



Rossendale Borough Council

AIR QUALITY ACTION PLAN FOR
MANCHESTER ROAD, HASLINGDEN AND
BACUP ROAD, RAWTENSTALL

July, 2016

In fulfillment of Part IV of the Environment Act 1995
Local Air Quality Management

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Report Reference Number	Final
Date	15 th July 2016

COUNCIL FORWARD

Air Quality in Our Area

Clean air is vital for our health and the environment and essential for making sure our city is a welcoming place for all to live and work now and in the future. Everyone has a part to play in improving air quality, starting with the way we behave.

Simple things like walking to work or school will benefit air quality as well as have knock-on benefits for your health and the environment. Think before you make a journey and ask yourself if it is necessary. Local Authorities and the communities who live within them are responsible for working together and improving the air we breathe. What we do locally can also benefit regional air quality and help meet air quality limit values and objectives as set out in European and UK law.

Reducing air pollution should not be considered a regulatory burden but as an opportunity to improve the health and wellbeing of residents living within it. The rewards of addressing air pollution include improved health, increased productivity, reduced health costs and a healthier, more productive environment.

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer it particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is a strong correlation with equality and fairness, because areas with poor air quality are also often the less affluent areas^{1,2}. The annual health cost to society of the impacts of just one type of air pollution - particulates alone in the UK is estimated to be around £16 billion³

Air Quality in Rossendale

We are fortunate that in Rossendale air quality is relatively good compared to most other areas in England. However, we do have two small areas where air quality levels are close to or exceeding recommended levels, due to the amount of NO₂ present in the air at testing sites. These are known as Air Quality Management Areas, (AQMA) and this Plan is about the issues and actions to improve air quality within them.

¹ Environmental equity, air quality, socioeconomic status and respiratory health, 2010

² Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

³ Defra. Abatement cost guidance for valuing changes in air quality, May 2013

This action plan is also written against the back drop of an improving picture. The levels of recorded NO₂ have been falling. Since 2014 the levels of NO₂ have measured below, although close to, the annual mean objective. Although this is below the level at which a new AQMA would be set, as it is still close to the threshold, it is important that we continue to operate AQMAs in these areas until we are certain that levels are consistently below the threshold.

Actions already planned and in the process of being realised. The air quality challenges faced by Rossendale are primarily due to exhaust emissions from vehicles. As such, European and National efforts to improve vehicle emission standards, a new, relocated bus station, better signage and new technologies to direct traffic away from congestion, a recent successful grant award for cleaner bus engine technology and the demolition of buildings on Bacup Road should see the levels continue to fall. In the medium term, increasing the adoption of electric vehicles, changing and improving traffic flows around our major routes and improved non-car connectivity from buses, trains and light rail should help Rossendale to improve the health and wellbeing of its communities.



Barbara Ashworth
Portfolio Holder

A handwritten signature in black ink that reads "Barbara Ashworth".

TECHNICAL EXECUTIVE SUMMARY

This Air Quality Action Plan (AQAP) has been produced by the Air Quality Management Resource Centre (AQMRC) at the University of the West of England (UWE), Bristol on behalf of Rossendale Borough Council (RBC). It is designed to address the air quality problems identified at Bacup Road, Rawtenstall and Manchester Road, Haslingden.

The development of an AQAP is a statutory duty following the declaration of an Air Quality Management Area (AQMA) for one or more of the air quality strategy objectives. Before adoption the plan must be consulted on with stakeholders and must also be appraised by the Department of Environment, Food and Rural Affairs (DEFRA) as being fit for purpose.

The purpose of the AQAP is, on the basis of evidence, to set out actions to be implemented that will improve air quality and work towards meeting the objectives.

The AQAP has been developed from discussions within a steering group and on the basis of guidance from the AQMRC, UWE, Bristol. The development of the AQAP has been subject to consultation, having been submitted to RBC and other stakeholders for scrutiny and general comment. Comments received during the consultation process have been taken into consideration and where possible incorporated into the Plan. The final version of the Plan will be submitted to Defra for comment, and if accepted will then be adopted as a formal authority plan.

This AQAP has been drawn up with the best available evidence and it is acknowledged that as new policies and opportunities arise, additional measures may become available. It is therefore recommended that this AQAP is continuously reviewed and updated as appropriate.

Reducing air pollution, particularly within AQMAs should not be considered a regulatory burden but as an opportunity to improve the health and wellbeing of residents living within it.

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INTRODUCTION

Background

Rossendale Borough Council (RBC) has assessed air quality within its boundary against national air quality objectives for seven key pollutants since 1997. These health-based objectives are set out in the National Air Quality Regulations (2007). The objectives for six of the seven regulated pollutants are not exceeded in Rossendale, however, exceedances of the annual mean objective for nitrogen dioxide (NO₂) were identified in two areas: Bacup Road, Rawtenstall and Manchester Road, Haslingden, resulting in the declaration of Air Quality Management Areas (AQMAs) at these locations (Figure 1 and 2 in support documents) in 2011. Over the past five years nitrogen dioxide (NO₂) concentrations have fluctuated at both locations, but in 2014 measured NO₂ concentrations were below, although close to, the annual mean objective within the two designated AQMAs. Given the annual fluctuations and recent exceedances of the annual mean objective it is premature to consider revocation of the AQMAs and therefore an Air Quality Action Plan (AQAP) is still required. In addition, proposed developments within, or close to, both sites and a forecast increase in traffic flows nationally⁴, suggest that this objective could be exceeded again in the future.

