Air Quality Action Plan

Dudley MBC

February 2010

Consultation Draft Version 1.1

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Executive Summary

This Air Quality Action Plan fulfils the requirements of the Local Air Quality Management process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents.

Dudley Metropolitan Borough Council declared a borough wide Air Quality Management Area (AQMA) in December 2007 with respect to possible exceedences of the annual mean air quality objective and short term 1-hour objective for nitrogen dioxide (NO_2) in several areas across the borough.

Further Assessment has enabled the council to confirm exceedences of the annual mean NO_2 objective at fifteen separate locations, thereby justifying the decision to declare the borough wide AQMA and prepare the current action plan, which addresses poor air quality in the following areas:

- Netherton
- Cradley
- Pensnett
- Sedgley
- Brierley Hill
- Quarry Bank
- Hagley Road, Halesowen
- Wordsley
- Lye
- New Street, Dudley
- Himley Road, Lower Gornal
- Stourbridge Road, Halesowen
- Amblecote
- Birmingham Road near to Burnt Tree Island
- Buffery Road

The major factors contributing towards poor air quality in these locations have been identified as high traffic flows, emissions from stationary and queuing traffic, gradients in excess of 2.5%, residential properties located close to the road and within '*street canyons*', where tall buildings are found on both side of the road in close proximity to the rear-of pavement. Significant NO_2 contributions from HGVs and/or buses and coaches were also identified in all of the areas.

The action plan focuses on measures to reduce traffic congestion, improve the public transport offering, change peoples' travel patterns, minimise residential exposure and reduce regional background concentrations with a number of initiatives which will be led by Dudley Council. The action plan describes a number of potential air quality improvement actions which have been assessed on the basis of cost, effectiveness and delivery timescales. The plan provides further details on both the options which were rejected from further consideration and those which will be progressed as part of eight key improvement areas:

- Road Network Improvements
- Improving Public Transport & Rail Freight Capabilities
- Reducing Vehicle Emissions
- Land Use Planning Initiatives
- Industrial, Commercial and Domestic Actions
- Promoting Information and Education
- Encouraging Modal Shift
- Leading By Example

Delivery of the plan will be measured against a number of proposed key performance indicators. A conservative estimate of compliance timescales has been undertaken as part of the Detailed Assessment and indicated that 9 of the 15 areas are likely to achieve compliance within the short-medium timescale associated with the lifetime of the next generation Local Transport Plan. Positive intervention via the action plan will allow timescales to be further accelerated in many of these and the remaining six areas.

Table of Contents

1 Introduction 1

1.1 Description of Local Authority Area 1
1.2 Purpose of Action Plan 2
1.3 Air Quality Objectives 4

2 Background 5

2.1 Summary of Previous Review and Assessments 5
2.2 Declaration of Dudley Borough AQMA 6
2.3 Action Planning Approach 8

3 The Wider Policy Context 9

3.1 National Policy 9
3.2 Regional Policy 11
3.3 Sub Regional Policy 12
3.4 Local Policy 14

4 Other Related Projects and Programmes 19

4.1 The Healthy Towns Project 19
4.2 DMBC Climate Change Delivery Plan 19
4.3 DMBC Carbon Management Programme 19
4.4 Local & District Centre Regeneration Plans 19

5 Further Assessment of Air Quality 21

5.1 Review of Assessment Findings 21
5.2 Source Apportionment Contributions 21
5.3 Evaluation of Other Contributory Factors 23
5.4 Required Reductions in Emissions of Nitrogen Oxides 23
5.5 Estimated Compliance Timescales 24

6 Designing the Action Plan 25

6.1 General Aims 25
6.2 Rejected Options 25
6.3 Actions for Further Consideration 26
6.4 Evaluation of Proposed Actions 26

7 Proposed Actions 27

7.1 Action DAQAP1: Road Network Improvements 27
7.2 Action DAQAP2: Improving Public Transport & Rail Freight Facilities 30
7.3 Action DAQAP3: Reducing Vehicle Emissions 31
7.4 Action DAQAP4: Land Use Planning Initiatives 33
7.5 Action DAQAP5: Industrial, Commercial and Domestic Actions 34
7.6 Action DAQAP6: Promoting Information and Education 36
7.7 Action DAQAP7: Encouraging Modal Shift 37
7.8 Action DAQAP8: Leading By Example 39

8 Conclusions 40

9 References 41

10 Glossary and Abbreviations 42

Figures

Figure 1	Geographical setting of Dudley MBC	1
Figure 2	Dudley Transportation Network	3
Figure 3	Dudley Borough AQMA	7
Figure 4	The DMBC Air Quality Action Plan In The Wider Policy Context	10

Tables

Table 1	Air Quality Objectives	4
Table 2	Previously Published LAQM Reports	5
Table 3	**Areas Addressed by the Further Assessment**	7
Table 4	Dudley Transport Strategy Policies and Objectives	16
Table 5	DMBC Local and District Centre Regeneration Programme	20
Table 6	**NO_2 Source Apportionment for 15 Receptor Locations in Dudley Borough**	22
Table 7	**Evaluation of Contributory Factors**	23
Table 8	Summary of Required % Reduction in Road NOx Values	24
Table 9	Estimated Compliance Timescales	24
Table 10	Action Plan Themes	26

