AIR QUALITY ACTION PLAN 2015-2020

Air Quality Strategy: Technical Document 1

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

Version 1: October 2015

Local Authority	East Staffordshire Borough Council
Officer	Craig Morris
Address	East Staffordshire Borough Council, The Maltsters, Wetmore Road, Burton upon Trent, Staffordshire, DE14 1LS
Telephone	01283 508848
e-mail	craig.morris@eaststaffsbc.gov.uk
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List of Abbreviations

AQMA- Air Quality Management Area

AQAP – Air Quality Action Plan

BUATMS – Burton Urban Area Transport Management Study

BVNQP - Burton Voluntary Quality Network Partnership

CAZ – Clean Air Zone

CIL – Community Infrastructure Levy

Defra – Department for Environment, Food & Rural Affairs

EC – European Commission

EPUK- Environmental Protection UK

EU – European Union

EV – Electric Vehicle

HECA – Home Energy Conservation Act

HGV- Heavy goods vehicles

LAQM- Local Air Quality Management

LEP – Local Enterprise Partnership

LES – Low Emission Strategy

LEZ – Low Emission Zone

LTP – Local Transport Plan

LTP3 – Third Local Transport Plan

NHS – National Health Service

NPPF- National Planning Policy Framework

NSCA – National Society for Clean Air

OLEV - Office for Low Emission Vehicles

PG09 – Policy Guidance Note 2009

PHE – Public Health England

RIS – Road Investment Strategy

RTPI – Real Time Bus Passenger Information

TG09- Technical Guidance Note 2009

TTR – Transport Travel & Research Ltd

WHO – World Health Organisation

Executive Summary

This is East Staffordshire Borough Council's ("the Council") second Air Quality Action Plan (AQAP) which replaces the original plan adopted in 2009 for breaches of nitrogen dioxide objectives within the Council's two Air Quality Management Areas (AQMA's). This AQAP (Technical Document 1) contributes to the Local Authority's wider Air Quality Strategy (PDF file), which sets out the overarching framework through which air quality is managed within the borough.

It is a statutory requirement to have an AQAP to achieve air quality objectives. Following adoption of the 2009 AQAP, there have been improvements in air quality, but breaches of the nitrogen dioxide objective remain in some locations within the AQMA's, hence the need to adopt a new plan.

The bulk of the measures in this AQAP comprise strategic transport measures that will be delivered by the County Council through the Integrated Transport Strategy, supplemented with an Eco-Stars Recognition Scheme and a number of policy based measures. One of the main policy measures is an Air Quality Policy for Development Control (PDF File) that forms Technical Document 2 to the wider Air Quality Strategy. Other measures include feasibility studies for S.106 funding for offsetting the negative impacts of development on air quality, the feasibility of electric and hybrid plug-in vehicle infrastructure and upgrading the borough's bus fleet to low or zero emission vehicles. A number of 'softer' measures are also proposed to encourage sustainable travel modes and improve awareness of the impacts of poor air quality.

Individually AQAP measures may only have a small affect, but when considered as a whole package, together with national measures, such as improvements in vehicle technology, they will work towards meeting air quality objectives over the longer term.

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1 Introduction

1.1 The Air Quality Action Plan

In 2007 the Council designated two AQMAs in Burton Upon Trent, due to breaches of the annual nitrogen dioxide objective. In accordance with its statutory duties under the Environment Act 1995, the Council produced an AQAP in 2009 which identified measures to manage air quality in the borough in pursuit of achieving the required air quality objectives.

Following the implementation of the AQAP there have been some improvements in air quality, however, breaches of the nitrogen dioxide objective remain in some locations within the AQMA's.

This document therefore replaces the 2009 AQAP and identifies a number of measures to be implemented over the next five years that will work towards having further positive impacts on air quality. This AQAP is the Technical Document 1 to the Air Quality Strategy (PDF File), which sets out the overarching framework through which air quality is managed within the borough. The primary aim of the Strategy is;-

> ***"To continue East Staffordshire Borough Council's commitment to the effective management of local air quality, working towards the control and reduction of the detrimental impacts that poor air quality can have on human health and the environment."***

The Air Quality Strategy also sets out a number of objectives and outlines the mechanisms for how they will be delivered, which this AQAP contributes to.

This AQAP also supports one of the priorities in the Council's Corporate Plan 2015-19, ***"protecting and strengthening communities – love where you live".***

1.2 Borough Profile

The borough of East Staffordshire occupies a strategic position on the edge of the West Midlands and shares borders with South Derbyshire and Derbyshire Dales in the East Midlands.

The borough covers an area of approximately 150 square miles with an estimated population of 114,922 according to 2013 Office of National Statistics mid-year data. The two main towns are Burton upon Trent and Uttoxeter. Almost three quarters (73%) of the population of the borough reside in Burton upon Trent and Uttoxeter. However, these two towns form just 12% of the total land area of the borough.

Burton upon Trent is the principal town where the bulk of employment for the borough is provided and is a sub-regional centre serving the needs of its hinterland. Meanwhile, Uttoxeter is a small traditional market town with a sphere of influence extending into Derbyshire Dales and Staffordshire Moorlands.

There are no motorways in the borough although there are two major trunk routes, namely:

- A38 between Birmingham and Derby
- A50 linking the M1 near Nottingham and the M6 at Stoke on Trent

The main commuter routes into Burton from Leicestershire, Warwickshire, Derbyshire and other parts of Staffordshire include;

- A511 linking the A50 to the north and the M1 near Coalville, Leciestershire
- A444 traversing the M42 and Nuneaton in North Warwickshire

A map showing the extent of the borough is shown in Figure 1.1 below.

Figure 1.1: Map of East Staffordshire Borough.

1.3 Legal Background

1.3.1 EU, NAQS & LAQM Framework

Action to manage and improve air quality is largely driven by over-arching EU legislation. As a Member of the EU, the UK must achieve the requirements under European legislation, namely Directive 2008/50/EC on Ambient Air Quality for Europe, which consolidates earlier European Directives into one single Directive except for the Fourth Daughter Directive (2004/107/EC) which is under the Air Quality Framework Directive (1996/62/EC)[1].

Directive 2008/50/EC sets legally binding EU Limit Values for air quality pollutants that must be met in each member state, for which the UK is divided into 43 zones[2]. All member states, including the UK were required to produce National Plans setting out how the UK plans to reduce nitrogen dioxide levels to acceptable levels by 2010, or 2015 at the latest. The Department for the Environment, Food & Rural Affairs (Defra) were required to produce these plans on behalf of the UK government.

Section 80 of the Environment Act 1995 established the National Air Quality Strategy which determines how England, Scotland and Wales will meet European pollutant limits. Health based objectives for key pollutants were set prescribing maximum ambient concentrations that must not be exceeded, by a certain timescale. It is these limits that Local Authorities assess air quality against. Long and short-term objectives are set for each pollutant and are assessed in relation to a representative exposure location (i.e. long-term exposure tends to be considered in relation to residential receptors). Short term objective concentrations are higher than longer term objectives.

Part IV of the Environment Act 1995 also established a local air quality management framework (LAQM), whereby Local Authorities are required to annually review and assess air quality in their areas and report against pollutant objectives set out in the Air Quality Standards Regulations 2010, shown in Table 1.1.

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1. http://ec.europa.eu/environment/air/legis.htm
2. http://uk-air.defra.gov.uk/assets/documents/reports/cat05/1409261329_air_pollution_uk_2013_issue_1.pdf

Table 1.1: Air Quality Objectives included in Regulations for the purpose of LAQM in England. [3]

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 µg/m^3	Running annual mean	31.12.2003
	5.00 µg/m^3	Running annual mean	31.12.2010
1,3-Butadiene	2.25 µg/m^3	Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.5 µg/m^3	Annual mean	31.12.2004
	0.25 µg/m^3	Annual mean	31.12.2008
Nitrogen dioxide	200 µg/m^3 not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 µg/m^3	Annual mean	31.12.2005
Particles (PM_{10}) (gravimetric)	50 µg/m^3, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 µg/m^3	Annual mean	31.12.2004
Sulphur dioxide	350 µg/m^3, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 µg/m^3, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

3. East Staffordshire Borough Council. 2015. Updating & Screening Assessment

Where the prescribed air quality objectives are unlikely to be achieved, leaving the public at risk of exposure to the pollutant, the location must be designated as an AQMA. Once an AQMA has been declared there is a statutory duty, under Section 84 of the Environment Act 1995, for the Local Authority to produce an AQAP in pursuit of meeting the relevant air quality objective(s). The AQAP is the mechanism for improving local air quality and the plan forms the statutory element of the LAQM process[4]. Currently, UK Local Authorities have declared over 700 active AQMA's; more than 670 of these are due to NO_2.

1.3.2 The National Air Quality Plans & Infraction Proceedings

In 2013, only 5 of the UK zones met the EU Limit Value for annual mean nitrogen dioxide concentrations and an additional 7 zones were compliant with the EU Limit within a margin of tolerance due to an agreed time extension. However, the remaining 31 zones had measured or modelled exceedences over the limit and had no time extension. This led to ClientEarth, a UK Charity, taking the UK Government to court. They argued against the UK's stance that air quality measures lay at EU level. The Supreme Court agreed and following referral to the Court of Justice of the EU, the UK Government was ordered to submit new Air Quality Plans to the European Commission (EC) no later than 31st December 2015.[5] The Department for Environment, Food & Rural Affairs (Defra) (i.e. Secretary of State) is in charge of preparing these plans and all Local Authorities were required to submit data to Defra on progress in achieving air quality targets at the end of February 2015.

On the 12th September 2015, Defra launched their National Air Quality Plan consultation that will run to 6th November 2015. It includes a consultation document, the draft UK overview document; draft plans for each zone that is failing to meet the annual mean nitrogen dioxide EU Limit Value and an evidence annex.[6] Defra has used their Pollution Climate Mapping (PCM) model to project future nitrogen dioxide concentrations, which indicates the likely UK compliance dates for each of the UK zones. These projections look at five year intervals (i.e. 2020 and 2025) going forward with a baseline year of 2013. Defra's projections indicate that 35 UK zones will be compliant with nitrogen dioxide limit values by 2020.[7] The West Midlands non-agglomeration zone, which the East Staffordshire Borough falls under is one of the

35 zones that is expected to be compliant by 2020.[8] Meanwhile, the remaining 8 zones are projected to be non-compliant in 2020, which includes for example London, Birmingham, Leeds, Nottingham, Southampton and Derby. It is these zones, where additional emissions based measures will be required to address the particular issues and areas within them that are causing the exceedence. Defra have stressed these cities should consider including access restrictions for certain types of vehicles (e.g. restrictions on diesel vehicles).

A number of Authorities are already considering or have implemented some access controls to tackle air pollution such as low emission zones and incentivising electric vehicles. While such measures reduce the number of polluting vehicles in a specified area, they can create conflict for businesses that operate across a number of cities to make consistent, economic and operational decisions. Defra will therefore establish a framework for Clean Air Zones (CAZ) in 2016 that will amalgamate local air quality actions underpinned with a nationally consistent approach.

One key reason why nitrogen dioxide objectives and EU Limit Values have not been achieved to date in the UK is believed to be due to the failure of the European vehicle emission standards for diesel cars to deliver the expected emission reductions. The exact cause of this disparity is not fully understood, and is still under investigation, but it is thought to be related to the actual on-road performance of diesel road vehicles when compared with test bed calculations based on the Euro standards. Studies suggest that diesel vehicle emissions have not improved for engines up to and including Euro 5 standard.[5]

A further contributing factor is the increase in diesel vehicles on UK roads. This is partly due to motorists being encouraged by the taxation system to buy fuel-efficient diesel vehicles which have a low carbon footprint. The growth nationally in the amount of diesels as a percentage of the UK total number of vehicles has led to a slowdown in the improving UK air quality trend, and in some cases a worsening of pollution levels. Older petrol vehicles (Euro 1-3) have also been found to emit more oxides of nitrogen (NO_x) than previously thought, possibly due to emissions system degradation.[5] It is worth noting here that stricter Euro 6 standards have now just come into operation. The European Commission is also seeking to introduce a new real world driving test procedure, which the UK is pressing for 2017 for new models

and 2018 for all cars. However a decision on the timing of test procedures is still to be made in Europe. Even once introduced, it will take a little while for older vehicles to be replaced by new ones with lower real world oxides of nitrogen emissions and in turn will impact on nitrogen dioxide concentrations.

In addition to the National Air Quality Plans, infraction proceedings were taken by the EU Commission in February 2014 against the UK Government for failing to meet the EU limit Value for annual mean nitrogen dioxide concentrations, which could result in the UK Government being fined. The UK Government can reserve powers under the 2011 Localism Act to pass all or part of the fines on to Local Authorities deemed responsible for breaches of EU law[5].

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4. http://laqm.defra.gov.uk/

5. http://www.parliament.uk/business/publications/research/key-issues-parliament-2015/energy-and-climate/air-quality-in-urban-areas/

6. https://consult.defra.gov.uk/airquality/draft-aq-plans

7. https://consult.defra.gov.uk/airquality/draft-aq-plans/supporting_documents/Draft%20plans%20to%20improve%20air%20quality%20in%20the%20UK%20%20Overview%20document%20September%202015%20final%20version%20folder.pdf

8. http://uk-air.defra.gov.uk/assets/documents/no2-consultation-2015/AQplans_UK0035.pdf

1.4 Air Quality in East Staffordshire

During the third round of review and assessment, the Council passed an Order for the declaration of two AQMAs for nitrogen dioxide from road traffic. The declarations came into effect within three months of the Order being made, in this case May 2007. This was supported by a Further Assessment in 2008, whereby source apportionment identified that road transport accounted for between 94.5 - 99.4% of total oxides of nitrogen and therefore nitrogen dioxide emissions across sixteen modelled receptor locations within the AQMA's. Industrial contributions were therefore very small at all the modelled locations[9]. This led to the first AQAP being drawn up and formally adopted in 2009 to predominantly tackle road traffic related nitrogen dioxide emissions. Maps of the AQMAs are shown in Figure 1.2 and 1.3 respectively.

