar PV project in Barnsley and the surrounding areas that will entail installing solar PV onto 1000 social housing homes over the next 18 months. As part of this programme of works, a community bond will be raised, and the new model will generate a surplus which goes into a Community Pot. Projects supported to date include battery installations, LED provision to sports facilities, energy advice clinics, charity food banks, and healthy eating schemes.

Social Housing Decarbonisation Fund

- £3.58m Wave 2.1 funding secured to finance the insulation upgrade of 148 Council properties.
- £880k Wave 1 used to finance energy efficiency improvements to 64 Council D, E and F rated properties, providing external wall and loft insulation.

Green Homes Grant / Sustainable Warmth Fund

- £1.82m funding secured to upgrade 221 private sector properties with energy efficiency measures, including external wall insulation, room in roof insulation and loft insulation.

Household Support Fund

- £4.7m has been received from the Department of Work and Pensions to support people with their food, energy, and other essential household costs.

The Affordable Warmth Charter

- The Affordable Warmth Charter outlines the organisation's commitment to ensuring that residential properties are energy efficient, reducing fuel poverty and the associated health implications.

Social Housing Decarbonisation Fund Wave 2.1

- £3.58m total project value to support the upgrade the energy efficiency improvements of council housing to provide warmer homes and lower bills for tenants.

Supplementary Planning Documents

- In 2023, the Sustainable Construction & Climate Adaptation Supplementary Planning Document (SPD) was approved which sets out BMBCs approach to planning decisions in respect of sustainable construction and adapting to climate change.
- In 2024, two of BMBC's SPDs were successfully adopted at Full Council on 28 March 2024, following a public consultation in 2023. The first SPD covers Biodiversity and Geodiversity, while the other looks at House Extensions and other Domestic Alterations.

2.0 Sustainable Transport & Active Travel

A well-designed system can support economic growth, improve health and well-being through improved air quality, and result in a reduction of greenhouse gas emissions. Sustainable transport has the capacity to support the mobility needs of a society in a way that has a lower impact on the environment and does not impact the mobility needs of future generations. Some of the key programmes of work that have been or are in the process of being delivered include:

a. Electric Vehicles

To date, BMBC has completed two large Electric Vehicle charging infrastructure programmes of work, resulting in 72 publicly available car charging bays across the borough and 34 car charging bays on our premises to assist with the electrification of our fleet.

Further funding has been secured by SYMCA through the Local Electrical Vehicle Infrastructure funding and on-street residential scheme. BMBC will be awarded a share of the £8.9m awarded to SYMCA for delivery with £125K to be issued over the next 2 years to support with technical expertise and the creation of a strategy for scheme delivery.

The Council and Berneslai Homes operate 36 fully electric vehicles and 3 hybrid vehicles. 38 of these have directly replaced diesel vehicles. The vehicle replacement programme continues to review the fleet and will replace further diesel vehicles with electric vehicles if operationally and financially viable.

The list below details all new installations and charging types:

Council Fleet vehicle chargers:

- Smithies Depot, Smithies Lane, Barnsley – 30x 7kW charging bays.
- Barnsley Crematorium, Ardsley, Barnsley – 4x 7kW charging bays.

Council Publicly Available Chargers:

- Queen Street Car Park, Goldthorpe – 4x 7kW charging bays.

- Churchfields Car Park, Barnsley – 6x 7kW charging bays.
- Sackville Street Car Park, Barnsley – 4x 7kW charging bays.
- Shrewsbury Road Car Park, Penistone, Barnsley – 4x 7kW charging bays.
- Elsecar Heritage Centre Car Park, Elsecar, Barnsley – 4x 7kW charging bays.
- Bank Street Car Park, Cudworth, Barnsley – 4x 7kW charging bays.
- The Glassworks Car Park, Barnsley - 6x 7kW charging bays.
- Wombwell Park and Ride Car Park, Wombwell Car Park, Barnsley – 4x 7kW charging bays.
- Summer Lane Car Park, Wombwell, Barnsley – 6x 7kW charging bays.
- John Street Car Park, Barnsley – 2x 50kW charging bays.
- Church Street Car Park, Darton – 4 x 7kW charging bays.
- Mark Street Car Park, Barnsley – 6 x 7kW charging bays.
- West Road Car Park, Pogmoor – 4 x 7kW charging bays.
- Market Gate Shopper Car Park, Barnsley – 2 x 50kW & 6 x 7kW charging bays.

b. Highway Improvements & Maintenance

Operational Services are presently exploring opportunities to lower emissions of their fleet.