Appendices

Appendix 1 Proposed Layout of Road Scheme for Area 1, Netherton

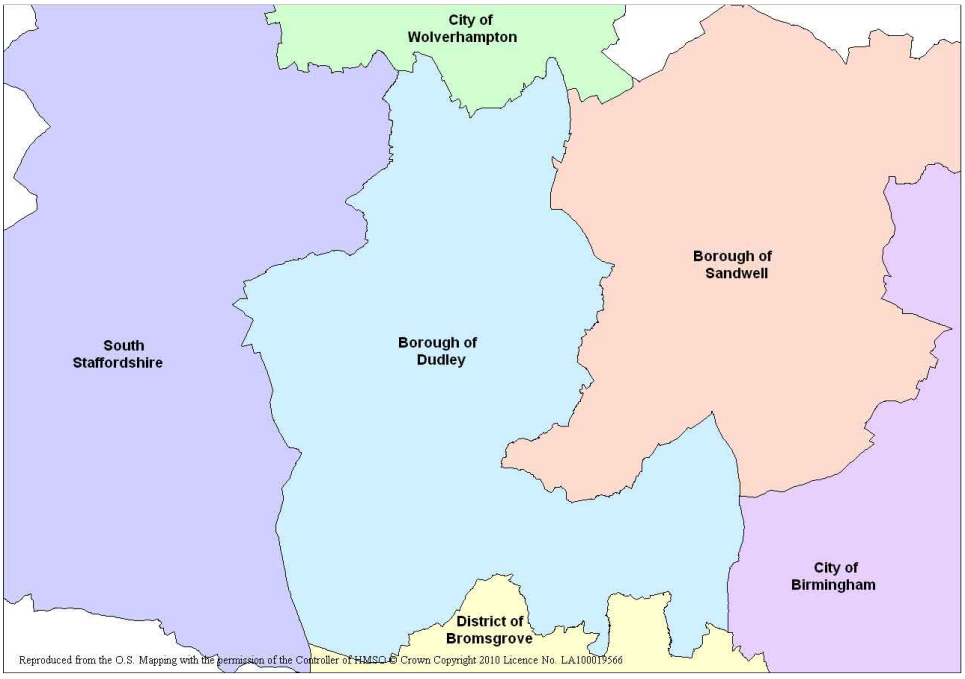
Appendix 2 Proposed Layout of Road Scheme for Area 12, Burnt Tree Island

1 Introduction

1.1 Description of Local Authority Area

Dudley Metropolitan Borough is located centrally in the UK and is surrounded by five other local authorities, namely Sandwell Metropolitan Borough Council (MBC) to the west. Wolverhampton City Council to the north and north west, South Staffordshire Council to the east, Bromsgrove District Council to the south and Birmingham City Council to the south east. The geographical setting is illustrated in Figure 1.

Figure 1 Geographical setting of Dudley MBC



The borough is located within the West Midlands (WM) conurbation, being densely populated with areas of concentrated industry. The six other authorities which comprise the Metropolitan Area include the cities of Birmingham, Coventry and Wolverhampton and the boroughs of Sandwell, Solihull and Walsall. Historically, Dudley MBC has worked closely with the six other WM Authorities in tackling regional air pollution issues as part of the joint WM air quality group (WMAQG).

Dudley Borough covers 9,821 hectares and has a population of approximately 310,000. Along with Walsall, Wolverhampton and Sandwell, Dudley forms part of the Black Country. This is an amalgamation of villages and towns located along the western side of the conurbation which developed during the industrial revolution to create a continuous urban area; typical examples in Dudley include the towns of Halesowen, Stourbridge and Brierley Hill.

The main sources of air pollution in the borough include transportation, emissions from the commercial and domestic sector and local industry.

There are currently over 130 industrial processes operating within Dudley that are regulated under the Environmental Permitting Regulations. These include:

- Eleven Part A1 Processes regulated by the Environment Agency including waste management, combustion, metal processing, chemical processing and carbon regeneration activities, and:

- Six Part A2 Processes comprising 3 manufacturers of ceramic products, 2 ferrous foundries, 1 non-ferrous foundry and over 120 Part B Processes. These categories are currently regulated by Dudley MBC (DMBC).

Further information on the nature and location of processes regulated by DMBC can be obtained via the following link:

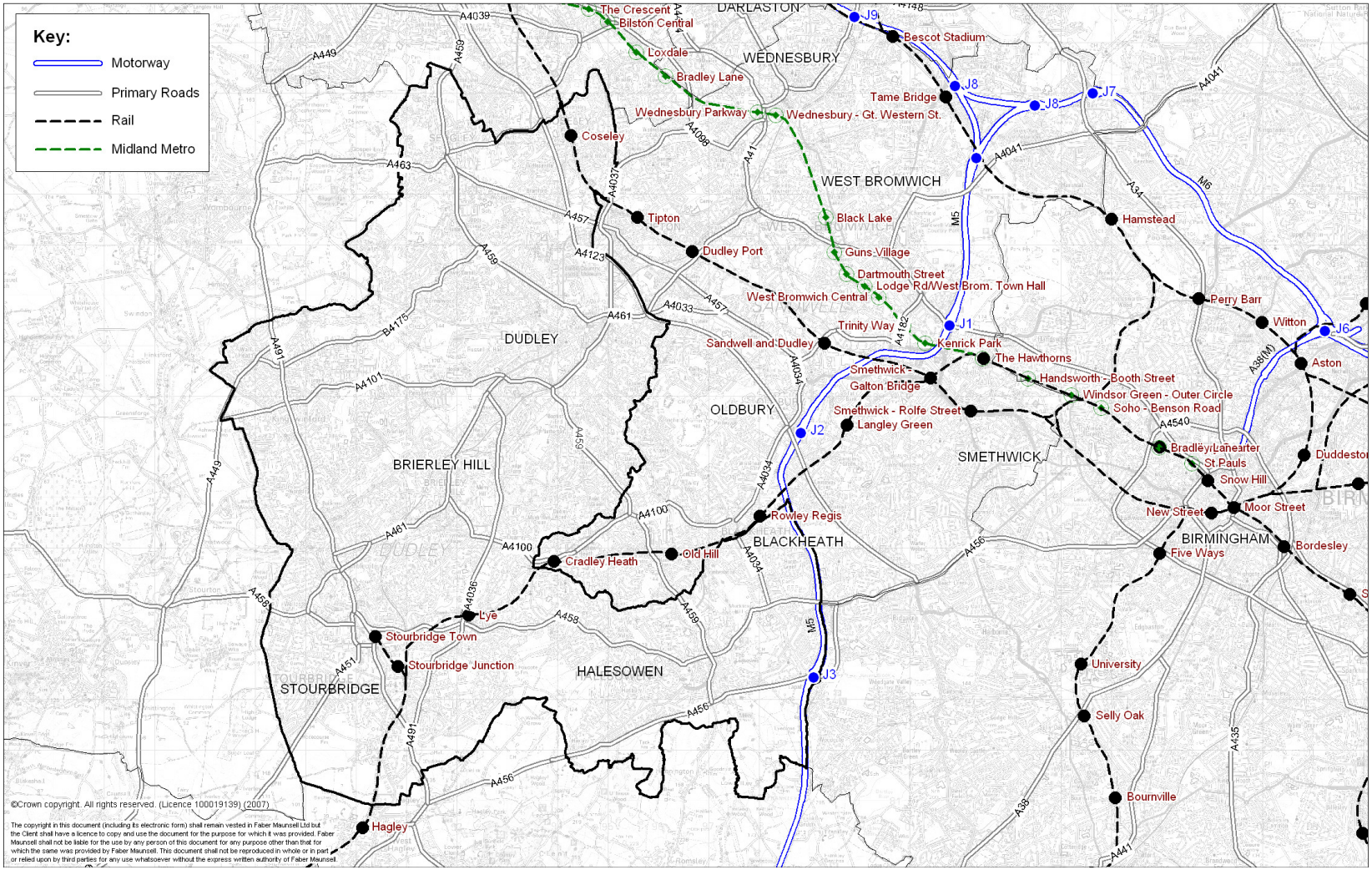
http://gismo.dudley.gov.uk/public/envProt/Permits/Default.asp

Emissions from these sources are carefully controlled under the current regulatory regime. This leaves the transportation sector as the main source of local airborne pollution, particularly exhaust emissions from road traffic. Dudley's transportation network is illustrated in Figure 1 and shows the layout of A roads, railway lines and M5 motorway which pass through the borough. The areas of highest pollution are typically associated with areas where residential properties and other buildings are located within close proximity to heavily trafficked or congested roads.

1.2 Purpose of Action Plan

This Air Quality Action Plan (AQAP) fulfils the requirements of the Local Air Quality Management (LAQM) process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents. The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives (AQOs) are likely to be achieved. Where exceedences are considered likely, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an AQAP setting out the measures it intends to put in place in pursuit of the AQOs.

Figure 2 **Dudley Transportation Network**



1.3 Air Quality Objectives

The AQOs applicable to LAQM **in England** are set out in the Air Quality (England) Regulations 2000 (SI 928) and The Air Quality (England) (Amendment) Regulations 2002 (SI 3043) which are shown in Table 1. This table shows the AQOs in units of micrograms per cubic metre µg/m^3 (milligrammes per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

Table 1 Air Quality Objectives

Air Quality Objectives			
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

A further AQO relating to ozone is also included in these regulations; however, this is considered as a long range, transboundary pollutant, therefore responsibility is administered at central government rather than local authority level.

2 Background

2.1 Summary of Previous Review and Assessments

The latest technical and policy guidance documents LAQM.TG (09) and LAQM.PG(09), issued in February 2009 by the Department of the Environment, Food and Rural Affairs (DEFRA), set out timescales for submission of the air quality documents required under the LAQM regime [1,2].