The Environment Act, 1995

Under Part IV of the Environment Act, 1995, local authorities have a statutory duty to undertake periodic reviews of ambient (outdoor) air quality within their respective boundaries. Specifically, **Section 84** of the Environment Act imposes duties on a local authority with respect to AQMAs. The local authority must carry out further assessments and draw up an AQAP specifying the measures to be carried out and the time scale to bring air quality in the area back within limits. **Section 85** gives reserve powers to cause assessments to be made in any area and to give instructions to a local authority to take specified actions. Authorities have a duty to comply with these instructions. **Section 87** provides the Secretary of State with wide ranging powers to make regulations concerning air quality. These include standards and objectives, the conferring of powers and duties, the prohibition and restriction of certain activities or vehicles, the obtaining of information, the levying of fines and penalties and the hearing of appeals.

⁴ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/260700/road-transport-forecasts-2013-extended-version.pdf

The Air Quality Strategy

The 1997 national Air Quality Strategy introduced the Local Air Quality Management (LAQM) model and associated Review and Assessment process. The most recent 2007 version of the Air Quality Strategy sets out the UK vision for clean air for a good quality of life and the steps being taken to achieve this. The Strategy also outlines the established framework of LAQM and details a series of air quality objectives, as prescribed in the Air Quality Regulations (2002), to be achieved with the aim of protecting human health and the environment. The objectives have been set throughout the UK at levels that aim to protect the vulnerable in society from the harmful effects of breathing air pollution.

The NO₂ Problem

The primary source of NO₂ is emissions from road vehicles. In order to mitigate the problem, RBC is tasked with identifying specific options that will reduce emissions of nitrogen oxides (as a precursor to the formation of nitrogen dioxide) and primary NO₂ from vehicles, and thereby reduce concentrations of NO₂ experienced locally.

NO₂ is a toxic gas. In elevated environmental concentrations, it exacerbates respiratory conditions including decrease in lung function growth, asthma prevalence, cancer incidence, adverse birth outcomes and mortality (COMEAP, 2015⁵). It is formed from atmospheric nitrogen, either directly or as its precursor nitric oxide (NO), in combustion processes but especially where there are very high temperatures and pressures. For this reason, NO₂ is an important by-product of the internal combustion engine. Both NO₂ and NO are included together as oxides of nitrogen (NO_x), which are produced by all combustion processes. Usually, NO predominates initially but then reactions take place in the atmosphere with oxidants such as ozone (O₃) to produce NO₂. In addition to being harmful in its own right, NO₂ is implicated in the cycle of atmospheric ozone chemistry and thus indirectly in global warming. It is therefore of both local significance (health effects) and global importance (sustainability and climate change).

Elevated concentrations of NO₂ close to the main road network are the focus for this Action Plan. However, concentrations of NO₂ decline to background levels with increasing distance from the carriageway, so the most significant problem arises where people are exposed within a distance of approximately 10 metres from the road.

RBC's *Further Assessment Report 2014* predicted breaches of the annual mean criterion within the 10m zone and, more specifically, at the façade of relevant receptors. Statutory

⁵https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/411756/COMEAP_The_evidence_for_the_effects_of_nitrogen_dioxide.pdf

Guidance requires any designated AQMAs to encompass residential and other sensitive receptors within the area of air quality objective exceedances. As such, Rossendale's AQMA encompassed all residential and similar property within areas of exceedance.

It should, however, be noted that the solutions proposed in the AQAP measures need not, and should not, be confined to the areas where exceedances and relevant exposure coincide. The nature of the problem indicates that network-wide solutions should be considered to reduce concentrations of NO₂ within the AQMAs.

Summary of previous Review and Assessments

As described in Section 0, two AQMAs have been declared by RBC, one at Bacup Road, Rawtenstall and another at Manchester Road, Haslingden (Figures 1 and 2). Both have been declared on the basis of measured exceedances (or concentrations within 10%) of the annual mean objective for NO₂. The timeline throughout the Review and Assessment process in the lead-up to the requirement for an AQAP is set out below, beginning with Round 2.

Round 2

In 2003 and 2006, RBC undertook an Updating and Screening Assessment (USA) as part of the process of continually assessing local air quality. The 2003 USA indicated that the objectives for all seven pollutants regulated by the Air Quality Regulations 2000 and the Air Quality (England) Amendment Regulations 2002 would be met by their target years. The 2004 Progress Report also did not report any exceedances in Rossendale. The Progress Report submitted in 2005 reported an exceedance of the NO₂ annual mean objective in Bacup Road, which was probably due to the redevelopment of Rawtenstall Town Centre. However, the single diffusion tube located in Bacup Road was attached to the Town Hall and therefore did not represent relevant exposure. Defra accepted that there was no requirement for the Council to proceed to a Detailed Assessment.