9. East Staffordshire Borough Council. 2008. Further Assessment

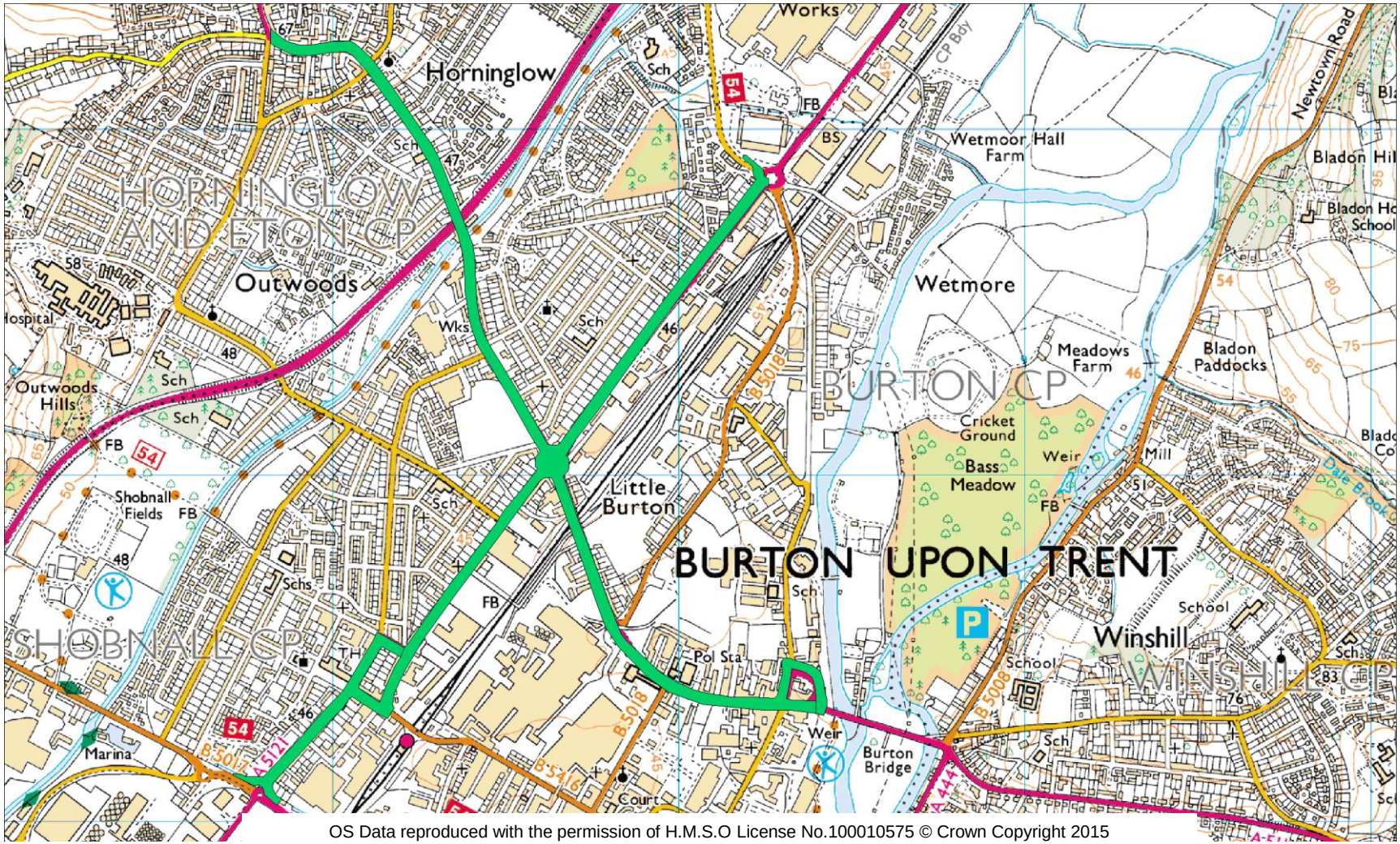

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Figure 1.2: AQMA1. Burton upon Trent - Derby Rd, Derby St, part of Princess Way roundabout, Horninglow St, Horninglow Rd, Bridge St, Wellington St, part of Borough Road, part of Wellington St roundabout, part of Waterloo St and part of Byrkley St (highlighted in green).

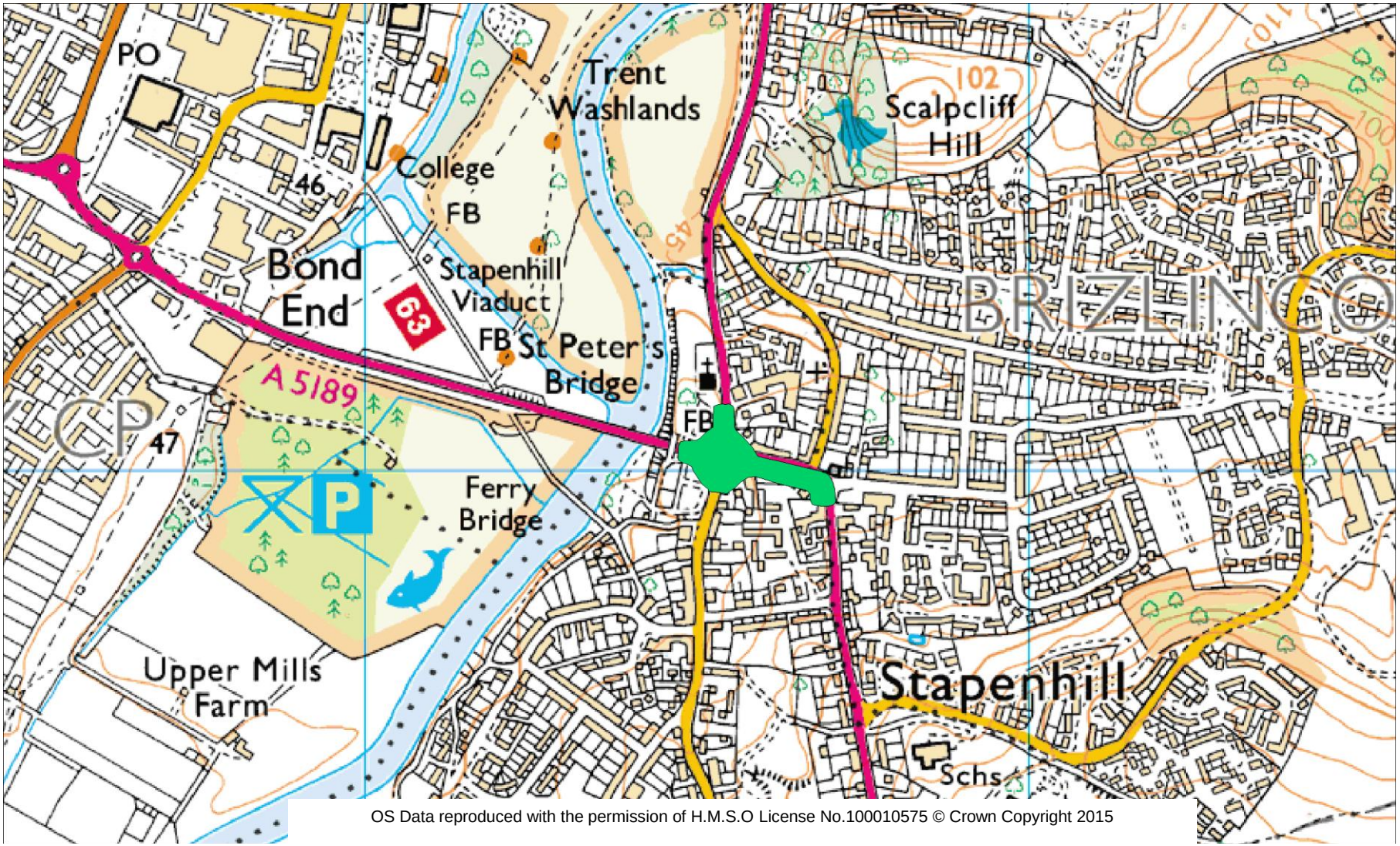

Figure 1.3: AQMA2 – St Peters Bridge roundabout, Stapenhill, Burton upon Trent (highlighted in green).

The Council has historically monitored nitrogen dioxide levels across the borough dating back to 1997. Figures 1.4 and 1.5 show trends in nitrogen dioxide levels averaged out per section of the AQMAs dating back to 2009, when the original AQAP was adopted. Meanwhile Appendix 1a to 1f shows the nitrogen dioxide level broken down to each monitoring location within each AQMA over the past six years.

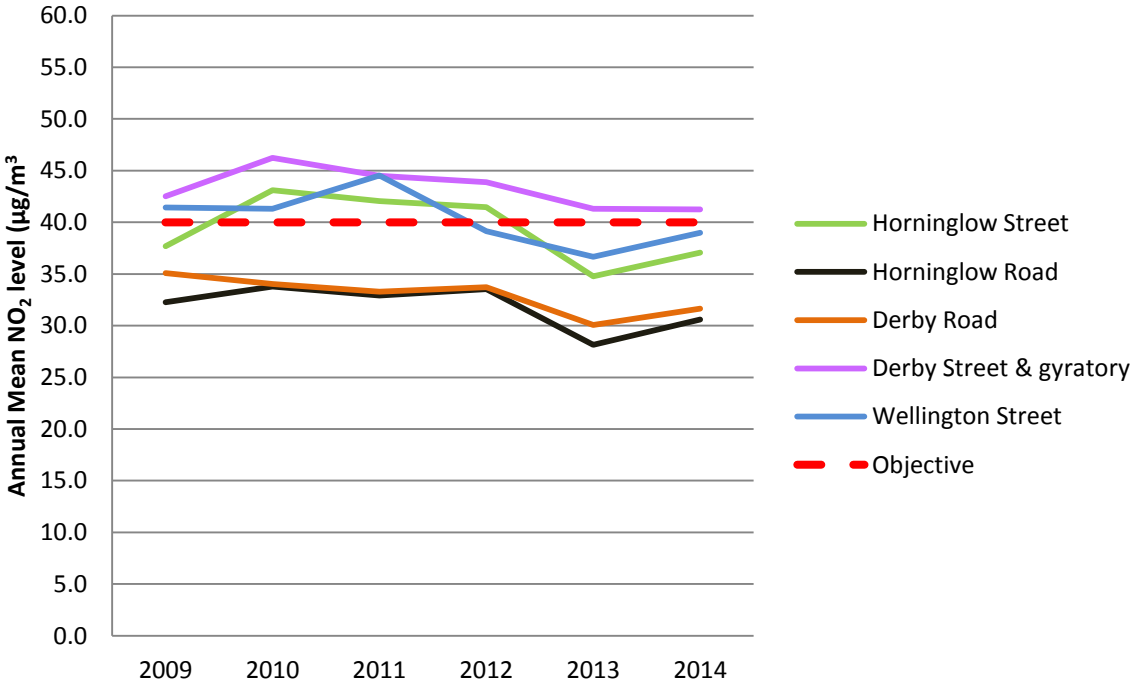

Figure 1.4: NO_2 trend per section of AQMA1: Burton upon Trent for 2009-2014

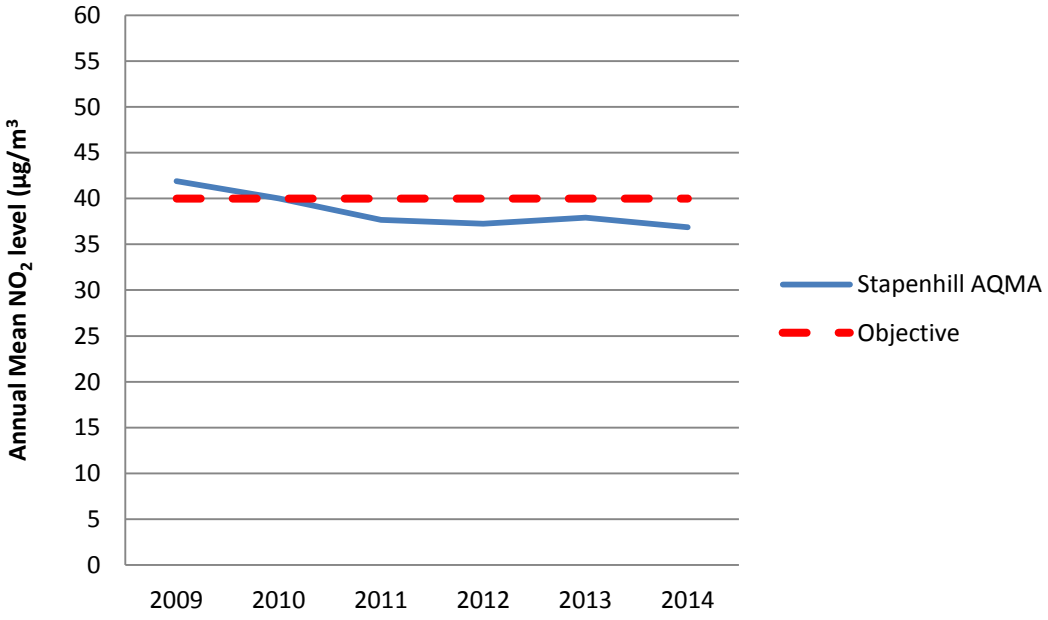

Figure 1.5: NO_2 trend for the smaller AQMA2: Stapenhill for 2009-2014

Figures 1.4 and 1.5 show a gradual downward trend in average nitrogen dioxide level per section of the AQMA's, since the AQAP was adopted in 2009. Spatially, the highest nitrogen dioxide levels have been recorded at sites along the Derby Street including Derby Turn and the Borough Road / Derby Street / Byrkley Street / Waterloo Street gyratory section of the primary AQMA. When averaged out, the Derby Street section was only section still exceeding the annual nitrogen dioxide objective of 40µg/m^3 by 2014 (Figure 1.4). Meanwhile, the Horninglow Road and Derby Road sections of the AQMA have been consistently below the annual nitrogen dioxide objective for a number of years. Even though the average nitrogen dioxide level for the Horninglow Street and Wellington Road sections dropped below the annual objective in 2012, there are still some individual locations within these sections, where the annual objective is still being breached as shown in Appendix 1a and 1e. The smaller AQMA in Stapenhill (Figure 1.5) has also seen the average nitrogen dioxide level drop just below the annual objective for the past four years. However, it is important to continue monitoring along Horninglow Road, Derby Road and within the smaller AQMA, as some of the monitoring sites are still recording levels around 34µg/m^3 to 37µg/m^3. Ideally these would need to decline by at least a further 3-5 µg/m^3 in order to be more confident of revoking these sections of the AQMA, taking into consideration changes in weather patterns and changes in traffic flow / composition which can all influence air quality from year to year.