Recent highway improvement schemes have been designed to better integrate infrastructure into the surrounding environment, reducing the impact on wildlife, communities, and our landscape. Consideration is always given to the supply chain to ensure that there is a positive impact on the environment, wherever viable. Existing processes, such as gritting or responding to reports of defects, have been improved to improve efficiency across the network.

100% of BMBC s traffic signal network is now LED, improving signal head visibility, enhancing road safety, and securing the following savings: maintenance cost savings of around £5k per year; energy savings of approximately £50k per year based on today's energy costs; and carbon savings of 79%, reduced by 110 tonnes of carbon dioxide per year. Over £500k has been awarded for the Bus Virtual Trigger system, which will allow bus priority at signals, thus alleviating bus idling.

c. Active Travel

- £550K Active Travel Tranche 1: Town Centre to Hospital Scheme which used road space to create space for walking / cycling; the route now includes an improved link from the town centre to the Trans-Pennine Trail and low-level lighting to improve visibility and safety.

- £1.150m Active Travel Tranche 2: Elsecar to Cortonwood and Goldthorpe Station Access Schemes. Both provide an accessible network of new travel and green infrastructure.

- £3.3m Transforming Cities Funded programmes comprising A61 Royston to Town Centre, A635 Active Travel Scheme and Station Access Scheme.

- £2m Mayoral Legacy Funded programme to target town centre section of the A628 to improve connectivity and visibility of new link between Market Gate Bridge to Oakwell, upgrade of street furniture and encourage modal shift from use of cars on short trips to key leisure facilities.

- Upgrades to Trans Pennine Trail and Public Rights of Way.
- Over £1m from Active Travel Tranche 4 and 5 to deliver routes in the Dearne Valley and for a pipeline of schemes

- Active Schools Group created with partners to help facilitate improved support for schools to benefit the environment and increase physical activity.

- New offer to promote physical activity and active travel within workplace settings.

- £44m of funding has been allocated to Barnsley via the City Regional Sustainable Transport Settlement for schemes which drive growth through infrastructure investment, level up services and promote a modal shift to more active and sustainable forms of public transport. Schemes in development which are to be completed by 2027 comprising:

    - Darton Active Travel Route.
    - River Dearne Long Route.
    - Bus Rapid Transit.
    - Worsborough to Wombwell.
    - TransPennine Trail Scheme.
    - The SEAM Active Travel Hub.
    - Darton & Elsecar Active Travel Hub.
    - Smithies Bridge.
    - Town End Roundabout.
    - A628 Bus & Active Travel Priority Corridor.
    - Royston Link Road, Penistone Junction Improvements.

- £201,249 revenue funding spent in 2023/24 and £470,500 funding secured for 2024/25 for Walk, Cycle and Scoot initiatives comprising:
    - Management of the Barnsley Bike Works Active Travel Hub.
    - Creation of a new mobile bike works unit.
    - Launch of the new 'Ramp Up' programme to encourage school age children to use cycles and scooters.
    - New E-Bike loan and long-term hire programme.

Results: Delivery of 54 ramp up sessions and 314 wellbeing walks to 1071 individuals, 207 registered Active Travel Hub users, 146 individual e-bike loans. In terms of school engagement 83% of primary schools have benefited from engagement with 5633 children engaging in direct delivery. 1422 attended L1/L1 Bike Ability Training.