Round 3

The 2006 USA reported an exceedance of the NO₂ annual mean objective following relocation of the diffusion tube at the Town Hall onto the façade of a residential property at 95 Bacup Road. Initially there was a plan to pedestrianise part of Bacup Road but due to the uncertainty of this plan RBC decided to proceed to a Detailed Assessment for this area. There was a delay in the submission of this Detailed Assessment due to lack of monitoring data in Bacup Road in 2007 and problems with obtaining appropriate traffic and meteorological data.

In 2007 a Progress Report was submitted to Defra but it was not accepted due to a lack of information on monitoring data and new local developments. The Detailed Assessment, which was submitted in April 2009, addressed the commentary points raised in the Progress Report appraisal report and concluded that although the short-term monitoring campaign over the winter 2007-8 had identified a significant risk of the annual mean air quality objective for nitrogen dioxide being exceeded at the western end of Bacup Road, the recent relocation of the bus depot from Bacup Road was likely to substantially reduce emissions in this area. Additional short-term increases in traffic related to the building of a supermarket on the site, and other building work related to the redevelopment of the area, however, meant that concentrations had not yet dropped to anticipated levels. The Council therefore proposed to deploy a further set of diffusion tubes in the Bacup Road area in order to measure nitrogen dioxide concentrations following completion of the Bacup Road redevelopment work.

Round 4

In 2009, RBC undertook an Updating and Screening Assessment (USA) and a Progress Report 2010 as part of the process of continually assessing local air quality. The 2009 Updating and Screening Assessment identified exceedances of the NO₂ annual mean objective in two locations, Site 1 (Bacup Road, Rawtenstall) and Site 8 (Manchester Road, Haslingden). Further monitoring was therefore deployed in these areas to enable a Detailed Assessment to be carried out. Monitoring at Site 5 (Haslingden Sports Centre), Site 6 (Marl Pits Sports Centre), Site 7 (Motorway Bridge, Edenfield) and Site 10 (Grane Road Quarry) were discontinued in April 2009 due to consistently low concentrations of nitrogen dioxide, and the diffusion tubes were relocated to Manchester Road. Further sites were identified as discontinued in the 2010 Progress Report: Site 4 (Burnley Road, Bacup), Site 9 (Bacup Road, Waterfoot), Site 11 (Cuba Industrial Site, Stubbins), Site 12 (Burnley Road East, Reeds Holme) and Site 14 (Ashoka Car Park, Market Street, Whitworth) were also discontinued due to consistently low concentrations of NO₂ in recent years. These diffusion tubes were redeployed around Manchester Road and Bacup Road in April 2010.

The 2010 Progress Report also identified potential exceedances of the NO₂ annual mean objective based on short-term monitoring data from the newly deployed sites in Manchester Road, Haslingden (Sites 5, 6 and 7) and at Bacup Road, Rawtenstall (Sites 1, 15 and 16), requiring RBC to proceed to a Detailed Assessment for those areas.

A Detailed Assessment was carried out for Bacup Road, Rawtenstall in 2009 based on 2007/8 diffusion tube monitoring. Three sites (Sites 1, 10 and 12) indicated exceedances of the annual mean objective in that report, though Site 1 was not considered to be

representative of relevant exposure for this objective. Automatic traffic count data was deemed to be unrepresentative due to the closure of the bus depot in September 2008, so dispersion modelling was not undertaken. In light of the ongoing development underway in the vicinity of Bacup Road, the conclusion of the 2009 Detailed Assessment was that further monitoring was required to confirm whether an AQMA should be declared. The 2010 Progress Report also identified potential exceedances of the nitrogen dioxide annual mean objective based on short-term monitoring data from the sites in Manchester Road, Haslingden (Sites 5, 6 and 7) and at Bacup Road, Rawtenstall (Sites 1, 15 and 16), requiring RBC to proceed to a Detailed Assessment for those areas.

Action Planning – What needs to be achieved?

Average annual mean concentrations of NO₂ at Bacup Road in 2014 were measured as 39 µg/m³ at site 15, being the worst-case location in this AQMA. Source apportionment indicated that the primary contributors to NO₂ at this site are from Light Duty Vehicles (LDVs) (31%) and Heavy Duty Vehicles (HDVs) (33%). Therefore, actions within the AQAP need to focus on both a reduction in LDVs and HDVs, with particular attention to HGV, buses, coaches and diesel cars. The primary junctions at Bacup Road and Bocholt Way are shown in Appendix A, Figure 3.

Average annual mean concentrations of NO₂ Manchester Road, sampled at nearby receptors in 2014 were measured as 34 µg/m³. Best practice requires that concentrations are consistently at least 10% below the threshold of 40 µg/m³ for a number of years before the revocation of an AQMA on the basis of reduced emissions is considered. The primary contribution to NO₂ at Manchester Road is from LDVs (32%) whilst HDVs contributed 16%. Therefore, the AQAP should primarily focus on the reduction in LDVs at Manchester Road.

RELATED PLANS, POLICIES & STRATEGIES

Background

Lancashire County Council, of which RBC is within, has produced a range of interlocking Policies and Strategies, the air quality content of which are considered below.