1.5 Air Quality, Health & Socio-economic Impacts

Poor air quality is a significant public health issue. It is estimated to have an effect equivalent to 29,000 deaths each year and is expected to reduce the life expectancy of everyone in the UK by 6 months on average[10].

The main pollutants of concern in the UK are particulate matter, nitrogen dioxide, and ground level ozone (O_3)[4]. Particulate matter is thought to have the most damaging impact on health with adverse effects to health seen at very low concentrations, even below Objectives set in the National Air Quality Strategy[10]. The impact of air pollution on public health is reflected by the inclusion of an indicator of mortality associated with air pollution in the Public Health Outcome Framework[11]. The Public Health Outcomes Framework indicator reflects the fraction of all-cause adult mortality attributable to long-term exposure to current levels of anthropogenic particulate air pollution. The baseline data for the indicator have been calculated for each upper tier Local Authority in England, based on modelled concentrations of fine particulate air pollution ($PM_{2.5}$) in 2010.[10] Estimates suggest that removing all fine particulate air pollution would have a greater impact on life expectancy in England and Wales than eliminating passive smoking or road traffic accidents[12]. In East Staffordshire, it is estimated the fraction of mortality attributable to long term exposure to anthropogenic particulates is 5.3%, with 566 life years lost, compared with an average fraction of 5.6% for the whole of England[13].

Children, the elderly and individuals with pre-existing respiratory or cardiovascular conditions are most vulnerable to the impacts of adverse air quality. The specific impacts of air pollutants are well documented in the literature, which includes effects on lung function and respiratory diseases, as summarised in Table 1.2, adapted from the World Health Organisation (WHO)[14].

Table 1.2: Short and long term effects of exposure to air pollution[14].

Pollutant	Effects of short term exposure	Effects of long term exposure
Nitrogen Dioxide	• Effects on pulmonary function, particularly in asthmatics • Increase in airway allergic inflammatory reactions • Increase in hospital admissions • Increase in mortality	• Reduction in lung function • Increased probability of respiratory Symptoms
Particulate Matter	• Lung inflammatory reactions • Respiratory symptoms • Adverse effects on the cardiovascular system • Increase in medication usage • Increase in hospital admissions • Increase in mortality	• Increase in lower respiratory symptoms • Reduction in lung function in children • Increase in chronic obstructive pulmonary disease • Reduction in lung function in adults • Reduction in life expectancy, mainly due to cardiopulmonary mortality and probably lung cancer
Ozone	• Adverse effects on pulmonary function • Lung inflammatory reactions • Adverse effects on respiratory symptoms • Increase in medication usage • Increase in hospital admissions • Increase in mortality	• Reduction in lung function development

Adverse air quality also has significant impacts on the UK economy. It is estimated that the economic costs to the National Health Service (NHS) are approximately £9-19 billion every year, which is comparable to the economic cost of obesity (over £10 billion)[15].

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4. http://laqm.defra.gov.uk/

10. http://www.publications.parliament.uk/pa/cm200910/cmselect/cmenvaud/229/22902.htm

11. http://www.phoutcomes.info/

12. http://www.iom-world.org/pubs/IOM_TM0601.pdff

13. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/332854/PHE_CRCE_010.pdf

14. http://www.euro.who.int/document/E83080.pdf

15. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69340/pb13378-air-pollution.pdf

1.6 Other Policies and Strategies that Influence Air Quality

In addition to the legislative requirements, there are also a number of other national, regional and local policies and strategies that influence air quality action planning, outlined below;-

1.6.1 National Policies & Strategies

The National Planning Policy Framework (NPPF) and Air Quality Practice Guidance

The National Planning Policy Framework (NPPF) highlights that local planning policies should sustain compliance with and assist towards meeting EU limit values or national objectives for pollutants, taking into account the presence of AQMAs. Planning policies should also be consistent with AQAP's and as such air quality is often a material consideration[16]. Air quality is assessed in line with the NPPF and associated Air Quality Practice Guidance, updated by March 2014 to ensure that the AQMAs are not adversely affected and to ensure developments are suitable and not introducing new exposure to areas of poor air quality[17].

Public Health Outcome Framework

The public health white paper "Healthy Lives Healthy People" argued that Local Authorities should play a stronger role in the delivery of public health at a local level, including setting objectives and priorities locally[18]. Furthermore, the recently published "Public Health Outcomes Framework" consists of two overarching outcomes that set the vision for the whole public health system[19]. The outcomes are:-

- ***increased healthy life expectancy, which takes account of the health quality as well as the length of life;***
- ***reduced differences in life expectancy and healthy life expectancy between communities (through greater improvements in more disadvantaged communities).***

Feeding into the outcomes is a set of four health domains with associated objectives. Air quality Domain 3 ("Health Protection") includes an objective ***'the population's health is protected from major incidents and other threats while reducing health inequalities'*** for which an indicator is ***"fraction of mortality attributable to particulate air pollution".***

1.6.2 Regional Policies & Strategies

Local Transport Plan (LTP)

One of the biggest external drivers for air quality in East Staffordshire is through transport. Transport measures in East Staffordshire are governed by the LTP by Staffordshire County Council[20]. Under the third LTP, a wider Strategy Plan for the whole of Staffordshire was published in 2011, which outlines the objectives and policies for managing transport, infrastructure and highways in the County. It covers all modes of transport, the management / maintenance of the local highway network and the relationship between transport and wider strategic issues, such as the economy, community safety, the environment and social inclusion. Feeding into this is an Integrated Transport Strategy for East Staffordshire that was last updated in 2014 and which forms the bulk of the measures in this AQAP[21].

The Local Plan & Neighbourhood Development Plans

The Local Plan sets out the opportunities for development locally and presents clear guidance on what will or will not be permitted and where. The purpose of the Local Plan is to:-

- provide a practical and detailed basis for the control of development and use of land – whereby applications for planning permission are submitted to the Council's Development Control Team and determined in accordance with the Local Plan;

- provide potential applicants for planning permission with a clear indication of the type, quality and location of development which the Council would accept, encourage and facilitate, and an equally clear indication of the circumstances in which development will be resisted and why;

- provide a spatial framework for the coordination and delivery of other plans, programmes and strategies;

- afford protection to the natural and built environment to ensure that those assets that are valuable to the borough are protected, conserved and enhanced;

- promote the development of land to deliver future growth thereby providing a framework for investment decisions; and

- bring locally specific planning issues before the public to provide an indication of how and when changes within the borough are likely to occur and how the changes will affect specific interests.

The Local Plan contains a number of detailed policies, and one of which, titled Detailed Policy 7 Pollution & Contaminated Land states:

'Development proposals will only be granted planning permission where they will not give rise to, or be likely to suffer from, land instability and/or unacceptable levels of pollution in respect of noise or light, or contamination of ground, air or water....'.

Air quality assessments therefore are an important component of the Local Plan in ensuring that developments meet Detailed Policy 7 above.

The final Local Plan is due to be adopted at the end of 2015.

In conjunction to the Local Plan, Neighbourhood Development Plans establish the development and use of land in a neighbourhood, originating from the Localism Act 2011. These Plans give local people a say in how their communities develop whilst at the same time still needing to meet the needs of the wider area.

1.6.3 Local Policies & Strategies

Climate Change

The Council also has a Climate Change Strategy and Adaptation Plan, alongside a Home Energy Conservation Act (HECA) Plan. These documents collectively aim to improve energy efficiency and reduce greenhouse gas emissions. A number of the actions in these documents also have a beneficial impact on air quality. Some of the measures can have the opposite effect, as in the case of biomass boilers, which can cause localised air quality issues. It is therefore important to strike a balance between tackling poor air quality and greenhouse gas emissions.

Environmental Policy for East Staffordshire Borough Council

The Council is also in the process of developing an Environmental Policy, which has the potential to influence our own emissions to air through the reduction of fleet/staff mileage and energy usage.

Travel Plan for East Staffordshire Borough Council

The Council's Travel Plan also supports the reduction of vehicle and fuel uses which, while only having a small air quality impact, does demonstrate leadership whilst encouraging others to do the same.

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16. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf
17. http://planningguidance.planningportal.gov.uk/
18. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/216096/dh_127424.pdf
19. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263658/2901502_PHOF_Improving_Outcomes_PT1A_v1_1.pdf
20. http://www.staffordshire.gov.uk/transport/transportplanning/localtransportplan/staffordshirelocaltransportplan2011strategyplan.pdf
21. http://www.staffordshire.gov.uk/transport/transportplanning/localtransportplan/Integrated-transport-documents/East-Staffordshire-Transport.pdf

2 Achievements from the 2009 AQAP

At the heart of the 2009 AQAP was the Burton Urban Area Transport Management Study (BUATMS) that was originally established in 2001 by Staffordshire County Council as part of the second LTP for Staffordshire. Burton upon Trent was identified as one of the key strategic centres in the LTP, and as a result BUATMS was established to address traffic issues related to the town specifically.

Between 2002 and 2012, Staffordshire County Council secured around £1.4 million developer contributions towards the delivery of the BUATMS. These developer funds, together with around £2 million Local Transport Plan resources and £3.3million Community Infrastructure Fund awarded to the County Council in 2009, delivered the following:-

- Linking of traffic signals using Urban Traffic Control
- Variable Message Signs on radial routes and car park entrances
- Union Street traffic management investigations
- Restricted access on High Street
- A511 pedestrian, environmental and traffic management measures
- Traffic management measures along the A5189
- Highway capacity improvements on Parkway / Wellington Road
- Burton railway station forecourt scheme designs and investigations
- Strengthening of the railway bridge to enable railway station forecourt improvements
- Bus stop improvements in New Street and along routes to the town centre
- Enhanced Bus Passenger Information on Route 3 between Winshill, the town centre, Queen's Hospital and Stretton, An evaluation of the scheme in 2013, which involved interviewing 357 local residents concluded that the majority of respondents found the scheme to be extremely useful, but sustainable travel could be improved further by upgrading to real time bus passenger information (RTPI)
- Improved bus access to Queen's Hospital

- The new ‘Dash’ bus service between Regent’s Park, the town centre and Centrum 100
- Provision of the National Cycle Network, local cycle routes and cycle parking
- Pedestrian crossings
- Promotion of smarter travel
- Bus stops in the Borough now comply with disability discrimination legislation and discretionary travel allowance provides free 24/7 bus transport to any citizen of pensionable age or with a disability, plus their carer, and under 20s can travel anywhere in Staffordshire for just £1 per journey

The Council also implemented a number of additional measures from the 2009 AQAP relating specifically to the Council’s own estates and activities, thus leading by example. These measures included for example a policy for the implementation of a Green Fleet Review, with support from the Energy Saving Trust, promotional campaigns such as car sharing and walk to work week and an overhaul of the Council’s Travel Plan to encourage a shift in staff travel behaviour.[19]

The reported reduction in nitrogen dioxide levels since adoption of the 2009 AQAP are deemed to have been attributable to a combination of the AQAP measures and national measures, however the drop in levels has slowed, mirroring the national picture. Breaches of the annual objective are still being recorded in some parts of the AQMAs, and the BUATMS which formed the heart of the 2009 AQAP ceased in 2013, hence the need for an updated AQAP.

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22. East Staffordshire Borough Council. 2009. Air Quality Action Plan

3 Action Plan Development

3.1 Guidance

This AQAP has been prepared following the requirements of;-

- Defra. 2009. Part IV of the Environment Act 1995 Local Air Quality Management Policy Guidance (PG09)[23], in conjunction with;-
- Defra. 2009. Part IV of the Environment Act 1995 Local Air Quality Management Technical Guidance (TG09)[24]

This AQAP also draws on best practice set out in Technical Guidance issued originally by the National Society for Clean Air (NSCA), now Environmental Protection UK (EPUK), that includes;-

- NSCA. 2001. Air Quality Action Plans: Interim Guidance for Local Authorities[25]

The AQAP also has regard to the National Planning Policy Framework (NPPF)[16] published by the Department for Communities and Local Government in 2012 and the 2014 updated associated Practice Guidance[17].

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16. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

17. http://planningguidance.planningportal.gov.uk/

23. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69348/pb13566-laqm-policy-_guidance-part4-090302.pdf

24 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69334/pb13081-tech-guidance-laqm-tg-09-090218.pdf

25. http://www.environmental-protection.org.uk/wp-content/uploads/2013/07/AQActionPlansInterim.pdf

3.2 Pollutant Sources

In order to target an AQAP effectively it is important to have a clear indication of the sources of pollutants that require addressing. In the case of East Staffordshire it is predominantly nitrogen dioxide.

The Council's previous review and assessment exercises, between 2005 and 2008, identified exceedences of the annual nitrogen dioxide objective at numerous roadside locations along the main arterial routes in Burton upon Trent and at a smaller location in Stapenhill, which led to the designation of two AQMA's and the adoption of the AQAP in 2009.

Since 2009, there has been little change in traffic volumes and composition within the borough, as highlighted in annual air quality assessment reports. If anything, the proportion of nitrogen dioxide levels that are resulting from industrial sources are likely to have reduced since the 2008 Further Assessment, due to the cessation of a number of industrial operations. Taking these factors into consideration the Council does not consider source apportionment to be necessary for this revised AQAP. Road traffic sources are therefore deemed to remain the predominant source of nitrogen dioxide emissions within the borough.[3]

It is also important to consider particulate emissions, especially the fine fraction ($PM_{2.5}$) in light of more recent medical evidence of health impacts at levels below national targets, already referred to in Section 1.5. Furthermore the 2015 Updating & Screening Assessment highlighted a gradual creep in particulate emissions over the past 5 years, despite being below the annual objective.