3.0 Resource Efficiency

a. Waste & Recycling

- Penistone Refugee and Asylum Seekers Support Group have recycled over 300 bicycles, so of which were donated by HW Martin that lead the waste contract. The bicycles have been distributed to families in need across the borough allowing people to keep fit, connect with nature and travel in a sustainable way.
- Glass that is collected at the kerb side in Barnsley through our local partners is recycled and manufactured. To date, 5800 tonnes of glass has been recycled.

b. Behaviour Change Campaigns

- The Communications Team have led several internal and external behavioral change campaigns to encourage people to reduce their resource and waste consumption.
- Recycling Awareness sessions delivered to Year 6 pupils.
- Recycling stand at Barnsley Library for Recycling week with resources and factsheets.

c. Social Value

- 2 Apprenticeship opportunities were created as part of the waste management

contract.

- Employment opportunities given to long-term unemployed.
- 2 careers sessions funded by the Department for Work and Pensions were delivered to Reed in partnership with the Growth Company.
- £600 Community Grant to North Gawber Colliery Football Club for new kits for their grassroot teams.
- Bags of soil improver, plant pots and seed trays were donated to a gardening group.

4.0 Decentralised Heating

a. Operational Heat Networks

There are 16 heat networks in Barnsley, all of which are operated by Berneslai Homes and powered by gas and ground-source heating to supply power to social housing.

b. New Heat Networks

Studies have been completed to consider a larger heat network for the borough using different sources of heat. BMBC will facilitate the creation of heat networks with third parties, however having reviewed lessons learned from other Authorities, BMBC does not wish to commercialise and operate as a power company owing to the significant levels of risk involved.

The Department for Energy Security & Net Zero are funding a study of the region that shows what cluster zones there could be for a network and which technologies to use. The study is due for completion in March 2024 and will help guide BMBC on how to progress heat networks in the future, helping to attract inward investment and achieve energy security. An assessment needs to be undertaken to determine whether a heat network is the correct measure for the long-term.

5.0 Natural Environment

a. Tree Planting:

Barnsley's first Tiny Forest was planted on 26 March 2021 in Brickpond, Goldthorpe funded by BMBC. Landscapers and local volunteers from the Council helped to plant the saplings from a broad variety of species.
Between 2023/2024, BMBC planted 9003 trees in and outside of woodlands as part of ongoing work to protect the borough and reduce carbon emissions. In terms of social value, a total of 481 people engaged in the sessions over a period of 754.5 hours. A further initiative led by Mayor Coppard to plant over 1.4 million trees (one for every person living in South Yorkshire) Barnsley have committed to plant 246,000 (one tree for every person living in the borough)

b. Green Flag Awards:

The following parks have been awarded the prestigious Green Flag Awards including Cannon Hall, Worsborough Mill, Carlton Marsh Local Nature Reserve, Elsecar Park & Local Nature Reserve.

c. Grass Cutting Services:

As part of standard maintenance, services are taking opportunities to enhance the environment and improve biodiversity whilst also negating damage to essential infrastructure wherever possible, examples of some of the initiatives include:

Rewilding: BMBC is trialling a new way of how we manage some selected plots of grass at 16 trial sites. Allowing them to grow, whilst still also ensuring sites remain looking neat, tidy, and semi-maintained. Having areas of tall grass will provide benefits for insects, birds, and mammals such as shelter, habitats, a place to hunt and breed. Neighbourhood Services is actively supporting others to join the movement and provide support to others to rewild suitable grassland areas. Reducing the time spent cutting the

grass will reduce the service areas carbon footprint and make financial and energy savings.

Peat free planting: Neighbourhood Services and partners are using peat free compost and alternatives from reliable sources.