East Lancashire Strategic Cycle Network

The East Lancashire Strategic Cycle Network was proposed in the East Lancashire highways and transport plan which was approved in 2014. The plan outlines an aim of building between 23 km and 29 km of improved cycle routes within East Lancashire with the focus on connecting existing networks to one another. The goals of this plan are synergistic with that of improving air quality, in particular the proposed Valley of Stone cycle route between Rawtenstall and Whitworth (via Bacup) could help reduce commuter numbers and thus improve air quality in and around Rawtenstall and Bacup.

The East Lancashire Highways and Transport Plan

The aim of the East Lancashire Highways and Transport Plan, published in 2014, is to support the development of East Lancashire's highways and transport networks by identifying and removing barriers to travel. In particular, aims that are relevant to this AQAP are:

- Sustainable travel to become the choice wherever possible, even in rural areas;
- Active travel to be encouraged and supported, making walking and cycling safe and easy choices for local journeys.

Other considerations

Redevelopment of Rawtenstall Town Centre

As part of the redevelopment of Rawtenstall Town Centre a public consultation was held between the 3rd and 30th of October 2015. This development has the potential to significantly affect pollution levels within the AQMA and as such its impact on air pollution should be at the forefront of considerations. The redevelopment of the bus station on Bacup Road is underway.

Redesign of traffic light systems within Rawtenstall

Lancashire County Council has re-designed the traffic light system and layout at the A682 St Mary's Way, Bacup Road junction and at the Rawtenstall spur and Bocholt Way junction. An explanation on the likely benefits to vehicle flow out of St Mary's Way on to the Rawtenstall

spur has been provided, however the impact of these changes on traffic flow and volume within the AQMA have not been provided and thus the impact on air quality within the AQMA is unknown.

ACTIONS TO REDUCE EMISSIONS

Methodology

As noted above, annual mean concentrations of NO₂ within each AQMA have fluctuated over the last five years. Although the most recent year of monitoring data (2014) indicates that there were no exceedances, annual fluctuations in NO₂ concentrations (due *inter alia* to meteorological factors) together with proposed developments in the vicinity of the AQMAs and forecast national growth in traffic flow, suggest that these concentrations are unlikely to remain consistently below the air quality objectives without intervention. Therefore, possible options for the further reduction of NO₂ are considered below.

This Section was developed based on the principles put forward in the guidance published by the National Society for Clean Air and Environmental Protection UK (2001), using the following steps and associated timelines:

1. Identification of suitable options – this was undertaken through a workshop with AQMRC, UWE, officers of RBC and other stakeholders on 13th May 2015.
2. A consultation exercise with stakeholders was undertaken and responses received in respect of suggested options.
3. An evaluation of the options with regard to air quality impact, cost, feasibility and timescales was undertaken by AQMRC, UWE, in consultation with RBC.
4. Prioritisation of the options was undertaken by AQMRC, UWE, in consultation with RBC.

The Action Plan, in line with current legislation and guidance, will be subject to further consultation, outlined below. Once the plan is implemented, annual progress reports will be required.

Identification of options – Bacup Road, Rawtenstall

The AQMA declared for Bacup Road is as a result of traffic and congestion. However, an alternative route is available for vehicles which would divert traffic away from the receptors and reduce the potential for future exceedances in the area. Therefore the principles of the chosen options are twofold; a) facilitating access to Bocholt Way, and b) restricting or discouraging access to Bacup Road.

Facilitating access to Bocholt Way

Currently the location of the Fire Station on the A682 occupies land adjacent to the Bocholt Way junction, hampering the junction layout. It is therefore proposed that a reconfiguration of the junction involving either re-siting the Fire Station to the old college site nearby or re-commissioning some of the unused plot (possibly including re-siting the training tower) would enable easier access to Bocholt Way and relieve traffic flow on Bacup Road, particularly HDVs. Either additionally or alternatively, lengthening the timing of the traffic lights onto Bocholt Way and/or reducing the timing of the lights onto Bacup Road should encourage traffic to use Bocholt Way rather than Bacup Road. This would be a relatively easy option to test for a short period, however it is recommended that any implementation of this measure is accompanied with signage advising road users of the re-prioritisation (and possibly to ignore 'sat nav' instructions to use Bacup Road).

Restricting access to Bacup Road

Without introducing technological fixes, an important means of reducing vehicle flow, congestion and therefore emissions would be to discourage the use of Bacup Road. Options presented during the first round of consultation are presented below:

- 1. Make Bacup Road no-through access west of Kay Street:** This would help reduce vehicle numbers and therefore improve flow and reduce congestion.
- 2. Road signage amended to reprioritise use of Bocholt Way and deprioritise Bacup Road:** This option would divert traffic flow from Bacup Road, thus potentially reducing air pollution without significantly inconveniencing motorists.
- 3. Introduce traffic lights to Bacup Road** to (a) discourage use, and (b) restrict access to single lane/one-way only.
- 4. Introduce bollards to Bacup Road to restrict access to residents and access only:** Through introducing bollards to Bacup Road and providing access to local residents and deliveries only, traffic flow would be significantly reduced and consequently it is very likely that air pollution would be too.
- 5. Restrict access to Bacup Road at peak times using ANPR:** Using Automatic Number-Plate Recognition software access to Bacup Road could be reduced by only allowing entry to residents and delivery vehicles during peak times.
- 6. Introduce road pricing to Bacup Road using ANPR (a) excluding residents and access only vehicles from pricing or (b) by charging only through traffic based on duration of residence time:** This action would charge vehicles (other than those owned by residents and those needed for essential access) based on their use of Bacup Road and will hopefully encourage vehicles to travel along Bocholt Way instead.