3. East Staffordshire Borough Council. 2015. Updating & Screening Assessment

3.3 Quantification of the Nitrogen Dioxide Reduction Required

For the purposes of developing a revised AQAP, it is important to have an up to date picture of the degree of air quality improvement needed to bring nitrogen dioxide levels to below the annual mean objective, which is defined by the difference between the highest monitored concentration and the objective level (40ug/m^3) at each location where an exceedance has occurred. This Council has used 2014 nitrogen dioxide diffusion tube data where there is a relevant exposure to make this assessment, as shown in Table 4.1. This exercise is important to help influence the extent of actions required within the AQAP and to help focus on the areas that require the greatest reduction.

Table 4.1: Percentage nitrogen dioxide (NO_2) reduction required to meet Objectives

Location	2014 NO_2 Concentration (µg/m3)	NO_2 Reduction Required to meet the Annual Objective (µg/m3)	% NO_2 Reduction Required to meet the Annual Objective
1. Derby Turn (Monitoring Station)	41.4	-2.4	5.8
2. Derby Turn (Roadside)	44.2	-5.2	11.8
3. Derby Street - approaching Derby Turn	44	-5	11.4
4. Derby Street / Byrkley Street Junction	42.9	-3.9	9.1
5. Wellington Street - approaching roundabout	41.7	-2.7	6.5
6. Horninglow Street / Guild Street corner	41.1	-2.1	5.1
10. Horninglow Street - near junction with High Street	42.4	-3.4	8.0

While Table 4.1 above indicates that parts of Horninglow Street, Wellington Street, Derby Street and Derby Turn require the greatest attention in this AQAP, it is also important to consider other sections within the primary AQMA where nitrogen dioxide levels are now meeting the annual objective to ensure this continues, as well as the smaller AQMA in Stapenhill and protecting areas outside of the AQMA's.

3.4 Stakeholders

Building on the experience and working relationships with key stakeholders (partners) in the development of the 2009 AQAP, the Council has established a steering group to identify measures already underway that will benefit air quality as well as developing new measures that can be implemented.

For effective implementation of the AQAP, it is important the Council maintains consistent and constructive engagement with all key stakeholders as all AQAP measures require backing and support to ensure stakeholders take ownership of relevant actions and are fully conversant with the overall decision making process. This will need to continue over the lifetime of the revised AQAP of five years and beyond. During times of economic austerity and budget cuts it is also important to be realistic of the financial and resource constraints not only of this Council but also stakeholders in identifying measures that can effectively be implemented. In the 2009 AQAP, this Council included a large number of measures where there was a potential to improve air quality without regard to the likelihood of it being implemented, however this has led to a number of measures being abandoned due to various constraints. It is therefore essential that measures identified for this revised AQAP are limited to those where the Council can realistically make positive change.

The Council is liaising with Staffordshire County Council's Connectivity Strategy Team to assist in prioritising measures identified in the 2014 Integrated Transport Strategy that will have the greatest air quality benefit.

Early discussions are also taking place with Highways England with respect to transport improvements on the borough's two main trunk roads (A38 and A50) which in turn could have knock on effect on the road network within Burton and Uttoxeter.

During 2014, the Council collaborated with seven of the other Staffordshire Local Authorities to form a consortium. The Staffordshire Consortium then made an air quality bid for funding an Eco-Stars Scheme. This application was successful and the Consortium was awarded £80,000 to fund a 2 year project, which is now underway, focussing on emissions from hauliers.

The Council is also working with the Planning Policy Team to develop an Air Quality Development Control Policy and subsequent Supplementary Planning Guidance. These will maintain and where possible, improve air quality by locating developments in such a way to reduce emissions overall and also mitigate against the direct impacts from those developments, with consideration for Section 106 Agreements and other funding streams to secure mitigation.

3.5 Identification and Rating of Measures

The Policy Guidance (PG09) and Technical Guidance (TG09) issued by Defra does not require a detailed cost/benefit analysis, as it would be impractical and technically difficult to quantify the air quality impacts that would likely be afforded with every proposed measure in the AQAP. However it does recommend that where possible, Local Authorities should aim to prioritise measures in accordance with a cost/benefit matrix where measures would be rated on their air quality impact against cost in deciding on whether a measure is feasible or not. The Council has limited influence on prioritising strategic transport measures that will be delivered by Staffordshire County Council as these have already started or committed for future delivery. Furthermore, with respect to other measures proposed for this AQAP, feasibility work will indicate what the likely air quality impacts and costs will be and ultimately whether they are feasible or not to implement.

Whilst it is the air quality benefits that are of most interest in relation to this AQAP, the wider socio-economic and environmental benefits should not be ignored. An ideal AQAP measure would be one that is cost effective, improves air quality in terms of nitrogen dioxide, particulates and greenhouse gases as well as having wider non-air quality benefits. Often the wider benefits affect the perception of the measure and can make it more appealing, but in some instances may make some potential actions undesirable.

Taking into consideration the above, this Council has rated each measure from low-medium-high. The ratings considered:

- The potential air quality impact & significance (rated low-high)
- Overall approximate cost-including direct and indirect costs (rated low-high)
- Wider socio-economic impact (rated low-high)
- Timescale of implementation (rated short-long-term)

3.5.1 Air Quality Impacts, Significance & Cost Benefit

Reductions in nitrogen dioxide emissions in pursuit of meeting the annual objective / EU Limit Value are the main reason why measures are proposed for inclusion in this AQAP and are arguably the most important consideration in identifying measures.

It is extremely difficult to quantify with any certainty the improvements in air quality attributable to specific measures in this AQAP. A number of the chosen measures are policy changes that will require feasibility studies, such that the exact details of the actions are not yet known. Furthermore, other measures chosen will involve 'softer' actions, which indirectly affect traffic and air quality, or alternatively affect them over a wider area, making the quantification of nitrogen dioxide reductions difficult. Despite this, professional judgement has been used to attempt to qualify the potential impact of the measures. The air quality impact (nitrogen dioxide reduction), has been categorised into low (<0.2ug/m^3), medium (0.2-1ug/m^3) & high (1ug/m^3) following the same procedure as that used in the 2009 AQAP. A few micrograms (ug/m^3) nitrogen dioxide reduction to meet the objective limit of 40ug/m^3 may not appear to be that large a target, although in fact it is very difficult to meet. Even modest reductions can be difficult to achieve. Also, given the failure of the European vehicle emission standards for Euro 4 and 5 diesel cars to deliver the expected emission reductions of oxides of nitrogen nationally, highlights the limitations of accurately predicting the air quality benefits of measures[2].

2. http://uk-air.defra.gov.uk/assets/documents/reports/cat05/1409261329_air_pollution_uk_2013_issue_1.pdf

Another indicator to take into consideration when rating AQAP measures is the significance of each measure in delivering air quality benefits specifically to the AQMA's. Some measures may deliver air quality benefits to the borough as a whole and by virtue of this, their significance would be deemed as low, whereas others that focus strategically on roads within the AQMA's would be deemed as high significance.

There is no guarantee that air quality objectives will be met, but the combined impact of all measures in this AQAP, together with national measures such as continuing improvements in vehicle technology, will work towards improving air quality both within and outside the AQMA's.

No matter how large an expected pollutant reduction may be, the inclusion of a measure in the AQAP must also take account of its cost effectiveness and other practical considerations such as scale and geography. Some actions with potentially large air quality benefits are prohibited by excessive cost and pull on resources for enforcing them, which typically include some of the more radical measures that are undertaken in some of the larger city or metropolitan authorities, such as Low Emission Zones (LEZs), and congestion charging etc, hence why they are not included in this AQAP. The approximate cost of each option considered has been estimated, ranging from low (<£10,000), medium (£10,000-50,000) to high (>£50,000).

The guidance documents suggest that when considering the costs of an option, this should include both direct and indirect costs, in addition to any revenue that may be generated. For non-technical options it is widely recognised that these costs are more difficult to quantify, compared to stationary abatement technologies.

Due to these difficulties associated with accurately quantifying the level of emission reduction and costs, it is not possible to work out a cost per 1ug/m^3 of nitrogen dioxide reduction.

Table 4.2 outlines a simple cost/benefit rating which the Council has used in appraising its AQAP measures.

Table 4.2: Simple cost benefit rating

Rating	Air Quality Impact	Cost
Low	<0.2ug/m^3	<£10,000
Medium	0.2 - 1ug/m^3	£10,000 - £50,000
High	>1ug/m^3	>£50,000

3.5.2 Wider Socio-economic Impacts

An ideal AQAP measure would be one that not only is cost effective and improves air quality, but also has wider environmental and socio-economic benefits such as providing more sustainable living, cost savings, improvements to health and well being, improved accessibility and street scene etc. It is also unrealistic to ignore the link between air quality and climate change, with most options identified also having carbon emissions reduction potential as well as particulate emission reductions.

3.5.3 Timescales

It is also important to consider timescales when determining AQAP measures. This AQAP identifies measures that will be implemented over a range of timescales from short, medium to long term. Whilst it is preferable to implement measures that will have the largest air quality benefit in the shortest time possible, this is not always practicable, especially when delivery of the measure is reliant on stakeholders or is dependent on the release of funding. For the purposes of the cost/benefit rating outlined in Section 4.5.1, the timescales for the implementation of measures has been divided into short-term (<2yrs), medium term (2-5yrs), and long-term (>5yrs).

4 Air Quality Action Plan Measures

The 15 measures identified for inclusion in this AQAP are detailed below, with a summary table found in Appendix 1. The measures have been divided under the following headings;-

- Strategic Transport Measures
- Policies & Feasibility Studies
- Behavioural Change

4.1 Strategic Transport Measures

5.1.1 Integrated Transport Strategy

The third Local Transport Plan is the key delivery mechanism for wider strategic transport measures and is predominantly managed and delivered by Staffordshire County Council through the Integrated Transport Strategy for the borough.[26] This document was updated in 2014 to reflect the emerging Local Plan and will be subject to further updates in the next couple of years.

Staffordshire County Council have set out a number of key priorities in their 2014 Integrated Transport Strategy, that include;-

- Managing traffic levels within AQMA's in Burton upon Trent.
- Managing peak hour traffic levels in Burton upon Trent and carbon emissions.
- Accommodating strategic greenfield housing and employment sites on the A38(T) and Burton upon Trent's local road network.
- Enhancing public transport interchanges and connectivity to strategic services and facilities in Burton upon Trent.
- Accommodating sustainable development on local roads in Uttoxeter and at junctions with the A50(T).
- Improving public transport connectivity and quality of life for local communities.

- Raising awareness of environmental issues and encouraging people to lead more sustainable lifestyles, helping to reduce carbon emissions.
- Maintaining the condition and safety of the highway network

The key options that have greatest relevance to air quality improvements are proposed to be delivered through a Burton upon Trent Local Transport Package which forms part of the Integrated Transport Strategy, with short to medium term measures over the next three years and longer term measures up to 2031.

Whilst the Burton upon Trent Local Transport Package focuses mainly on mitigating the potential impacts of traffic generated from housing and employment growth identified as part of the Local Plan, it will also try to address existing traffic issues on Burton's road network, which includes roads within and outside of the AQMAs.

Another key focus is encouragement of more sustainable travel options. The Council has been liaising with Staffordshire County Council's Connectivity Strategy Team to focus on options that are most likely to be delivered and which have the greatest air quality benefits and most significance for the AQMAs wherever possible. These are set out in order of likely greatest air quality benefit from action 1 to action 5.

26. Staffordshire County Council. April 2014. East Staffordshire Borough Integrated Transport Strategy 2014 – 2031

Action 1: Walton on Trent Bypass (Third River Crossing)

As part of the Drakelow Village development in neighbouring South Derbyshire District, which is already underway, a new river crossing will be provided by the developers through a S.106 agreement, just north of Walton Village. Although the exact date for construction of the new river crossing is not yet known.

Action 1	**Walton on Trent Bypass (Third River Crossing)**
Air Quality Impact **Rating: Medium/High**	- The construction of a third river crossing north of Walton Village is anticipated to redirect some of Burton's through traffic and ease traffic congestion / volumes over the existing two river crossings of A511 Trent Bridge and A5189 St Peters Bridge thus reducing nitrogen dioxide and particulate emissions in the town. Staffordshire County Council has agreed to revisit traffic modelling for the town to confirm the likely degree of change in through traffic in Burton as result of this scheme.
Significance to AQMA's **Rating: High**	- The two river crossings of Trent Bridge and St Peters Bridge feed into both AQMA's, therefore easement of traffic across both routes could have significant impacts to both AQMA's.
Cost	- **High** (over £1 million), but funding has already been secured.
Wider environmental and socio-economic impacts **Rating: Low/Medium**	- Reduced congestion will also reduce carbon emissions. - Reduced commuting times to work, potentially improving productivity and mood. - It will also help to create a safer environment to walk and cycle.
Timescales	- Implementation of this measure will take place over the **long term** as the development will be

	phased over a number of years, hence the target date for constructing the third river crossing is dependent on progress with the Drakelow Village, which may extend beyond the lifetime of this AQAP
Funding	- S.106 Agreement & Growth Funds
Responsibility	- South Derbyshire District Council, Staffordshire County Council & East Staffordshire Borough Council
Barriers/Constraints	- May not be welcomed by some stakeholders, particularly those living close by during the construction phase and concerns about noise and dust, as well as a shift in traffic to rural areas around Walton on Trent.

Action 2: Town Centre Traffic Management Package

Traffic counts, modelling and consultations between Staffordshire County Council and key stakeholders over a number of years have identified congestion and delays to be an issue along the B5018 Town Centre Guild Street / Union Street / Orchard Street corridor. This in turn has impacts on air quality, both within, and outside of the AQMA's, as well as affecting the viability of businesses and bus operators by dissuading the public from using the town centre. Staffordshire County Council has proposed a Town Centre Traffic Management Package that will focus on enhancement of pedestrian facilities on High Street, enhancing the New Street bus interchange including restricting or prohibiting private car use and re-examination of the Union Street traffic management study originally conducted in 2008 as part of the previous BUATMS. Following discussions with Staffordshire County Council they will look into the viability of changes to signage on the local road network to try and redirect traffic within the AQMA's where practicable and promote more efficient and direct journeys into the Town Centre. Staffordshire County Council will work with their transport engineers to assess the feasibility of any signage alterations.