No Mow May: BMBC supports the No Mow May campaign which is designed to encourage people to not mow their lawns and green spaces throughout the month of May as this allows wildflowers to grow and attract bees and other wildlife.

d. Local Nature Recovery Strategy:

The production of this document will be led by South Yorkshire Mayoral Combined Authority (SYMCA) as part of their Environmental Sustainability Plan and will provide a framework for understanding SYMCA's role in enabling environmental, social & economic prosperity. Once developed, the strategy will help public, private, and voluntary sectors to work better together for nature's recovery, enabling targeted efforts in areas that will benefit the most. The published strategy will include a local habitat map and a written statement of biodiversity priorities. It is anticipated that the strategy development will take up to 18 months and be published by March 2025 and be refreshed between 3-10 years.

e. Biodiversity Net Gain (BNG) & Habitats Creation:

BNG SPD: Proposed changes have been made to the Biodiversity & Geodiversity supplementary planning document (SPD) to include updates which cover new guidance from the Environment Act to achieve a minimum 10% BNG from developments. Once adopted, the updated SPD will supersede the version adopted in 2019. BMBC is presently exploring opportunities to add a compensation fee and charge to the planning application list of Council fees and charges, in instances where biodiversity measures cannot be delivered on site and Biodiversity Net Gain Units are not available for sale on the open market.

The Wentworth Castle Gardens Parkland & Gardens Recovery Programme: involved the creation of a new ten-hectare woodland at Moor Leys to reflect the historic mapping. Cattle have been re-introduced to the estate and new grazing regimes established. Plans remain in place to complete the arable reversion with a wildlife rich grassland meadow at the bottom of South Avenue, creating habitats that are in decline regionally, whilst also creating new experiences for visitors.

Visual Impact Provision Project at Dunford Bridge: The scheme involved the removal of existing high-voltage electricity transmission infrastructure. The landscape was restored through a variety of environmental protection measures such as habitat restoration, the planting of 9,000 trees, the installation of bat boxes and the development of new wildlife corridors for nesting. The steps have helped to preserve existing species and achieve a biodiversity net gain of 18%, setting high standards for future developments.

f. Protection of Peatlands & Moorlands:

A working plan that involves all partners has been put in place which involves regular communication. Campaigns have been programmed to remind the public of the risk of wildfires and to encourage them to act responsibly to protect our valuable natural resources and the associated habitats, flora, and fauna.

g. Environmental Awareness Training, Social Prescribing & other Initiatives:

The Wild Escape Project: The Culture and Visitor Economy service delivered this project which involved working with local school children to learn more about nature and biodiversity and to participate in creative activities. The project culminated on Earth Day

2023 with a new climate change themed willow sculpture created and visitors were encouraged to make climate pledges.

Barnsley Net Zero and Low Carbon Programme: Enterprise Barnsley in conjunction with Barnsley Business and Innovation Centre delivered this £108k programme of work to proactively encourage carbon reduction from the borough's small medium enterprises, guide business owners through appropriate training at the start of their sustainability journey and provide associated match funding to invest in energy efficient technology, reducing energy costs.

The Fettle Programme: Hosted at Wentworth Castle Gardens and has brought together BMBC and partners form the NHS and community sector to improve the wellbeing of adults with lived experience relating to mental health, through outdoor learning activities at Wentworth Castle Gardens. Participants continue to build their knowledge of mindfulness, storytelling and nature exploration whilst working therapeutically in nature.

The Union Jack Garden Design Project: Hosted at Wentworth Castle Gardens allows community groups across the borough to design a segment of the garden, promoting biodiversity. The areas involved are a key part of the only Grade one listed landscape and formal gardens in South Yorkshire.

More Money in Your Pocket: BMBC has a dedicated platform with access to local support to help customers that are experiencing difficulties due to the cost-of-living crisis. The service includes access to housing and household support, support with utility bills, food support, ways to manage money, wellbeing, employment, and skills plus other helpful tips to make financial savings and also care for the environment.

Health on the High Street: The Alhambra Shopping Centre will be transformed to create a town centre health hub to alleviate mounting pressure on Barnsley Hospital. The new location is more accessible to local people, and it is estimated that 100,000 visits a year could be diverted from the Hospital, while also bringing more visitors and economic benefits into the new look town centre, following the £220m Glass Works regeneration.

Skills and Employability South Yorkshire Programme: Approval was granted in February 2024 to enter a partnership with SYMCA to implement the UK Shared Prosperity Funded 'People and Skills' programme. This will ensure that Barnsley is an inclusive place where everyone can fulfil their learning potential, overcome barriers and benefit from sustainable employment that protects opportunities for future generations.