7. **Introduce speed bumps to Bacup Road** to discourage use.
8. **Move the taxi rank on Bacup Road:** Moving the taxi rank on Bacup Road to an area outside the AQMA may reduce vehicle movements within it (i.e. taxis would not need to drive in and then back out of the AQMA to collect customers).
9. **Limit Council fleet use of Bacup Road for non-essential access, e.g. refuse lorries except when servicing properties on Bacup Road:** Limiting the Council fleet from using Bacup Road for non-essential access would set a precedent that the community could follow.
10. **Oppose/limit proposed car parking spaces for old bus station site:** By limiting the car parking spaces sufficiently it would potentially reduce the number of vehicles entering Bacup Road and would encourage people to find other means of travel, including public transport, walking and cycling.
11. **No through access to HGVs / LDVs unless deliveries.**

Additional measures

Further measures to reduce NO₂ concentrations more generally in the area include:

12. **Use taxi-licensing to restrict diesel and encourage plugin-EV/hybrid taxi vehicles:** Restricting the use of diesel taxis within the AQMA and encouraging the use of EV/Hybrid vehicles would contribute to a reduction in air polluting sources within the AQMA.
13. **Introduce EV charging points and encourage local superstores to install charging points in their car parks:** Although not an immediately beneficial approach for reducing air pollution within the AQMA, the introduction of EV charging points could help raise awareness and encourage switches to cleaner and less polluting vehicles.
14. **Replace Rossobus fleet with cleaner buses, or retrofit, re-engine existing vehicles:** Replacing or retrofitting Rossobuses with cleaner engines would result in fewer emissions per vehicle, not only within the AQMAs but Borough-wide.
15. **Promote the Community Line train service to provide integrated and enhanced public transport:** Promoting the Community Line train service may encourage people to use alternative transport, thus reducing vehicles from the road and reducing congestion.
16. **Join ECOStars scheme (<http://www.ecostars-uk.com/>) to encourage companies and organisations to operate cleaner fleets.**

Identification of options – Manchester Road

Although traffic count data and dispersion modelling have indicated that diesel cars and rigid and articulated HGVs are the main sources of emissions in Manchester Road, further information is required to understand why vehicles are using this route and the cause of any congestion. Possible causes for elevated concentrations of nitrogen dioxide at this location may be due to vehicles accessing the Tesco store and the local schools to the south of Manchester Road, as there is a lack of alternative routes for traffic from the north. In addition, Manchester Road is on an incline, which may be contributing to emissions of vehicles travelling uphill. In 2014, the two worst case monitoring sites were both below the objective at $34 \mu\text{g}/\text{m}^3$, however concentrations were at, or within 10% of, the objective in the previous year and as such the AQMA should be retained.

There is a new phased residential development close to Manchester Road, for which additional monitoring has been introduced to assess any additional impact of vehicles arising. Highways England advised that they will use a TRANSYT model when modelling the roundabout to the north of Manchester Road prior to the introduction of signalisation at Rising Bridge. Additionally, a microsimulation model of the A56 trunk road network between Grange Road in the north and the A682 / A56 junction in the south is to be undertaken, which will incorporate the two roundabouts adjacent to Tesco on Manchester Road and the A46. Highways England has indicated that they would be happy to share this information with RBC to assist with the implementation of the AQAP (Appendix III).

In order to better understand traffic behaviour in Manchester Road, the following recommendations were made:

1. Use Google Maps real-time traffic displays to ascertain when congestion is occurring.
2. Visit the site at key times to visually inspect the nature of traffic movements.
3. Use TransDev real-time bus data to identify bus residence time in Manchester Road to determine whether there are delays.
4. Survey local schools to determine whether vehicles dropping off and collecting schoolchildren are accessing Manchester Road and their origins.
5. Survey Tesco customers/deliveries to determine whether these vehicles are accessing Manchester Road and their origins.
6. Survey Winfields Outdoors Ltd to determine whether these vehicles are accessing Manchester Road and their origins.
7. Use of ANPR outside the immediate area as a means to determine the origin of through traffic.

Suggestions for possible measures to further reduce air pollution at Manchester Road included:

1. **Access-only road signs at entry points to Manchester Road.**
2. **Signal changes to the roundabout to the south of Manchester Road to discourage access.**
3. **Apply Public Safety Protection Orders to restrict idling on Manchester Road.**
4. **Create bus stop pull-ins to reduce congestion** (although it was recognised that pull-ins can lead to bus delays reducing the reliability of the service).
5. **Encourage School Travel Plans:** This would facilitate other modes of transport for schoolchildren to be considered.
6. **No through road signage at road entry points to Haslingden.**

Evaluating options

Following the NSCA guidance the approach to evaluating the proposed options considered four specific criteria:

- Air quality impact as a result of the option being implemented;
- Cost effectiveness of measure;
- Non-air quality impacts of option;
- Perceptions and practicability of specific option.

Without the implementation of detailed dispersion modelling, it is not possible to apply quantitative values to each criterion or to every measure. Instead, qualitative descriptors have been used to assess each measure against the criteria in order to filter out a short-list for prioritisation.