Action 2	Town Centre Traffic Management Package
Air Quality Impact **Rating: Medium to High**	- Increased bus patronage and uptake of pedestrian facilities will help reduce car use and thus nitrogen dioxide and particulate emissions. - Potential improvements to traffic flow along this corridor and within the AQMA's will help reduce emissions further.
Significance to AQMA's **Rating: Medium to High**	- The B5018 connects both AQMA's but would also have benefits to air quality across the wider local network. The air quality significance is therefore considered to be **Medium.** Changes to signage on the local road network if considered viable could have significant air quality benefits within the AQMA if car use is deterred.
Cost	- **Medium to High** (i.e. £30,000 upwards)
Wider environmental and socio-economic impacts **Rating: Medium**	- Increased bus patronage and reduction in car use would not only have benefits for improving air quality but would also help reduce carbon emissions - Improved pedestrian safety - Restricting / prohibiting through traffic on New Street will redefine New Street as a focal point for public transport users, thus making it a recognisable location where people know they can rely on catching a bus from. - More efficient routing would reduce journey times and therefore make use of the town centre more appealing - Improved bus stop facilities such as raising kerbs will help reduce social exclusion of non-car users and improve accessibility to users with restricted mobility or disabilities.

	- Increased social interaction from an improved street scene.
Timescales	- Implementation of this measure will take place over the **medium term** over the next 2-5 years with respect to changes on New Street, but **long term** (i.e. beyond 5 years) subject to feasibility research with respect to High Street pedestrian area, Union Street transport study and alterations to signage.
Funding	- £20,000 has been allocated to the scheme via the Integrated Transport Strategy Block Capital Funds, that will also be supplemented by S.106 Agreements and potential future Growth Funds should they become available
Responsibility	- Staffordshire County Council & East Staffordshire Borough Council
Barriers/Constraints	- The extent of the scheme is dependent on funds and resources. - Difficult to strike a balance between all users. - Any changes to signage if considered viable will only encourage more efficient journeys and is unlikely to be able to be enforced. - Given that New Street is already the main bus interchange, prohibiting car use entirely is possible but this is dependent on backing and support from all key stakeholders.

Action 3: Improved Bus Provision / Services

Staffordshire County Council has proposed to improve existing bus services and review the network. One key area where services will be improved is through the implementation of Real Time Passenger Information (RTPI) for bus users along all

bus routes. New bus services will also be introduced to serve development sites, including Branston Locks, Beamhill, Land South of Branston and Drakelow Village.

Action 3	**Improved Bus Provision / Services**
Air Quality Impact **Rating: Low/Medium**	- Increased bus provision will help reduce car use and thus nitrogen dioxide and particulate emissions.
Significance to AQMA's **Rating: Low**	- Improvements to existing bus services and increased bus provision will take place across the whole of Burton, which will have air quality benefits that will be diluted over a greater area. Its significance to the AQMA's is therefore fairly low.
Cost	- **High** (i.e. >£50,000)
Wider environmental and socio-economic impacts **Rating: Medium**	- A review of the existing bus network and associated facilities could result in more direct and efficient routes to the town centre, thus reducing journey times and improving reliability that in turn will make bus uptake more appealing. - Improved connectivity overall to the town centre. - Upgrades to RTPI will be able to provide live information on expected departure and arrival times, delays or disruptions to services such that bus users can make better informed decisions on modes of travel, when to travel and the most direct bus service to use. - Potential reduction in carbon emissions from less car use.
Timescales	- Implementation of this measure is ongoing and is therefore **short to long term**. RTPI will be phased in over the next couple of years. Arriva aim to implement RTPI by the end of 2015,

	Midland Classic are still at the development stage of their RTPI and Trent Barton will be carrying out trials during the autumn of 2015, with a view to implementing in 2016.
Funding	Integrated Transport Strategy Block Capital Funds and potential future Growth Funds
Responsibility	- Staffordshire County Council, Bus Operators Arriva, Midland Classic and Trent Barton & East Staffordshire Borough Council
Barriers/Constraints	- Extent and scale of measures are subject to funding and resource constraints

Action 4: A5189 / A444 Network Reinforcement & Enhanced Cycling & Pedestrian Facilities

The 2014 Integrated Transport Strategy originally included a measure to provide an additional westbound lane on the A5189 St Peters Bridge to tackle congestion.

Feasibility work has since demonstrated that provision of an additional lane can only be safely delivered by removing all existing pedestrian and cycling facilities on the bridge by replacing them with a new parallel bridge or replacing the whole structure. This is not currently achievable or affordable therefore the preferred option is to carry out bridge strengthening works and improvements to existing cycling and pedestrian facilities on the bridge. However, the provision of an additional lane cannot be ruled out completely and is therefore more of a long term aspiration beyond the lifetime of this AQAP.

Reinforcement works on St Peters Bridge are necessary in order to prevent vehicle restrictions, which in turn could lead to disruption, congestion and poorer air quality. This will be complemented by improvements to Stapenhill viaduct and Ferry Bridge that runs parallel to St Peters Bridge through segregated walking and cycling links.

Work on the Ferry Bridge is already underway. Early discussions with Staffordshire County Council has also led to agreements that traffic flow along the A444 within the smaller AQMA should also be looked at for further improvements, should funding permit.

Action 4	**A5189 / A444 Network Reinforcement & Enhanced Cycling & Pedestrian Facilities**
Air Quality Impact **Rating: Low**	- Although the air quality impact of implementing this measure alone is likely to be low, any measure to prevent disruption or congestion on the existing heavily trafficked St Peters Bridge, A444 including the smaller AQMA and other local roads will help prevent any deterioration in air quality and thus support the drive to improve air quality rather than contradict it. - Enhancement of cycling & pedestrian facilities will help reduce private car use and thus work towards reducing nitrogen dioxide and particulate emissions.
Significance to AQMA's **Rating: Medium**	- Implementation of this measure could have high significance to the smaller AQMA as St Peters Bridge and the A444 which feeds into it, but when considered in context of the larger AQMA overall any significance would be considered to be medium.
Cost	- **High** (estimated to be in excess of £50,000)
Wider environmental and socio-economic impacts **Rating: Medium**	- Avoiding traffic restrictions will improve journey time savings by preventing disruption and reducing congestion on the wider local highway network. - Any alleviation of congestion will help reduce carbon emissions - Enhanced cycling and pedestrian facilities

	across the bridges will improve accessibility, therefore making it safer and more appealing for cyclists and pedestrians alike. - The scheme will also provide social benefits by increasing travel choices, as the bridges are within the Burton Ward, which are within the 10-20% most deprived areas nationally. - It will also help encourage physical activity and in turn health - Improved road surfacing will also improve journey quality and road noise.
Timescales	- Implementation of this measure overall will take place from **short to long term.** Improvements to cycling and pedestrian facilities on the Ferry Bridge / Stapenhill Viaduct are already underway and will continue over the next 12 months. Work will then commence on enhancing pedestrian and cycling facilities on St Peters Bridge and bridge strengthening works in about 3 years time and beyond (**medium to long term).**
Funding	- Integrated Transport Strategy Block Capital Funding via the Local Highways Maintenance Challenge Fund, supported by LEP Growth Deals
Responsibility	- Staffordshire County Council & East Staffordshire Borough Council
Barriers/Constraints	- Delivery of the measure is dependent on funds becoming available. - During construction, disruption / delays would be likely which may be perceived negatively by the public if their freedom of movement is restricted**.**

Action 5: Local Transport Corridors

A number of transport corridors have been identified in the Integrated Transport Strategy where traffic conditions will be reviewed in pursuit of implementing junction improvements and upgrading Urban Traffic Control Systems, where practicable. The main purpose for this is to mitigate increased traffic from a number of development sites earmarked for the town over the coming years. The transport corridors that will be focussed on are within the AQMA's or lead into them and includes;-

- A5121 Derby Road Corridor
- A511 Town Centre Corridor (i.e. Horninglow Street to A444 Stapenhill Road)
- A511 Tutbury Road Corridor
- B5108 Branston Road Corridor
- B5017 Shobnall Road Corridor

Staffordshire County Council will continue to assess the feasibility of works to improve traffic flow and alleviate congestion at the Derby Turn junction which forms the centre of the main AQMA. This particular junction has long been a bottleneck, where traffic flow is restricted due to a combination of narrow lanes, HGV movements and high volumes of traffic especially at peak hours. To date Staffordshire County Council have looked at various measures to try and improve flow, such as signalisation, but so far none of the options investigated are feasible. Investigation works on this junction are therefore ongoing.

Action 5	**Local Transport Corridors**
Air Quality Impact **Rating: Medium**	- The Derby Turn roundabout has long been a bottleneck where traffic flow is restricted due to a combination of narrow lanes, HGV movements and high volumes of traffic especially at peak hours. Any measure will help improve flow, reduce waiting times at each of the four junctions of this busy roundabout and in turn improve both nitrogen

	dioxide and particulate emissions, in pursuit of meeting objectives. Improved traffic flow in turn will have knock on effects to other routes that radiate from this junction and into the Town Centre. - Mitigation of development traffic earmarked for the Town will ensure air quality is not worsened.
Significance to AQMA's **Rating: High**	- All local transport corridors that form the focus of this measure are either within the AQMA or feed into it, therefore the significance of all the local transport corridor measures considered as a package could potentially be high.
Cost	- **High** (ranging from around £50,000 just for feasibility work to over £100,000)
Wider environmental and socio-economic impacts **Rating: Medium**	- Reduced carbon emissions - Reduced nitrogen dioxide and particulate emissions will help provide cleaner air for people living and working within the AQMAs. - Reduced commuting times to work and into the town centre, thus making Burton a more desirable place to work and visit. - Improved capacity should improve road safety, not only to motorists but pedestrians and cyclists. In turn improved pedestrian and cycling facilities will help promote more active lifestyles thus benefitting fitness and overall well-being.
Timescales	- Implementation of this measure will take place over the **long term** subject to feasibility.
Funding	- Mainly through S.106 Agreements and possibly supplemented with Integrated Transport Strategy Block Capital Funding

Responsibility	- Staffordshire County Council & East Staffordshire Borough Council
Barriers/Constraints	- Delivery of the measure is dependent on funds becoming available. - Possible delays / disruption initially.

Uttoxeter Local Transport Package

Although traffic flow, congestion and air pollution on local roads in Uttoxeter is not a significant problem, a Transport Package has nevertheless been proposed for the Town as part of the Integrated Transport Strategy, which is worth mentioning in this AQAP. A number of priorities for Uttoxeter have been highlighted, which includes;-

- Improved cycling and walking links to the Town Centre
- Improve bus services and facilities, including enhancement of Uttoxeter bus station
- A50(T) growth corridor and realignment (referred to in more detail in Section 5.1.2 under Highways England Trunk Road Strategies)

5.1.2 Highways England Trunk Road Strategies

Highways England (formerly Highways Agency) is the new company created by the government to operate and improve motorways and major A roads (i.e. Strategic Road Network) in England. Up to £11 billion will be invested through the Road Investment Strategy (RIS) up to 2040 to make the strategic road network smoother, smarter and more sustainable. A number of performance specifications have been set in the Strategic Business Plan (2015-2020), of which the one most relevant to air quality is “Delivering better environmental outcomes”.[27] In East Staffordshire the A38 and A50 trunk roads fall under the Strategic Road network. Highways England is looking into the potential for implementing expressways on both the A38 and A50. Exactly what this will entail and when it will be implemented is not yet certain, as the concept is at very early stages at present. The Expressways Scheme is therefore more of a long term aspiration at this stage, which is likely to be implemented beyond

the lifetime of this revised AQAP. However, the main aims of any Expressway Scheme will be to;-

- Encourage more free-flowing traffic by modernising junctions
- Provide emergency refuge and maintenance areas
- Use advanced technology to detect and help clear incidents more quickly and get traffic moving again.

It is therefore difficult to comment on what the potential benefits will be, if implemented at this stage. However it is worth mentioning the scheme here

27. Highways England. 2015. Strategic Business Plan 2015-2020

5.1.3 Eco-Stars Recognition Scheme

Another scheme that will feed into the revised AQAP is the Staffordshire Eco-Stars Recognition Scheme, which is a consortium of eight Staffordshire Local Authorities.

The Staffordshire Consortium made an air quality bid to Defra in 2014 to fund an Eco-Stars project, which proved successful and £80,000 was awarded to fund a 2 year project and the monies were released early in 2015. The scheme has also been supported by Highways England, Staffordshire County Council's Connectivity Strategy Team, Public Health for Staffordshire and the Stoke and Staffordshire LEP, with letters of support from them.

The Eco-stars scheme is a programme which actively engages with operators of commercial vehicles (i.e. hauliers, HGVs, buses, coaches, vans etc) at a local level with the specific aim of encouraging and helping them to reduce the negative impact of their activities on air quality and the wider environment.

Each Authority has already started to identify potential hauliers that can benefit from the scheme and has put these forward to Transport & Travel Research Ltd (TTR), who are a specialist third party company who have experience of engagement with and working alongside commercial vehicle operators delivering Eco-stars in other regions. A target of recruiting 40 members has been set for the first year of the scheme.

TTR's role will be to evaluate current practices of each member (i.e. haulier), identify what environmental controls are already in existence and then benchmark this against existing best practice and devise an action plan with potential improvements to make cost savings, reduction in emissions etc that will undergo a cost benefit analysis. It will also include follow up assessments to monitor and measure progress over time.

This Council is also engaging with its own internal Waste Management Department in pursuit of making emissions reductions and cost savings from its own waste fleet, thus leading by example.