Migration of Information Technology Infrastructure to Cloud Based Solution: This has helped to reduce the amount of infrastructure required and has saved BMBC approximately £125,000 in ongoing operational support fees, a reduction in energy usage and reduced carbon footprint.

h. Flood Mitigation & Prevention

Connected by Water Alliance: The flooding in November 2019, provided a catalyst for the creation of the Connected by Water Alliance, which comprises all South Yorkshire local authorities, SYMCA, Yorkshire Water and the Environment Agency. The alliance works together, not only to deliver flood risk management schemes on the ground, but also to plan catchment wide measures for the future to help meet the challenges of climate change. The alliance aims to better protect the 25,000 homes, businesses, and regionally significant infrastructure through a range of all projects and, is exploring all measures to both adapt and mitigate the impacts of climate change across South Yorkshire and to reduce the impacts of flooding.

'Source to Sea' natural flood management drive: A natural flood risk management and habitat creation scheme for the Middle Don has seen a variety of nature-based solutions

to slow the flow and create more space for water.

6.0 Communications

The Communications team has been proactive in providing wrap-around support to all programmes of work and is constantly emulating best practice and building on lessons learned. An organisational communications plan detailing associated campaigns has been prepared. Some examples of some of the future campaigns include:

- Waste, recycling and enforcement activity updates.
- Design work pertaining to trees.
- Climate education.
- Rewilding.
- Bottle for benches.
- No Mow May.
- Great British Spring Clean.
- Active Travel announcements.
- Sustainability and Climate Change funding newsletter.
- Campaigns to protect the moorlands and peatlands.
- Affordable Warmth campaigns.
- Public health campaigns to promote physical activity as part of everyday life.

7.0 Procurement & Social Value (Commissioning of Services)

Social value is a critical feature in public sector contracts, and it refers to the wider financial and nonfinancial value created by an organisation through its day-to-day activities in term so the wellbeing of individuals and communities, social capital (the willingness of people to help each other) created and the environment. BMBC has a social value policy that details how we embed social value principles and make it the duty of everyone involved in commissioning, procurement, and project delivery to be responsible for the delivery of social value.

BMBC measure and determine social value using the national 'themes outcomes measures' (TOMS) framework. Each measure under this framework is allocated a monetary proxy value.

The Procurement Team operates a digital platform and training sessions for organisations that wish to supply BMBC with goods and services. Through external providers, partners and Enterprising Barnsley existing opportunities are also available to support our suppliers to become net zero. BMBC are looking at ways to ensure our supply chain can improve their carbon literacy and develop carbon action plans.

8.0 Greenhouse Gas Emisison and Environmental, Social & Governance Reporting

The Council is working with a global provider as part of the digital programme, to collate scopes 1, 2 and 3 emissions using recognised UK and global standards of reporting. The first data sets are due to be ready for release in Q4 2025.

Glossary of Terms

Abbreviation	Description
Airviro	Sophisticated software, operated by the four South Yorkshire local authorities, which enables the modelling of air pollution concentrations over a geographical area
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
CNG	Compressed Natural Gas
Defra	Department for Environment, Food and Rural Affairs
ECO Stars	Efficient, Cleaner Operation
EU	European Union
HDV	Heavy Duty Vehicle
HGV	Heavy Good Vehicle
LAQM	Local Air Quality Management
LGV	Light Goods Vehicle
NPPF	National Planning Policy Framework
MOVA	Microprocessor Optimised Vehicle Actuation
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
Part A1, Part A2 and Part B processes	Facilities which are regulated under the Environmental Permitting (England and Wales) Regulations 2010 SI 2010/675 (as amended ("the Regulations"). Part A2 and Part B processes are regulated by the Local Authority

PHOF	Public Health Outcome Indicator
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
SCOOT	Split Cycle and Offset Optimisation Technique
STTF	Sustainable Transport Transition Fund

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