(a) Air Quality Impact

In the case of the impact on local air quality, an evaluation will firstly be made as to whether the effect of implementing each scheme has a positive impact (+), negative impact (-) or no discernible impact (+/-) on four key air quality considerations within the AQMA. These are as follows:

- Effect on vehicle flow (i.e. is traffic flow improved or is it likely to be more congested)
- Effect on exposure (i.e. are receptors likely to still be exposed)
- Effect of vehicle km within the AQMA (a positive impact would be a reduction in vehicle km)
- Effect on emissions per vehicle km (a positive effect would be a reduction in emissions per vehicle km)

In addition, the direct impact on air quality from each scheme is assessed as having an impact on air quality of low, medium or high. A low impact may be assigned where the

predicted impact from an option is judged to be negligible (or imperceptible) in relation to uncertainties in monitoring, modelling or impacts due to the weather. A medium impact will be where the air quality impact is judged to be perceptible even considering the uncertainties in monitoring, modelling or meteorology. A high impact is judged to be significant with impacts clearly shown by modelling or monitoring.

A complication is that air quality benefits of a scheme may not be its primary objective; there may be driving factors such as road safety or regeneration. In such cases, air quality benefits are “incidental” and should not be weighed against the whole cost. Indeed, the reality is that there are schemes which may have negative air quality impacts, at least in the shorter term. Where there are overwhelming social, economic or other gains, this will have to be accepted. The key aim within the Action Plan should be to address tensions between air quality and other indicators explicitly and come to a coherent position.

(b) Cost

(c) With respect to the cost of implementing an option, a detailed evaluation of the cost and benefit is not possible based on available evidence, and instead a judgement will be made as to whether options present low, medium or high cost options to both the local authority and to other organisations. Low cost is taken to be <£500,000, medium cost is £500,000 - £3 million and high cost is >£3 million. In terms of refining the shortlisted options both air quality impact and cost can be combined into a single matrix, as set out in Table 1, below.

Table 1: Air Quality impact vs Cost to local authority

Air Quality Impact →	LOW	MEDIUM	HIGH
Cost ↓			
LOW (<£500,000)	Possibly recommend	Recommend	Recommend
MEDIUM (£500,000 - £3 million)	Don't recommend	Possibly recommend	Recommend
HIGH (> £3 million)	Don't recommend	Don't recommend	Possibly recommend

(d) Non-air quality impacts

As part the AQAP development, local authorities must consider the wider impacts of each potential option. These include an option's ability to affect other environmental criteria (noise, visual amenity and climate change obligations) and non-environmental parameters (social and economic issues). Qualitative, rather than quantitative descriptors are provided for each. Those considered in this AQAP are set out below:

- Wider impacts (i.e. non-air quality impacts)
 - Socio-economic impact (i.e. are there positive socio-economic or negative socio-economic outcomes from its implementation)
 - Climate Change (i.e. are the options likely to positively or negatively affect the UKs Climate Change obligations)
 - Noise (i.e. are the proposed options likely to increase or decrease the amount of noise in the area)
- Timescale (i.e. will the option be implementable in the short-, medium-, or long-term)

For those options deemed to have negative non-air quality impacts (irrespective of large theoretical air quality benefits) they can be considered as having low priority, whilst those with positive non-air quality impacts could be considered with high priority.

If certain options have a significant potential for improving air quality, while being of low feasibility, additional actions in the AQAP might be ones directed at investigating and overcoming barriers to progress.

(d) Perceptions and practicability

Finally, consideration will be given to the perceptions and practicability of options. A considered evaluation as to whether an option is likely to be acceptable to key stakeholders will be made. Furthermore, the practicability of implementing each option will be considered. Finally the timescale associated with the full implementation of the option will also be determined. Short term relates to those options which can be implemented within the next 1-2 years, medium term for those achievable within the next 3-5 years and long term options are those which are likely to take more than 6 years to achieve.

Options: Bacup Road

The short list of options was derived from the original long list by firstly filtering the data based on the perceived benefits to air quality. Those options with a perceived Low impact on improving air quality were rejected. A second filter was introduced to determine the feasibility of the options based on practicability, social perceptions and non-air quality impacts and finally a third filter was introduced to assess cost vs perceived improvement in air quality (as

set out above in Table 1 of supporting documents). Each step can be found in Appendix Table 2– Table 4 (see supporting documents. As shown in Table 2 one option was considered to have a High impact on air quality and seven were deemed to have a Medium impact. A further seven were deemed to have a Low impact.

Introducing bollards to Bacup Road to limit non-resident owned vehicles or delivery vehicles was considered to have the greatest potential for improving air quality within the AQMA. However the perceived social and economic impacts of this option were considered to be negative and as such unlikely to be implemented.

Four of the initial seven options that were considered to have a Medium impact on air quality were also considered as having either a positive effect or no change on social, environmental and economic considerations. Finally a filter based on cost vs perceived improvement in air quality (as set out above in Table 1) was applied. It is recommended that RBC should take forward these options, as set out in more detail below, for the Bacup Road AQMA as soon as possible.