Action 6	Eco-stars Recognition Scheme
Air Quality Impact **Rating: Medium**	- Reduction in emissions (nitrogen dioxide and particulates) as HGVs, buses, coaches and vans can affect air quality disproportionately despite lower numbers. - Based on 40 recruited members it is predicted that annual emissions reductions per Local Authority in the Consortium will be approximately 14 tonnes NO_x per year and 0.55 tonnes of PM_{10} per year (this is based on a long established scheme in South Yorkshire)
Significance to AQMA's **Rating: Medium**	- Although this is a County wide scheme there are a number of hauliers that use roads within the AQMA's therefore improvements in vehicle fleet technology, better driving practices and routing etc could have a medium significance to air quality within the AQMA's.
Cost	- **High** (but funding is already secured)
Wider environmental and socio-economic impacts **Rating: Medium**	- Carbon emissions reductions per local authority are predicted at 1428 tonnes of CO_2 per year. - Potential benefits to ease congestion from better route management. - Cost savings from improved fuel management for each member recruited with potential cost savings to the Council from improvements to its own waste fleet. - Support in implementing measures could help to improve performance, potentially leading to higher operational star ratings over time. - High star ratings in turn will provide opportunities to raise the operational and environmental profile of hauliers, particularly in the eyes of competitors (i.e. other operators),

	customers and local communities. - Benefits to wider regional Air Quality as Staffordshire is centrally located within the UK therefore there is the potential to benefit wider regional / national air quality (EU Limit Values) because of the strategic road network (e.g. A50, A500, A5, A38 and M6). There are a number of nationally based freight companies based in the county. - Auditing / evaluation of practices from TTR are completely free to each haulier.
Timescales	- The scheme will run for 2 years (**short medium term**) and possibly beyond subject to funding from other streams. The Staffordshire Consortium aims to have 40 members by the summer of 2016. The Council aims to recruit its own Waste Management Team by March 2016
Funding	- Already secured through grant funding from Defra for 2 years, but there may be scope for further LEP funding to maintain the scheme beyond 2 years. This additional funding stream is currently being investigated.
Responsibility	- Staffordshire Eco Stars Consortium comprising East Staffordshire Borough Council, Stoke on Trent City Council, Newcastle-under-Lyme Borough Council, South Staffordshire District Council, Cannock Chase District Council, Lichfield District Council, Stafford Borough Council and Staffordshire Moorlands District Council. Also TTR who will deliver the scheme.
Barriers/Constraints	- No financial risks as funds for the scheme are secured for at least 2 years.

	- Corporate culture, cynicism and apathy from some hauliers about the scheme and some degree of reluctance to change management practices.

4.2 Policies & Feasibility Studies

4.2.1 Air Quality Policy for Development Control

One of the most effective means the Council can actively manage air quality in the Borough is through the development control system.

Land use planning and development control is important as it ensures that future development is sustainable, supporting rather than compromising air quality improvements. Poor control and land use has the potential to significantly negatively impact on air quality.

Whilst the presence of AQMA's makes consideration of air quality impacts of a proposed development important, there may also be a need to regard air quality as a material factor in determining planning applications in any location. This is particularly important where the proposed development is not physically within the AQMA, but could have adverse impacts on air quality within it, or where air quality in that given area is close to exceeding objectives itself.

The National Planning Policy Framework states that "*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*".[16]

Planning decisions therefore need to ensure that any new development in AQMA's have regard to the local AQAP.

The borough is earmarked for a significant amount of future growth as set out in the Council's Local Plan, due for adoption at the end of 2015; therefore it is important to have an air quality policy in relation to development control.

16. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

An Air Quality Policy for Development Control (PDF File) has been developed alongside this AQAP and can be found as Technical Document 2 to the overall Air Quality Strategy.

This is designed to support the planning process until the Council formally develops Supplementary Planning Guidance. A summary of the key benefits of having this Policy and subsequent Guidance are set out below.

Preparation for a formal Supplementary Planning Policy Guidance Document is planned for 2016 and is likely to cover broader environmental and sustainability issues, including air quality.

Action 7	**Air Quality Policy for Development Control**
Air Quality Impact **Rating: High**	- Will help to maintain and work towards improving air quality. - Ensure air quality in the AQMA's is not compromised by proposed development within or nearby. - Ensure air quality outside of AQMA's is maintained / protected. - Ensure that new proposed developments do not introduce new receptors into an area of existing poor air quality. - Tackle cumulative impacts of developments on air quality better (i.e. gradual air pollution creep). - Provide a means to manage construction impacts from dust, hence particulate emissions better than previously based on a risk score approach. - Introduces consistency and advice to the air quality assessment process.

Significance to AQMA's **Rating: High**	- Consistent effective control applied to developments within or just outside of the AQMA's therefore the significance is high
Cost	- **Low.** Costs would be Low to the Council as they would be based on administrative costs of developing policies and guidance
Wider environmental and socio-economic impacts **Rating: High**	- An overall reduction in background pollution levels will help reduce overall exposure, making a healthier environment not just to those living and working within the AQMA's but across the whole borough. - The Policy will set out what information is required to satisfactorily complete an air quality assessment and therefore will ensure a consistent approach from developers for all proposed developments. - Will support sustainable travel and active lifestyles. - Ensure sustainable building design to help achieve high level energy efficiency and therefore the impacts of air pollution associated with heating, electricity generation etc. - Supports wider environmental and sustainability policies.
Timescales	- The Policy is an interim measure to coincide with the adoption of the Local Plan in the **short term** (**i.e. over next 12 months**) until a wider Environmental Supplementary Planning Guidance is completed by **December 2016**
Funding	- East Staffordshire Borough Council's Environmental Health & Planning Policy
Responsibility	- East Staffordshire Borough Council's

	Environmental Health Department in collaboration with internal Planning Policy.
Barriers/Constraints	- Resistance from developers to what may be seen as additional burdens in carrying out air quality assessments or implementation of mitigation.

4.2.2 Feasibility for S.106 Obligations and Community Infrastructure Levy (CIL) Funding for Air Quality

Planning obligations or agreements under Section 106 of the Town and Country Planning Act 1990 (as amended) can be used as a mechanism to ensure a development is acceptable in planning terms, that otherwise would be unacceptable.

The National Planning Policy Framework (NPPF) states that: *"Local planning authorities should consider whether otherwise unacceptable development could be made acceptable through the use of conditions or planning obligations. Planning obligations should only be used where it is not possible to address unacceptable impacts through a planning condition".*[16]

A S.106 agreement tends to be used for site specific mitigation of the impact of the development and is often referred to as developer contributions. A planning obligation (S.106) can be subject to conditions, where restrictions can be imposed definitely or indefinitely.

If the S.106 is not complied with, it is enforceable against the person that entered into the obligation or agreement and any subsequent owner. The S.106 can also be enforced by injunction. The legal tests for when S.106 agreements can be used are set out in Regulation 122 and 123 of the Community Infrastructure Levy Regulations 2010 (as amended) and also in Paragraph 204 of the NPPF.[26] The tests are;-

1. necessary to make the development acceptable in planning terms
2. directly related to the development; and

3. fairly and reasonably related in scale and kind to the development.

Other developer contributions can come in the form of the Community Infrastructure Levy (CIL) now in place through the 2008 Planning Act, which does not replace S.106 agreements but tightens up on the S.106 tests. CIL can be used as a funding mechanism to address the broader impacts of a development, whereas S.106 agreements can only be used for mitigation directly related to the development.[28]

Both cannot be used simultaneously for the same development proposal.

The Council will investigate whether either two funding mechanisms can feasibly be used specifically for air quality purposes and if so set out guidance for when each can be used, possibly within Supplementary Planning Guidance referred to in Action 7 above.

The feasibility study will also consider the adoption of 'exposure costs' which are calculated based of the additional air quality emissions generated and a 'damage cost' per tonne of air quality pollutant.

The use of exposure costs is becoming increasingly popular by local authorities and is used to determine the costs required for mitigation. Where sufficient mitigation is not possible on site then this can be incorporated into a S.106 agreement.

Defra provide measures of damage costs per tonnes through the Interdependent Group on Cost Benefit (IGBC) and emissions factors can be calculated from the Defra Emissions Factor Toolkit.

Future consideration would revolve around whether to adopt such approach and the threshold for when the approach would be required.

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16. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

28. http://www.pas.gov.uk/plan-making

Action 8	**Investigation of Feasibility for S.106 Obligations and Community Infrastructure Levy (CIL) Funding for Air Quality**
Air Quality Impact **Rating: Medium**	- S.106 agreements or CIL if secured will ensure proportionate mitigation of air quality impacts of developments that otherwise would not be possible through planning conditions alone.
Significance to AQMA's **Rating: High**	- Priority for S.106 agreements or CIL funding would most likely be sought when the AQMA's are likely to be adversely impacted, therefore their significance is High.
Cost	- **Medium to High** - The costs of mitigation to the developer would likely be high (i.e. >£50,000), which may involve infrastructure changes, highway improvements etc.
Wider environmental and socio-economic impacts **Rating: High**	- Improved health from improvements to air quality. - Mitigation could lead to better and more efficient building design and layout, improved traffic flow and possibly provide alternative / sustainable modes of transport.
Timescales	- **Short term (i.e. to complete by December 2016)**
Funding	- S.106 & CIL
Responsibility	- The Council's Environmental Health Department in collaboration with internal Planning Policy and Delivery Team.
Barriers/Constraints	- Conflicting demands for S.106 & CIL funding. - Negative perception from developers due to increased financial burden.

4.2.3 Feasibility Study for Electric Vehicle and Hybrid plug-in Vehicle Infrastructure

The past couple of years have seen 2.8% of all new car registrations coming from electric (EV) and hybrid electric vehicles according to the Department for Transport's Statistical Release (18 June 2015). Future electric vehicle growth demand increases the need for plug-in vehicle charge points and to 'future proof' development.

Funding from the Office for Low Emission Vehicles (OLEV) can be made available to home owners, local authorities and train operating companies to allow plug-in vehicle drivers to benefit from charge points at home, in areas of off-street parking and railway station car parks as well as for public sector fleet use, staff and visitors.[29]

The Council will investigate the feasibility for plug-in vehicle charge points across the borough and explore what opportunities are available for the funding of these schemes. This will primarily be looked into as part of development planning to see if charge points can be secured through Planning Conditions or S.106 Agreements and if so will set out criteria in Supplementary Planning Guidance for when charge points should be installed.

The feasibility to expand charge points to existing locations will also be explored.

Action 9	**Feasibility Study for Low emission Vehicles and Associated Infrastructure**
Air Quality Impact **Rank: Low to Medium**	- Significantly reduced or zero nitrogen dioxide & particulate emissions from EV & Hybrid EV.
Significance to AQMA's **Rating: Low**	- Potential air quality benefits across the whole borough and not just the AQMA's
Cost	- **Medium**
Wider environmental and socio-economic impacts	- Installing charge points will reduce social exclusion for users who may already own

Rating: High	electric or plug-in hybrid vehicles and therefore reduce mileage to find other charging points - Will set precedence in the borough to inspire existing businesses to install their own electric / hybrid vehicles and associated infrastructure, thus improving their own environmental profile. - Potential fuel savings to users - Reduced carbon footprint - Zero-rated or near zero road tax to users - Quieter vehicles mean reduced noise pollution.
Timescales	- **Medium to Long Term (2 to 5 years)** - The Council aims to investigate feasibility within the 2017-18 financial year and if deemed feasible introduce infrastructure by the end of 2018
Funding	- To be identified through feasibility studies but could be through OLEV Grant Funding, S.106 Agreements or CIL Funding as part of new developments.
Responsibility	- East Staffordshire Borough Council and Developers.
Barriers/Constraints	- Grant funding not guaranteed, neither are S.106 Agreements or CIL Funding. - Potential limited eligibility for some funding schemes due to strict specifications. - Some funding streams only cover part of the capital costs for installing infrastructure and not the ongoing running costs.

29. https://www.gov.uk/government/publications?departments%5B%5D=office-for-low-emission-vehicles

4.2.4 Investigation into Funding Streams for Bus Operators

East Staffordshire has three main bus operators within the borough, these are;-

- Arriva
- Midland Classic
- Trent Barton

The Council will work with Staffordshire County Council and the three main bus operators that have formed a Burton Voluntary Quality Network Partnership (BVNQP) by investigating the various funding streams to upgrade bus fleets. One funding route that will be looked at is the Low Emission Bus Scheme, which the Office for Low Emission Vehicles (OLEV) is setting up. The Low Emission Bus Scheme has three main objectives, these are;-

- **“** increase the uptake of low and ultra-low emission buses, speeding up the full transition to an ultra-low emission bus fleet in England and Wales, and reducing the need for subsidy support;
- support the improvement of local air quality. Buses are a significant contributor to the UK's air quality problems on some of its most polluted roads; and
- support OLEV’s commitment of attracting investment to the UK.”[27]

Up to £30 million of funding will be made available for the purchase of low emission buses and associated infrastructure. The window for grant funding opens in April 2016 and will run until the end of March 2019 inclusive. Grants will be awarded on a competitive bidding process.[30]

Another possible route for further funding and improvements could be through the Eco-Stars Recognition Scheme, which will also be investigated, as well as any other funding streams that may become available during the lifetime of this AQAP.

Action 10	**Investigation into Funding Streams for Bus Operators**
Air Quality Impact **Rating: Medium**	- Buses, particularly older models can have a disproportionate impact on nitrogen dioxide and particulate emissions, therefore the requirement for vehicles to meet or exceed Euro VI emission regulations could significantly reduce emissions and in turn have benefits to air quality.
Significance to AQMA's **Rating: Medium**	- A number of the main bus routes to the centre of Burton pass through the AQMA's; therefore any air quality benefits from the uptake of ultra low emission buses could have a medium significance to the AQMA's but also have benefits further afield.
Cost	- The physical cost of replacing vehicles would normally be **High** but if grants for funding are successful the costs to this Council and Bus Operators would be **Low** or **Negligible** (i.e. just administrative costs from providing the evidence base / making applications for grant funding)
Wider environmental and socio-economic impacts **Rating: Medium**	- Potential reduced operator costs from improved fuel management - Improvements in air quality will have benefits to health - OLEV estimate that ultra low emission vehicles could produce at least 15% less green house gas emissions than the average Euro V equivalent diesel bus of the same total passenger capacity. - Potential to expand into other Authorities
Timescales	- **Medium term (i.e. over the next 2 years)**

	- Initial meetings will be held in **September 2015** to introduce current funding streams to the BVNQP and potential recruitment through the Eco-Stars Scheme - Should the BVNQP be interested in participating the Council aims to assist the BVNQP in completing relevant applications for funding by **June 2016** and any other subsequent funding streams should the BVNQP be unsuccessful the first time round - Alternatively, should the BVNQP opt for the Eco-Stars Scheme the Council aims to have recruited them as full members by **June 2016**.
Funding	- Low Emission Bus Scheme, potentially Eco-Stars Recognition Scheme or any other Grant Funding that may become available
Responsibility	- East Staffordshire Borough Council in partnership with Staffordshire County Council and the BVNQP comprising Bus Operators Arriva, Midland Classic and Trent Barton
Barriers/Constraints	- Financially the risk is negligible but Bus Operators may perceive the scheme in a negative way or be reluctant to make changes.

30. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/413022/Low_Emission_Bus_Scheme_bidding_guidance.pdf

4.3 Behavioural Change

4.3.1 Partnership Working with Public Health

The impacts of air quality on health and mortality have firmly become an important agenda item in Public Health work since 2013. It is therefore important this Council works with its Public Health partners to raise awareness of the impacts of air quality on health to both the general public and health professionals. This Council will work with Public Health to develop information packs to provide advice regarding the air quality impacts on health and how individuals can reduce their exposure with a view to providing this information for further dissemination in GP Practices. Subject to available data, this Council will also map air quality against socio-economic indices such as social deprivation, hospital admissions and mortality to help focus work on those who may be more vulnerable to air pollution or could benefit the most from improvements in air quality.

Action 11	**Partnership Working with Public Health**
Air Quality Impact **Rating: Low**	- Nitrogen dioxide and particulate emission reductions from behavioural changes likely although the extent is unknown at this stage.
Significance to AQMA's **Rating: Medium**	- As the AQMA's present the poorest air quality and potentially greatest social deprivation, any partnership working will be prioritised to the AQMA's but other areas will also be considered.
Cost	- **Low.** Based on Officer time and administration costs
Wider environmental and socio-economic impacts **Rating: Medium**	- Optimise health and well-being of individuals - Promote alternative travel choices such as walking and cycling thus improving fitness - Potential carbon emission reduction
Timescales	- **Short to Medium Term** (to set up a working group and develop information packs by

	March 2017)
Funding	- East Staffordshire Borough Council's Environmental Health Budget
Responsibility	- East Staffordshire Borough Council's Environmental Health Department and Public Health England
Barriers/Constraints	- Resources, funding and data being available

4.3.2 Partnership Working with Staffordshire County Council in Promoting Sustainable Travel

Staffordshire County Council has dedicated Officers to promote sustainable travel modes across the whole County. This Council will support the County Council on partnership working with schools, businesses and the public. This will include assisting on initiatives such as walking buses for schools, promoting car sharing, participation in national events such as car free days and working with other external agencies such as Sustrans on helping individuals become more active and assistance on travel plans for businesses etc.

Action 12	**Partnership Working with Staffordshire County Council in Promoting Sustainable Travel Options**
Air Quality Impact **Rating: Low**	- Reduced car use means reduced nitrogen dioxide and particulate emissions - Will help to reduce overall background pollution levels
Significance to AQMA's **Rating: Low**	- Holistic approach that will apply to the whole borough and not just the AQMA's
Cost	- **Low**- Officer time and administrative costs from promotional material etc.
Wider environmental and socio-economic impacts	- Reduced carbon footprint - Fuel savings from reduced car use - Helps to encourage increased physical

Rating: Medium	activity, thus improving fitness, mental health and productivity, especially since in Burton excess weight in adults is nearly 72% compared with England (63.8%). - Improves awareness and education of alternative travel choices and how individuals can benefit the environment and their health. - Increased social interaction from initiatives
Timescales	- **Short to Long Term (Ongoing)** - The council aims to support at least 2 sustainable travel initiatives each financial year
Funding	- East Staffordshire Borough Council's Environmental Health Budget and Staffordshire County Council
Responsibility	- East Staffordshire Borough Council's Environmental Health Department, Staffordshire County Council and other bodies such as Sustrans
Barriers/Constraints	- Unlikely to pose many significant barriers or constraints, but some may be reluctant to make changes particularly if they feel they are being forced to.

4.3.3 Enhancement of the Council Website for Air Quality & Updating Leaflets and Other Council Publications

This Council will enhance the current air quality pages of the website to provide up to date legislative information and reports, information on health impacts and how members of the public can minimise their exposure as well tips on how they can reduce emissions. Links to maps of the main cycle and bus routes/stops within the borough will also be provided. The Council will also provide air quality data in a format that is easier for the public to understand.

Information leaflets and other publicity materials advertising Council amenities, services and events will also be updated to provide prominent information relating to access for visitors through non-car modes e.g. information on nearest bus stops, cycle paths etc. The Customer Service Centre located in the Town Centre is a useful focal point to provide this information to the public

Action 13	**Enhancement of the Council Website for Air Quality & Updating Leaflets & Other Council Publications**
Air Quality Impact **Rating: Low**	- Will help to support alternative modes of transport, thus working towards reducing car use and emissions but its air quality impact is likely to be fairly low compared to other measures in this AQAP
Significance to AQMA's **Rating: Low**	- Significance to the AQMA's will be fairly low as it applies to the whole borough
Cost	- **Low** as it will make use of existing resources therefore any costs to the Council will be administrative

Wider environmental and socio-economic impacts **Rating: Medium**	- Help encourage carbon emission reductions - Increased awareness within the community of the links between air quality and health - Help promote healthier/ active lifestyles through walking and cycling - Overall increased environmental awareness
Timescales	- **Short Term** (to complete the air quality web pages by **January 2016** and other publication material by **April 2016**)
Funding	- No additional funding required
Responsibility	- East Staffordshire Borough Council's Environmental Health Department
Barriers/Constraints	- Unlikely to pose many barriers or constraints, but care needs to be taken in conveying the message in a diplomatic manner that supports or encourages lifestyles changes rather than appearing to force people to change.

4.3.4 Ongoing Review of Air Quality Monitoring Network

The Council currently has 52 nitrogen dioxide diffusion tube sites within the borough as well as an automatic monitoring station located in the centre of the main AQMA (i.e. Derby Turn). The diffusion tube network will continue to be reviewed on an annual basis (i.e. December each year) to ensure each location is fit for purpose and cost effective according to changes in traffic, housing / employment growth and the findings of annual review & assessment reports.

As part of a Village Enhancement Scheme, four new diffusion tube sites were established in January 2015 in Barton under Needwood to assess air quality over a 12 month period. This was in relation to concerns about peak hour/school traffic flow through the main street. Barton Parish Council is actively involved in this.

Action 14	**Ongoing Review of the Air Quality Monitoring Network**
Air Quality Impact **Rating: Medium**	- Monitoring data provides the evidence base for justification of AQAP measures and will also assist in monitoring the effectiveness of AQAP measures.
Significance to AQMA's **Rating: Medium**	- Most of the monitoring locations are situated within the AQMA's but areas outside will also be considered in any review of the network.
Cost	- **Low.** Diffusion tubes for example cost relatively little compared to other forms of monitoring (i.e. £5 per tube) - The current nitrogen dioxide diffusion tube monitoring scheme in Barton under Needwood is being paid for by Barton Parish Council, whereby costs over a year will amount to £240.
Wider environmental and socio-economic impacts **Rating: Low**	- Potential to involve other Parish Council's and Local Community Groups in diffusion tube monitoring, thus increasing awareness of how their actions can affect air quality as well as making them feel more involved with the action planning process.
Timescales	- **Ongoing (short to long term)** - Monitoring network to be reviewed every December, starting in **December 2015**
Funding	- East Staffordshire Borough Council's Environmental Health budget, supplemented by any funding from Parish Councils if / when they become available
Responsibility	- East Staffordshire Borough Council's Environmental Health Department
Barriers/Constraints	- None perceived

4.3.5 Environmental Permitting

Unlike road traffic, the contribution to air pollution levels from industrial sources in East Staffordshire is far less. However, the Council currently regulates 48 installations with respect to emissions to air under the Environmental Permitting Regulations 2010 (as amended). The Council will continue to exercise its duties under this legislation, including identifying new sources as necessary, therefore it is important to include this as a measure within this AQAP.

Action 15	**Environmental Permitting**
Air Quality Impact **Rating: Medium**	- Tackles localised pollution issues /emission points.
Significance to AQMA's **Rating: Low**	- Regulated sites are distributed across the whole borough and not just in the AQMA's.
Cost	- **Low**
Wider environmental and socio-economic impacts **Rating: Low**	- Helps to reduce overall background pollution levels from a wider range of pollutants than just nitrogen dioxide and particulates. - Helps protect the health of those living, working and visiting the borough. - Helps protect ecology. - Helps encourage or inspire energy efficiency, thus cost savings.
Timescales	- Permitting of existing regulated processes is ongoing, but identification of potential new sites that require regulating will be implemented each summer, with the first review aimed for completion by **August 2016**.
Funding	- East Staffordshire Borough Council's Environmental Health Budget
Responsibility	- East Staffordshire Borough Council's Environmental Health Department

Barriers/Constraints	- Potential for negative perception or resistance from Operators from any additional costs that may be required under the legislation such as additional abatement etc.

5 Evaluation & Monitoring Progress of Action Plan Measures

It is important to have a flexible and realistic approach to action planning, especially in light of resource and budget constraints. This Council proposes to keep this AQAP under periodic review throughout its lifetime of five years and modify when the need arises.

A number of the measures identified in this AQAP are at very early stages of development and will require a significant amount of feasibility research work to determine how viable they will be. Furthermore, this Council is not a unitary Authority and is therefore reliant on Staffordshire County Council and Highways England in delivering all of the strategic transport measures in this AQAP with the exception of the Eco-Stars Scheme.

The Integrated Transport Strategy 2014 will also be reviewed by the County Council on a periodic basis in line with adoption of the Local Plan. It is therefore important to keep close ties with the County Council to ensure any amendments or new measures support improvements in air quality and modify the AQAP accordingly.

Equally it is important to be aware of new opportunities that may come to light over the next five years, where air quality improvements can be sought, as well as taking advantage of any new grant schemes to help fund measures.

To determine the effectiveness of the AQAP at this stage is very difficult, due to factors already discussed in terms of quantifying air quality emissions, particularly with the ‘soft’ measures and the County Council Strategic measures where traffic data is limited at present. However, this AQAP has identified a package of measures that aims to enable most, if not all locations within the two AQMA’s comply with the nitrogen dioxide objectives within the shortest possible time, as well as enabling particulate and carbon emission reductions across the borough.

The Council's monitoring regime will continue to assess air quality both within and outside of the AQMA's, which will help demonstrate the overall effectiveness of the measures proposed in this AQAP as well as the benefits from national measures. This Council aims to work closer with Staffordshire County Council and Highways England to try and quantify the benefits of their measures better through increased traffic counts, modelling etc., over the long term.

It is a requirement to report to the Secretary of State (i.e. Defra) on a regular basis with respect to progress in implementing AQAP measures, any improvements in air quality made and the challenges experienced. The Council will produce an Annual Progress / Monitoring Report each year. Furthermore the Eco-Stars Recognition Scheme will involve quarterly Progress Reports from TTR and then at the end of the first year (i.e. Spring 2016) the Staffordshire Consortium is required to provide an annual progress report to Defra on how the grant money has been spent, the effectiveness of the scheme and estimates of any air quality benefits and cost savings.

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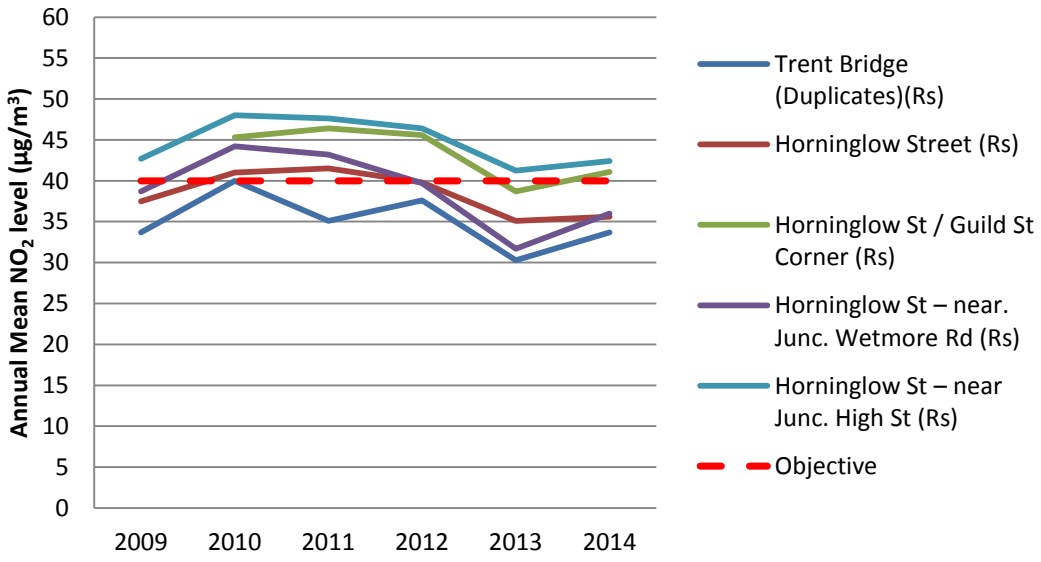
29. Office for Low Emission Vehicles (OLEV). Grant Schemes. (https://www.gov.uk/government/publications?departments%5B%5D=office-for-low-emission-vehicles)