The Review & Assessment programme is set out in 3 year cycles and commenced in 2000. DMBC has published a number of documents as part of its ongoing statutory LAQM obligations (Table 2) and previous Review & Assessment reports can be downloaded from DMBC website via the following link:

http://www.dudley.gov.uk/environment--planning/pollution-control/air-quality

Table 2 Previously Published LAQM Reports

Dudley LAQM Key Documents			
Year	**Title**	**Submission Date**	**LAQM Details**
2003	Updating & Screening Assessment	Apr-2003	Round 2
2004	Detailed Assessment	Apr-2004	Round 2
2005	Annual Progress Report	Apr-2005	Round 2
2006	Updating and Screening Assessment	May-2006	Round 3
2007	Detailed Assessment	Jun-2007	Round 3
2008	Annual Progress Report	May-2008	Round 3
2009	Updating & Screening Assessment	Jul-2009	Round 4

During the previous rounds of Review & Assessment, DMBC declared its first AQMA in 2003 following confirmation of exceedences of the annual mean nitrogen dioxide (NO_2) AQO in the Brierley Hill area. NO_2 is one of the oxides of nitrogen (NOx) identified as having an adverse affect on health by the World Health Organisation. Oxides of nitrogen can be generated by any combustion process including electricity generation, commercial and domestic heating or by the internal combustion engine.

Following identification of non compliance areas in Brierley Hill, an action plan was published in 2004 which contained a number of key measures to improve air quality. These included the construction of a new parallel route and implementation of local travel plans as part of the Brierley Hill Sustainable Access Network (BHSAN). The parallel route was substantially completed in October 2008 and monitoring of air quality and other proxy indicators continues within the Brierley Hill area to establish the extent of any further remedial actions, which will now be addressed as part of the new AQAP. Further details are given in the 2009 Brierley Hill AQAP Progress Report [3].

Following the 2004 Detailed Assessment, DMBC declared a second AQMA in Sedgley in May 2005. Dispersion modelling work confirmed that the most efficient means of improving air quality to meet the government AQO would be to construct an eastern parallel route which bypasses the congested 5-way traffic island, Sedgley Bullring. Practical and financial considerations indicated that this option would be undeliverable and DMBC came to the conclusion that air quality concerns could only be addressed via an AQAP for the wider area.

The 2006 USA Report identified a further six areas of exceedence of the annual mean NO_2 AQO. These had been monitored during a 12 month period of Detailed Assessment prompted by the 2005 Annual

Progress Report and included areas of Netherton, Cradley, Halesowen, Wordsley, Pensnett, Quarry Bank and Lye.

The 2007 Detailed Assessment confirmed these and a number of additional new exceedences in Halesowen and Lower Gornal. At this stage, DMBC proposed the creation of a new borough wide AQMA to include the amalgamation of the two existing AQMAs in Brierley Hill and Sedgley. These proposals were subject to consultation with the general public, external stakeholders and via DMBC's local area committee meetings. DEFRA also endorsed these proposals in their feedback on the 2007 Detailed Assessment Report.

Since the completion of the 2007 Detailed Assessment, DMBC has continued to monitor air quality at over 150 separate locations around the borough. The most recent results from the monitoring programme are presented in the 2009 USA [4], and a Further Assessment of Air Quality [5] which has been prepared to provide technical focus for the action plan.

2.2 Declaration of Dudley Borough AQMA

The Dudley Borough AQMA was declared in December 2007 with respect to exceedences of both the annual mean and short term NO_2 AQOs. The declaration revoked the former AQMAs in Brierley and Sedgley, thereby enabling DMBC to adopt a more consolidated approach towards the action planning process.

At the time of the declaration, only exceedences of the annual mean NO_2 AQO had been confirmed by DMBC's monitoring programme; this AQO is mainly used as a guidance level in assessing risks to residential receptors. However, levels of greater than 60µg/m^3 NO_2 were recorded at two of the exceedence locations. Technical and policy guidance available at that time (LAQM.TG (03) and LAQM.PG (03)) suggested that NO_2 concentrations above this level may give rise to additional exceedences of the short term AQO, creating additional risks for receptors that might be exposed for periods of one hour or more (e.g. people shopping in a busy street or sitting at a pavement café). The AQMA declaration therefore included exceedences of both NO_2 AQOs as a precautionary measure until further work could be undertaken to investigate possible exceedences of the short term AQO.

LAQM.TG (09) states that once a new AQMA has been declared, all Local Authorities must complete a Further Assessment within 12 months of designation; this provides the evidence base to support the declaration of the AQMA and additional supporting technical information. An extension to the specified timescale has been agreed with DEFRA to enable DMBC to fully assimilate the latest requirements of LAQM.TG (09) and to utilise the information contained within the WM Local Authorities Emissions Data Base (WMEDB), which was fully revised during 2009 as part of a DEFRA funded project. The Further Assessment supplements the information provided in DMBC's 2007 Detailed Assessment and the subsequent LAQM reports listed in Table 2. The Assessment has confirmed the exceedences of AQOs flagged up during the 2007 Detailed Assessment and subsequent technical investigations, defines what improvement in air quality and corresponding reduction in emissions is required to attain the AQOs and provides technical information on relevant source contributions. The Further Assessment has provided a detailed examination of air quality at the locations identified in previous reports together with additional two additional areas in the vicinity of Buffery Road and Burnt Tree Island. A full description of the fifteen areas covered by the assessment and addressed via the action plan is given in Table 3.