Option 1: Limit Council fleet use of Bacup Road for non-essential access, e.g. refuse lorries, except when servicing properties on Bacup Road

Limiting Council fleet use of Bacup Road for non-emergency access is thought to have a positive impact on vehicle flow within the AQMA and on vehicle km and thus contribute positively to the reduction in air pollution. It is not likely to contribute to a decrease in receptor exposure or on emissions per vehicle km. Non-air quality impacts include a positive contribution to the reduction in CO₂ and black carbon through reduced vehicle use and a reduction in noise pollution. There are no socio-economic effects expected as a result of this option, however there may be positive social outcomes as local communities see the local authority taking a lead in tackling air pollution. The cost of limiting access for Council fleets is not thought to be significant to either the Council or to other stakeholders. This option is considered very practical and rapidly implementable and in comparing air quality improvement and cost, this option is recommended.

Assigned to: Lancashire County Council Highways Department

Timescale: 1-2 years

Option 2: No through access to HGVs or LDVs unless deliveries

This option is considered as having a Medium impact on air pollution considering that the reduction in the number of HDVs is a key priority. Furthermore, it is expected to result in a reduction in vehicle km within the AQMA and consequently a likely improvement in vehicle flow. A reduction in HDVs through the AQMA is also likely to improve non-air quality impacts, including noise pollution. No negative socio-economic effects are likely to occur as a result of

this option's implementation. For this option to be implemented signage advising HDVs and LDVs of the diversion would need to be installed and access monitored and enforced (in the short-term). Despite this, it is expected to be practicable and the timescale required to implement it are considered to be short. The cost associated with implementing this option to both the local authority and others is thought to be Low and considering the likely improvement in air quality this option is recommended.

Assigned to: Lancashire County Council Highways Department

Timescale: 1-2 years

Option 3: Road signage amended to reprioritise use of Bocholt way and deprioritise Bacup Road.

This option is considered to have a positive impact on air quality by diverting traffic from Bacup Road and on to Bocholt Way. This option also includes the removal and relocation of a misplaced sign at number 9 Bank Street, Rawtenstall, to its planned location outside number 18, Bury Road, Rawtenstall. In doing so, vehicle km within the AQMA will be reduced and vehicle flow would then likely improve. Several positive effects on non-air quality impacts are considered likely, including a reduction in noise pollution. This option is considered to be very practicable and straightforward to implement by Lancashire County Council Highways Department. The cost to the local authority is thought to be Low, with no socio-economic impact likely, as a result, this option is recommended.

Assigned to: Lancashire County Council Highways Department

Timescale: 1-2 years

Options: Manchester Road

As with the determination of the short list for Bacup Road, here options were filtered on the basis of impact on air quality and those deemed to have a low impact were filtered out. A second filter was introduced to determine the feasibility of the options based on practicability, timescale and other effects and finally a filter based on cost was applied.

Manchester Road's air pollution challenges lie in identifying the reasons why HGVs frequent the AQMA and why this area is prone to congestion and increased levels of air pollution. Options to further understand the causes of air pollution at Manchester Road are set out in Section 0, above, whilst options considered as appropriate for reducing air pollution within the AQMA are set out below.

Option 1: Encourage School Travel Plans to encourage alternative modes

This option is likely to have a positive impact on vehicle flow by encouraging less car use and more bus use and active travel including walking and cycling during peak traffic flows, in the morning and afternoon. It is also likely to have a positive impact on vehicle km within the

AQMA, again through diverting travel away from the car and towards other modes. By reducing the number of cars traveling along Manchester Road, this option is considered to have a Medium impact on air quality. This option is not considered to have any significant impact on receptor exposure or on emissions per vehicle km. The practicability of this option is deemed to be High and the social benefits of teaching children about the positive aspects of active travel (e.g. health and wellbeing) were also considered to be High. It is thought that this option would not impact the local economy and as such its socio-economic impact is considered minimal. Through encouraging school travel plans (e.g. Haslingden High School) and staff travel plans for large retailers (e.g. Tesco) fewer vehicles are expected to use the roads. This is also considered to be beneficial for a number of non-air quality impacts, including climate change impacts where the removal of sources of black carbon (a known climate forcer) and noise pollution, of which traffic is a significant contributor. The cost to the local authority is thought to be minimal and, considering the likely improvement in air quality, this option is recommended. The cost to the local authority and to others is likely to be Low, on the basis that the main investment would be in person-hours during the set-up of the schemes and dialogue with local schools and Tesco. Finally, it is expected that this option would be quick to implement and therefore an attractive option to pursue.

Assigned to: RBC

Timescale: 1-2 years

Option 2: No through road signage at road entry points to Haslingden

This option is considered as having a positive impact on vehicle flow and a positive impact on reducing vehicle km within the AQMA, particularly if targeted at HDVs. It is not thought that this option will reduce receptor exposure or reduce the emissions per vehicle mile. The resultant decrease in vehicle numbers is considered to have a Medium impact on air quality.

There are not considered to be any negative social impacts of implementing this option. Considering that this option would require the manufacture and instalment of road signs it is considered to be a practical option which could be implemented fairly quickly. The cost to the Council is considered to be Low, and with a likely improvement in air quality this option is recommended.