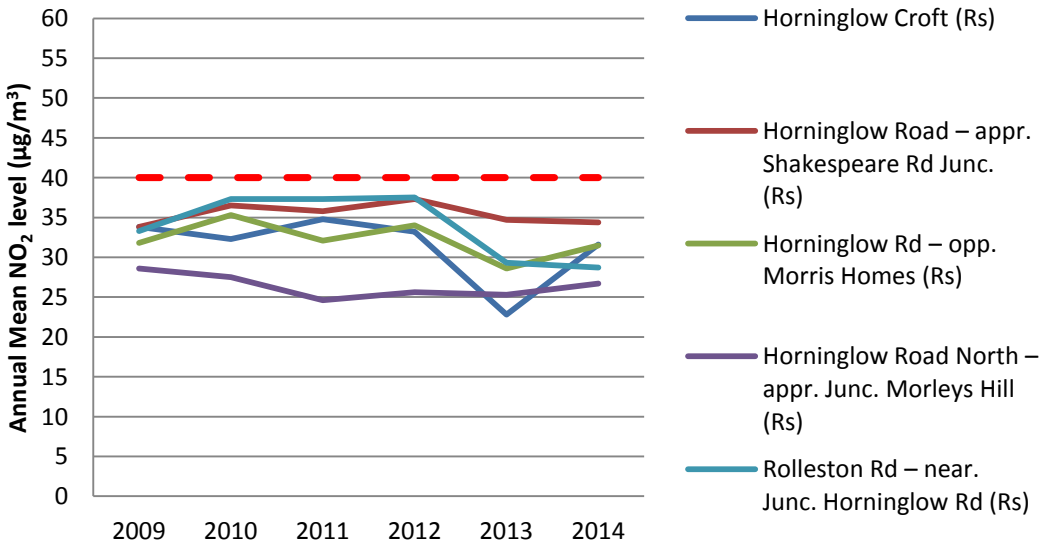
30. Office for Low Emission Vehicles (OLEV). Low Emission Bus Scheme: Guidance for Participants – March 2015 (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/413022/Low_Emission_Bus_Scheme_bidding_guidance.pdf)

7 Appendix 1: NO_2 trends for individual monitoring locations within the AQMA's

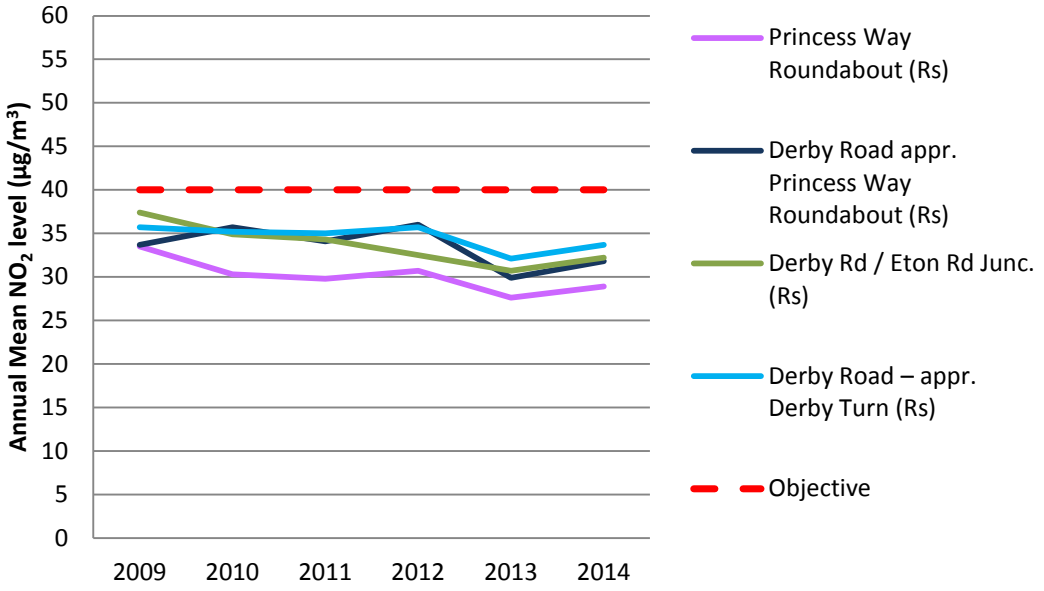
Appendix 1(a): Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube sites along the Horninglow Street section of the AQMA.



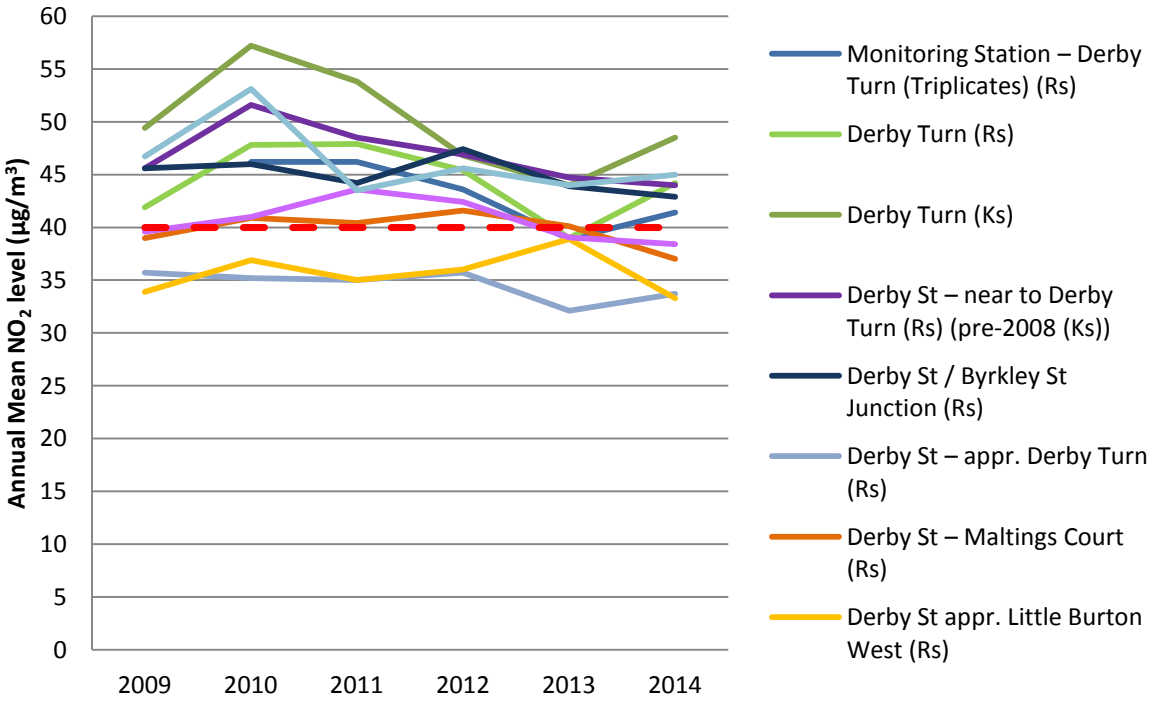
Appendix 1(b): Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube sites along the Horninglow Road section of the AQMA.



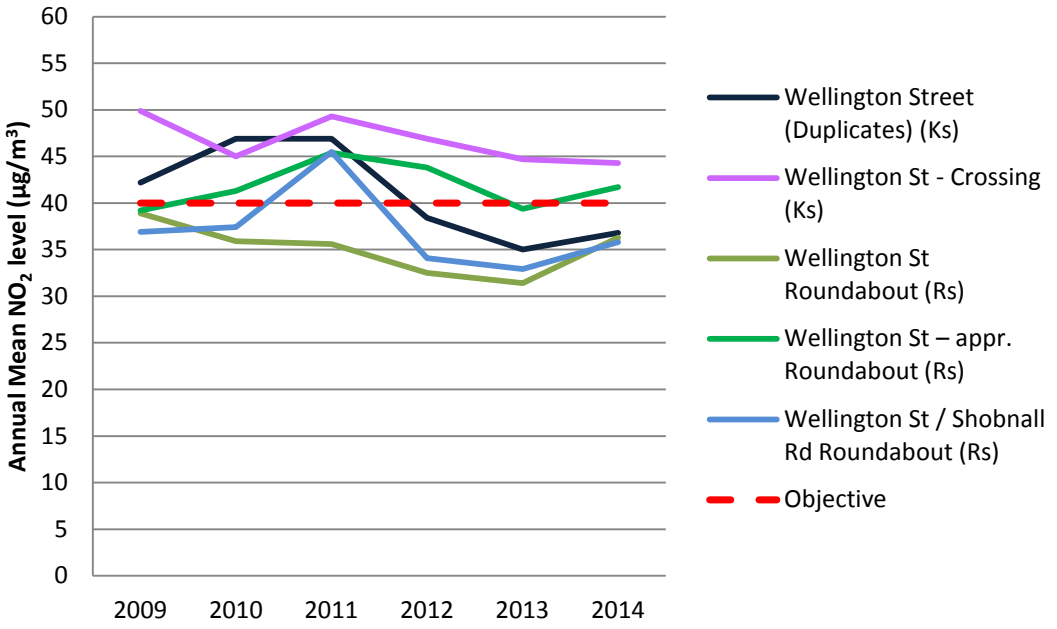
Appendix 1(c): Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube sites along the Derby Road section of the AQMA.



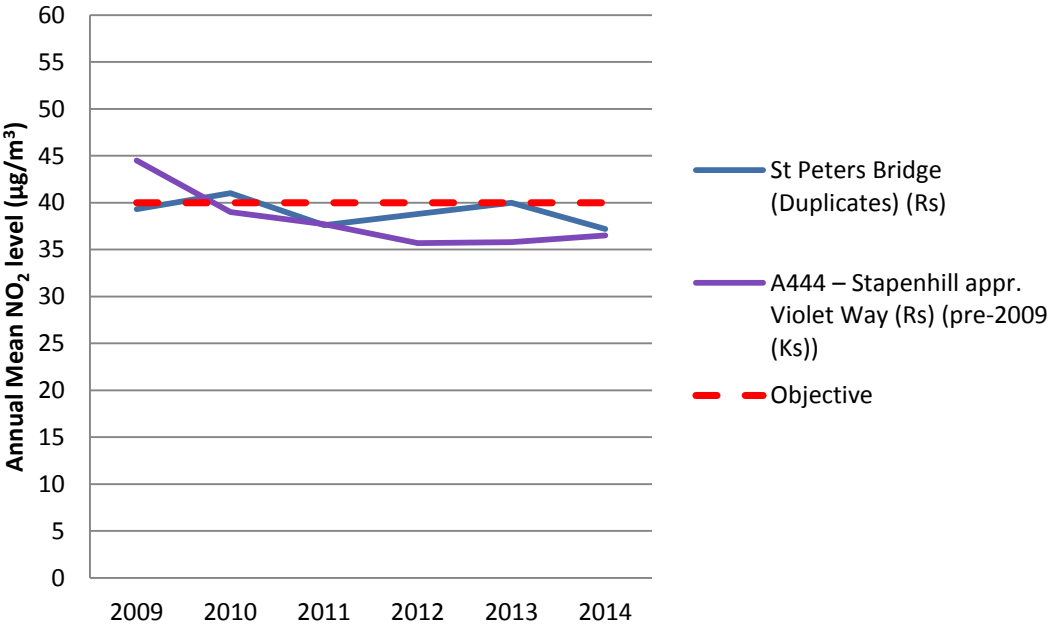
Appendix 1(d): Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube sites along the Derby Street, including Derby Turn and the Borough Road / Derby Street / Byrkley Street / Waterloo Street gyratory section of the AQMA.



Appendix 1(e): Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube sites along the Wellington Road section of the AQMA.



Appendix 1(f): Trends in Annual Mean NO_2 Concentrations Measured at Diffusion Tube sites within the small St Peters Bridge Roundabout AQMA.



8 Appendix 2: Summary of AQAP Measures

Measure	Air Quality Impact	Cost	Wider Environmental & Socio-Economic Impact	Timescales	Output
Strategic Transport Measures					
Action 1: Walton on Trent Bypass (Third River Crossing)	Medium–High	High	Low-Medium	Long Term	TBC (subject to development progress of Drakelow Village)
Action 2: Town Centre Traffic Management Package	Medium-High	Medium-High	Medium	Medium – Long Term	TBC (subject to funding & feasibility)
Action 3: Improved Bus Provision / Services	Low-Medium	High	Medium	Short – Long Term	RTPI to be implemented by end of 2016 and other service improvements by 2020
Action 4: A5189 / A444 Network Reinforcement & Enhanced Cycling / Pedestrian Facilities	Low	High	Medium	Short – Long Term	TBC (subject to funding & feasibility)
Action 5: Local Transport Corridors	Medium	High	Medium	Long Term	TBC (subject to funding & feasibility)
Action 6: Eco-Stars Recognition Scheme	Medium	High	Medium	Short – Medium Term	By April 2017

Measure	Air Quality Impact	Cost	Wider Environmental & Socio-Economic Impact	Timescales	Output
Policies & Feasibility Studies					
Action 7: Development Control Policy for Air Quality Management & Subsequent Environmental Supplementary Planning Guidance	High	Low	High	Short Term	December 2015 for Development Control Policy for Air Quality Management & December 2016 for the Supplementary Planning Guidance
Action 8: Investigation of Feasibility for S.106 Obligations and Community Infrastructure Levy Funding for Air Quality	Medium	Medium to High	High	Short Term	December 2016
Action 9: Feasibility Study for Low Emission Vehicles and Associated Infrastructure	Low-Medium	Medium	High	Medium – Long Term	December 2018
Action 10: Investigation into Funding Streams for Bus Operators	Medium	Low	Medium	Medium Term	Initial Discussions September 2015 Application for funding or recruitment to Eco-Stars by June 2016

Measure	Air Quality Impact	Cost	Wider Environmental & Socio-Economic Impact	Timescales	Output
Behavioural Change					
Action 11: Partnership Working with Public Health	Low	Low	Medium	Short – Medium Term	March 2017
Action 12: Partnership Working with Staffordshire County Council in Promoting Sustainable Travel	Low	Low	Medium	Short – Long Term	To support at least 2 sustainable travel initiatives each year
Action 13: Enhancement of the Council Website for Air Quality & Updating Leaflets & Other Council Publications	Low	Low	Medium	Short Term	January 2016 for the website & April 2016 for other publications
Action 14: Ongoing Review of the Air Quality Monitoring Network	Medium	Low	Low	Short – Long Term	Annually each December
Action 15: Environmental Permitting	Medium	Low	Low	Short – Long Term	Ongoing