Dudley MBC - England

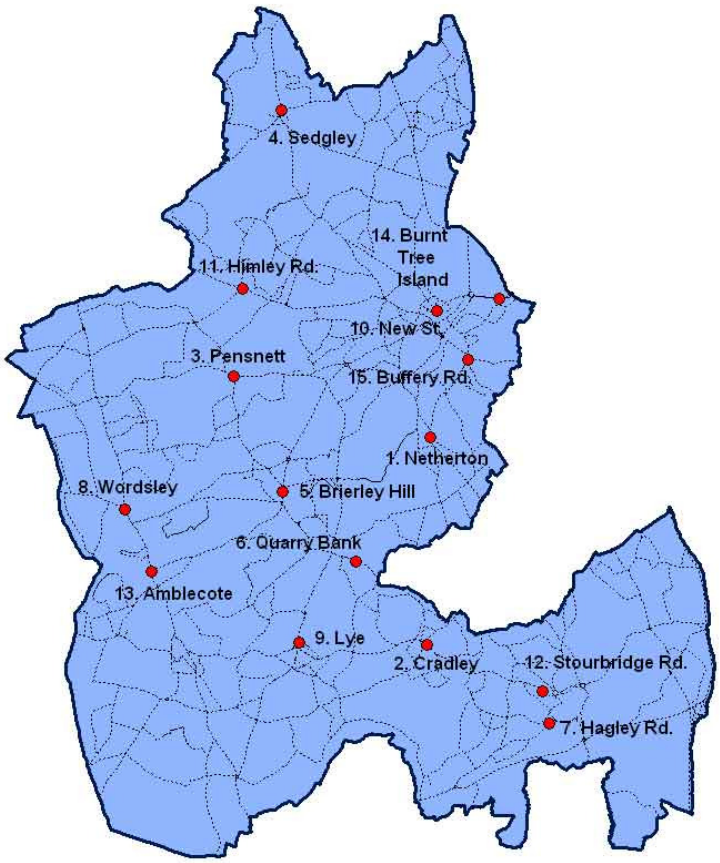
Table 3 Areas Addressed by the Further Assessment

DMBC NO_2 Exceedence Areas	
Area	**Description**
1	Netherton
2	Cradley
3	Pensnett
4	Sedgley
5	Brierley Hill
6	Quarry Bank
7	Hagley Road, Halesowen
8	Wordsley
9	Lye
10	New Street, Dudley
11	Himley Road, Lower Gornal
12	Stourbridge Road, Halesowen
13	Amblecote
14	Birmingham Road near to Burnt Tree Island
15	Buffery Road

It should be noted that areas 4 and 5 relate to the previously declared separate AQMAs in Brierley Hill and Sedgley, but both AQMAs were revoked and subsequently amalgamated into the Dudley Borough AQMA 2007.

Figure 3 illustrates the extent of the current AQMA as defined by the Dudley Borough boundary and indicates the position of the 15 locations covered by the action plan.

Figure 3 Dudley Borough AQMA



2.3 Action Planning Approach

LAQM.PG (09) suggests that the AQAP should address the following issues:

- Quantification of the source contributions to the predicted exceedences of the limit values. This allows the action plan measures to be effectively targeted.
- Evidence that all available options have been considered
- An indication of how the council will use its powers and also work together with others in the pursuit of the relevant AQOs.
- Clear timescales within which the authority and other organisations propose to implement the measures contained within the plan.
- Quantification of the expected impacts of the proposed measures and, where possible, an indication as to whether these will be sufficient to meet the AQOs, and:
- How the local authority intends to monitor and evaluate the effectiveness of any plan

These requirements have therefore been integrated into the development of this AQAP by DMBC. In declaring the whole borough as an AQMA, the Council considers that problems associated with road traffic and transportation can be dealt with in a more integrated fashion across a broader geographical area and this is particularly important in the wider context of land use and transport planning. Naturally, there is a requirement that any options taken forward as part of the plan must retain full compatibility with the wider policy framework including national and regional transport and land use planning policy. Further details are provided in Section 3 of the Action Plan.

3 The Wider Policy Context

The links between the AQAP and national, regional and local policies are set out in Figure 4. This shows how the development of the plan has been influenced by national and regional policy and how other initiatives implemented at all policy levels are contributing towards air quality improvements.

This section provides further background information on those policies or other initiatives which have had a direct bearing on the development of the AQAP. In developing the action plan, DMBC has set out a number of key themes and has highlighted links into other relevant projects or programmes wherever it has been appropriate to do so. Examples of some of these projects are provided in Section 4.

3.1 National Policy

3.1.1 The National Air Quality Strategy (NAQS)

The Government's Air Quality Strategy, first published in 1997 and revised in 2007, highlights the importance of the planning system for improving air quality [6]. A number of guidance documents provide advice to planning authorities, developers and other interested parties on issues related to air quality and new developments.