Assigned to: Lancashire County Council Highways Department

Timescale: 1-2 years

Option 3: Apply Public Spaces Protection Orders to restrict idling on Manchester Road

Applying public spaces orders to reduce idling is thought to have many positive effects on air quality. Firstly, the emissions per vehicle km will be reduced as emissions from idling are cut. Secondly, it is thought that vehicle km within the AQMA will reduce as a result of motorists altering travel plans to avoid such areas, which in turn would contribute to improved vehicle flow within the AQMA. The cost of implementing this option is considered to be Medium initially, however money could be recouped through the issuing of fixed penalty notices if cars are in breach of the protection orders. This option is considered to have a positive effect on non-air quality impacts, particularly on noise pollution which will likely decrease significantly as a result of no-idling areas. Additionally, reducing emissions of black carbon and CO₂ is also likely to have beneficial climate change impacts. It is not thought that this option will have negative socio-economic impacts, however, it may face objections from stakeholders, although these have not been aired in consultation so far. This option is considered as having a Medium practicability, owing to the need for hiring, training and enforcing the order, however it is likely to be possible to achieve within two years and, as such, the timescales are considered to be Low. Considering that this option is of Medium cost and Medium air quality improvement, this option is categorised as 'possibly recommend'.

Assigned to: Lancashire County Council Highways Department

Timescale: 1-2 years

FINANCING

The ability and opportunity for implementing this AQAP depends primarily upon securing adequate funding and sufficient revenue resources to fund the staff required to deliver the programme of measures. For the purpose of this AQAP, the costs involved have been estimated broadly, and banded as being Low, Medium and High. The funding stream required to finance each option is set out in Appendix A Table 8 and 9 (can be found in the supporting documents to this action plan)

Where funding within departments is limited, other potential sources of funding could be applied for. These include:

Developer contributions – through section 106 agreements and similar planning obligations, developers can contribute to improvements which are relevant for this AQAP.

Heritage Lottery Fund – providing that there is a positive influence on heritage, people and communities, funding may be available through this route.

UK Government – a number of funding sources are available through the government, including funding for low emissions schemes, amongst others. Of note, Rossendale Borough Council have been awarded £485,600 for the retrofitting of 38 buses as part of the Department for Transport's Clean Bus Technology Fund, 2015. Following the successful bid, Rossendale Borough Council undertook an official procurement process and awarded a contract to Eminox Ltd, with the objective of completing all 38 conversion by the end of summer, 2016.

Europe – several air quality and transport related research projects are currently being funded through European grants.

CONSULTATION

Consultation in the form of active participation and information provision and dissemination will be vital for the effective implementation of options identified as part of the AQAP. Any individual option or package of options, to improve local air quality will require the backing and support of stakeholders (i.e. businesses and members of the public). As such, stakeholders will need to take 'ownership' of the action planning process and feel part of the overall decision-making process.

An initial consultation was held on 13th May in which the following stakeholders were consulted on options set out in the long-lists:

- Martin Porter: Highways Development control (Lancashire County Council)
- Chris Anslow: Strategic Highways Officer (Lancashire County Council)
- Neil Stevens: Highways (Lancashire County Council)
- Adrian Smith: Forward Planning Officer (Rossendale Borough Council)
- Tracy Brzozowski: Licensing Manager (Rossendale Borough Council)
- Kayt Horsley: Public Health (Lancashire County Council)
- John Threlfall: Transdev Bus
- Brendan O'Reilly: Rossobus
- David Presto: Regeneration (Rossendale Borough Council)
- David Wild: Highways England.

Of those initially consulted, only two responses were received. These responses from both Martin Porter of Lancashire County Council's Highways Development Control and David Wild of Highways England Appendix B (i and ii) (can be found in the supporting documents to this action plan)

To progress further with the action planning process, RBC is required to consult more widely on the shortlist of options for improving air quality within the AQAP. Further consultation on this document was undertaken between October and December 2015 and two responses were received, one from David Wild of Highways England and another from Adrian Smith the Forward Planning Officer at RBC. These responses can be found in Appendix B (iii and iv) (can be found in the supporting documents to this action plan)

IMPLEMENTATION AND MONITORING

It is important that in finalising the AQAP, the effectiveness of actions is monitored as they are implemented. For example,

- Does the AQAP framework provide the necessary reduction in air pollution?
- How do the public and community at large perceive the AQAP?
- Is it cost-effective?
- What are the wider, non-air quality impacts and overall community impacts now that measures are being implemented?

The main target of the AQAP is to reduce air pollution in the AQMA on Bacup Road and to identify the sources of pollution on Manchester Road. However, in the shorter-term this may be difficult to judge (mainly due to fluctuations in concentrations due to other factors such as local meteorology). Other indicators, including traffic flow, public transport use and modal share of journeys can also be used. In order to identify the air quality impact from these measures it is recommended that further emissions/traffic modelling be undertaken.

Air quality monitoring should continue at and around both AQMAs and only when there is evidence that concentrations have dropped below $36 \mu\text{g m}^{-3}$ over a period of 24 months, should the withdrawal or relocation of monitoring be considered.

This AQAP has been drawn up with the best available evidence and it is acknowledged that as new policies and opportunities arise, additional measures may become available. It is therefore recommended that this AQAP is continuously reviewed and updated as appropriate.