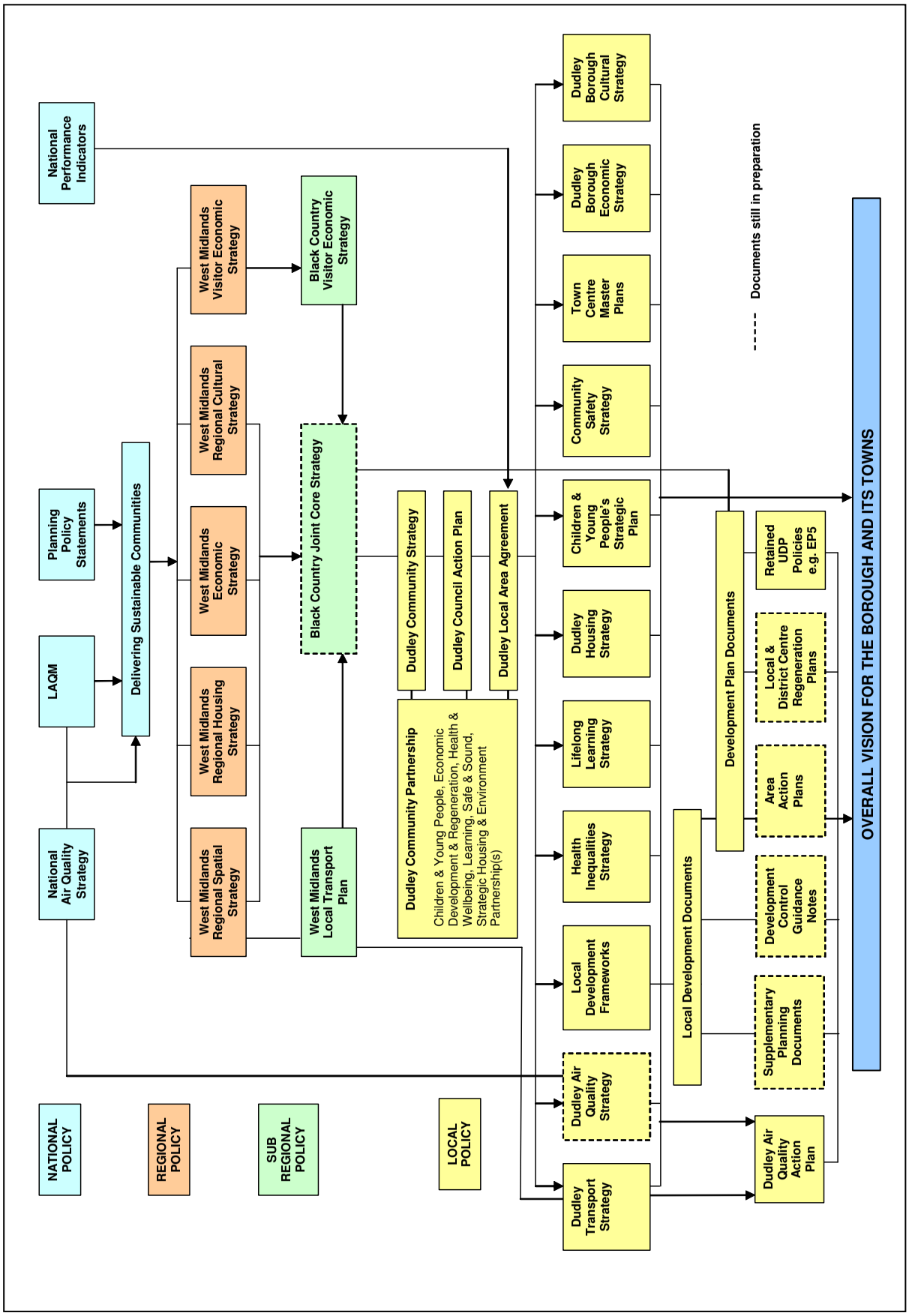
3.1.2 Planning Policy Statement 1 Delivering Sustainable Development (PPS1)

PPS1 sets out the Government's overarching planning policies on the delivery of sustainable development via the planning system. It states that planning policies and decisions should be based on the potential impacts of development proposals on the environment, and recognises that irreversible damage may be caused if the scale of development exceeds threshold limits. It advocates that planning policies should address environmental issues such as climate change by promoting the use of renewable energy and reducing emissions of greenhouse gases and other atmospheric pollutants. Additionally, the Supplement to PPS1, *Planning and Climate Change*, sets out the role of planning in reducing emissions and stabilising climate change by delivering patterns of urban growth that will help to secure the fullest possible use of sustainable transport for moving freight, public transport, cycling and walking.

3.1.3 Planning Policy Statement 23 Planning and Pollution Control (PPS23)

PPS 23 recognises the role of the planning system in combating pollution. This PPS states that "*pollution issues must be taken into account as appropriate within planning decisions*". The document emphasises the importance of national AQOs and AQMAs in relation to planning decisions and calls for the planning process to be a 'more strategic, proactive force for economic, social and environmental well-being' in terms of air quality. PPS23 Annex 1, Circular 05/05 and Section 106 Agreements provide guidance on the use of planning conditions and obligations (section 106 Agreements) to ensure that the impact of the development on local air quality is addressed and minimised.

Figure 4 The DMBC Air Quality Action Plan In The Wider Policy Context



3.2 Regional Policy

The Regional Guidance and Strategies with greatest impact on Dudley's transport and air quality issues include The WM Regional Spatial Strategy (WMRSS) and The WM Regional Economic Strategy (WMRES).

3.2.1 The West Midlands Regional Spatial Strategy

The strategy was first issued as Regional Planning Guidance (formerly known as RPG11) in 2004. The final version of the WMRSS was published in 2008 and included a Phase One Revision to accommodate the requirements of the Black Country.

The WMRSS identifies a number major challenges facing the region including the development of major urban areas to counter the unsustainable outward movement of people and jobs facilitated by previous strategies and modernising the transport infrastructure to support sustainable development. Chapter 8 of the WMRSS focuses on Quality of the Environment and provides further guidance on air quality issues.

Policy QE4: Greenery, Urban Spaces and Public Spaces states that:

- *Local Authorities should encourage patterns of development which maintain and improve air quality*.

Furthermore, paras 8.45 and 8.46 reflect the importance of air quality and the links with local transport and land use planning:

- *The Environment Act 1995 provides a statutory framework for LAQM. Local authorities are required to review and assess air quality in their areas against AQOs set out in the NAQS for England, Scotland, Wales and Northern Ireland. Although air quality in the Region is improving, local authorities with poor air quality may need to declare AQMAs and to produce action plans to reduce air pollution to meet national standards. Reducing the need to travel will play a key part in this and regional and local planning policies, together with transport plans, must play their part in helping reduce air pollution throughout the region. In developing these plans consideration should be given to how any adverse effects from development on air quality night be mitigated, such as by appropriate tree planting (see policy QE8).*
- *Local and sub-regional air quality reviews and assessments, AQMAs and action plans need to be taken into consideration in developing planning policy. For the review of this RPG the Regional Planning Board should identify the areas are likely to be of regional significance, assess their implications and where appropriate, set out policies and measures to assess them.*

The WMRSS also contains the Regional Transport Strategy (RTS) which reflects government guidance and the plans of the Highways Agency and the former Strategic Rail Authority. The RTS provides a spatial framework which has helped in the preparation of key documents such as the the current WM Local Transport Plan (WMLTP2) and Dudley's Transport Strategy and Parking Standards and Travel Plans Supplementary Planning Document (SPD).

The RTS identifies a number of investment priorities that will have positive impacts on air quality including:

- Measures aimed at achieving behavioural change
- Active Traffic Management for the M5 / M6 / M42 Midland Motorway Box
- Development of Bus Showcase / Quality Bus networks
- Red Route network development
- Metro extension from Wednesbury to Brierley Hill
- Further Metro extensions in the Birmingham and Black Country conurbation

3.3 Sub Regional Policy

3.3.1 The West Midlands LTP

LTPs normally cover a period of 5 years and are public documents that set out the highway authority's policies, strategies, objectives and targets for improving transport in their communities. The first round of LTPs covered the five-year period from 2001/02 to 2005/06 and the current transport plan, WMLTP2, covers the period from 2006/07 to 2010/11. WMLTP3 will cover the period between 2010/11 and 2015/16 and is currently under development.

WMLPT2 sets out a strategy, objectives, targets and an investment programme focused on the *Transport Shared Priority.* This is one of seven shared priorities agreed between national and local government, designed to improve public services. The four themes of the Transport Shared Priority include:

- Tackling Congestion
- Delivering Improved Accessibility
- Improving Road Safety
- Producing Better Air Quality

The WMLTP2 strategy for improving air quality includes:

- Working with the Highways Agency to deal with the substantial emissions from motorway traffic
- Detailed initiatives to tackle local hotspots through engineering and traffic management
- Broader policies to encourage forms of transport that have less impact on air quality, such as alternatively fuelled vehicles
- Provision of mandatory Indicator Target LTP8 for reducing the average NO_2 level by 1% between 2004/05 and 2010/11 in areas where NO_2 exceeds the national AQO. This target was justified against regional monitoring data that saw concentrations of NO_2 generally rise between 2000 and 2003. Given the general rising trend, it was considered a challenging target to implement a 1% NO_2 reduction in these areas by 2011

Many other policies within WMLPT2 are having indirect benefits on air quality. A good example is the Safer Routes to School (SRS) strategy which targets modal shift (effectively no increase in car-borne school journeys), casualty reduction and school travel plans (all schools to have a travel plan in place by 2011).

3.3.2 The Black Country Joint Core Strategy

This is a spatial planning document, currently under development, that conforms to the general principles set out in the RSS and progresses work already undertaken as part of the Black Country Study. The document outlines the spatial vision, objectives and strategy for future development in the Black Country until 2026 and deals with land use and environmental, economic and social issues. Once adopted, the Core Strategy will also form part of the Development Plan Frameworks being adopted by each of the Black Country Local Authorities.

ENV8: Air Quality is one of the core policies within the strategy and describes how air quality improvements will be carried out across the region. The policy states that:

New residential or other sensitive development, such as schools, hospitals and care facilities, should, wherever possible, be located where air quality meets national AQOs.

Where development is proposed in areas where air quality does not meet (or is unlikely to meet) AQOs or where significant air quality impacts are likely to be generated by the development, an appropriate air quality assessment will be required. The assessment must take into account any potential cumulative impacts as a result of known proposals in the vicinity of the proposed development site, and should consider pollutant emissions generated by the development.

Dudley MBC - England

If an assessment which is acceptable to the local authority indicates that a proposal will result in exposure to pollutant concentrations that exceed national AQOs, adequate and satisfactory mitigation measures which are capable of implementation must be secured before planning permission is granted.

Should permission be granted, as a departure from this policy, this will be conditional upon contributions being secured towards the cost of air quality action planning, to compensate for the additional burden placed on local authority air quality management regimes.

The inclusion of this policy is justified as follows:

The Rogers Review (2007) recommended six national enforcement priorities for local authority regulatory services, one of which is air quality. Within the review it is stated that:

> *"Air quality is a high national political priority and action taken to improve it will also contribute to tackling climate change. Local authorities have a vital role to play in delivering better outcomes. Air quality is a national enforcement priority because it impacts on whole populations, particularly the elderly and those more susceptible to air pollution … and its transboundary nature means that local action contributes to national outcomes." The planning system has a key role to play in limiting exposure to poor air quality.*

All the Black Country local authorities have declared their areas as air quality management areas to address the government's national AQOs which have been set in order to provide protection for human health. The main cause of poor air quality in the Black Country is traffic and there are a number of air quality hotspots where on-going monitoring is required. The Black Country local authorities are working to reduce pollutant concentrations and to minimise exposure to air quality that does not meet with national AQOs.

For some developments a basic screening assessment of air quality is all that will be required, whereas for other developments a full air quality assessment will need to be carried out, using advanced dispersion modelling software. An appropriate methodology should be agreed with the relevant Environmental Health / Environmental Protection (EP) Officer on a case by case basis.

Where a problem is identified mitigation measures might include:

- *Increasing the distance between the development façade and the pollution source;*
- *Using ventilation systems to draw cleaner air into a property;*
- *Improving public transport access to a development;*
- *Implementing a travel plan to reduce the number of trips generated;*
- *Implementing Low Emission Strategies.*

Delivery of Policy ENV8 will be carried out via the planning application process. The following indicator and target have been assigned to enable implementation of the policy to be effectively monitored:

- *LOIENV8- proportion of planning permissions granted in accordance with air quality sections recommendations.*
- *Target-100%*

Each of the Black Country Local Authorities will monitor the implementation of Policy ENV8 at local level and report progress on an annual basis.

3.4 Local Policy

3.4.1 Local Area Agreements and the National Indicator Set

The current National Indicator Set (NIS) came into operation on 1 April 2008. The indicators are designed to measure progress on national priorities where they are delivered by local councils acting alone or in partnership. Councils have to select up to 35 designated targets from the list of indicators for their Local Area Agreements (LAAs). The NIS contains a framework of 198 indicators and a number of these have beneficial impacts on air quality, including:

- **NI 186:** Per capita reduction in CO_2 emissions in the LA area
- **NI 194:** Air Quality – % reduction in NO_x and primary PM_{10} emissions through local authority's estate and operations
- **NI 198:** Children travelling to school- mode of transport usually used

Dudley's latest (next generation) LAA was submitted to central government in 2008 and covers the period 2008/09 to 2010/11. 28 National Indicators have been chosen to monitor progress during this period including NI 186 and NI 198. The relevant targets are:

- **NI 186:** A 9.7% reduction in CO_2 emissions over the 3 year period across Dudley Borough (6.7% via national and 3.0% via local measures) against a 2005/6 baseline of 5.6 tonnes per capita
- **NI 198:** A 4.0% decrease in the percentage of children travelling to school by car against a 2006/7 baseline figure of 37.0%.

3.4.2 Area Action Plans

Area Action Plans are Local Development Documents normally associated with areas of opportunity, change or conservation and provide a focus for future development. They may be used for areas where more specific intervention is needed, for example, industrial areas or town centres where there is a need for regeneration. DMBC adopted the Brierley Hill Area Action Plan (BHAAP) in October 2009 and is presently developing Area Action Plans for Stourbridge and Halesowen which are due to be adopted in 2012. The EP team will provide appropriate input into the formulation of these plans to ensure that any opportunities for improving air quality are maximised.

3.4.3 Dudley Transport Strategy

The Dudley Transport Strategy is the outcome of a detailed appraisal of national, regional and local transport policy including the WM Area Multi-Modal Study (WMAMMS), WMLTP2 and the Black Country Study; it was formerly adopted by DMBC in February 2008. The strategy examines existing and future network performance and transport demands and sets out a number of specific challenges that need to be addressed:

- Congestion within the borough and on the motorway network
- Unreliable, expensive and often overcrowded public transport
- Lack of a high standard urban public transport system
- Lack of good public transport travel information
- Severe congestion on the motorway system
- Future congestion and safety problems arising from car dependency
- Inefficient use of existing road space
- High costs of freight transport due to road congestion
- Inadequate facilities for cycling and walking
- Poor transport network in the west of the conurbation
- Pressure on resources to maintain and renew transport services and infrastructure
- Inadequate capital resources to deliver and sustain a modern transport system for Dudley as proposed in the Black Country Study.

Dudley MBC - England

The Transport Strategy focuses delivery on the four themes of the Transport Shared Priority by managing demand for travel effectively, maximising use of existing transport infrastructure, supporting economic development and regeneration by improving access to the strategic centre of Brierley Hill and other key employment areas and connectivity to regional and international gateways.

A number of specific objectives have been identified to help tackle these issues:

- Reducing traffic growth, and ultimately achieve an absolute reduction in traffic
- Increasing the number of trips in the area carried out by public transport, cycling and walking
- Reducing future levels of traffic congestion on the Principal Road Network and other key routes
- Raising awareness of the impacts of travel choices and opportunities for sustainable travel choices
- Increasing the speed and reliability of public transport on key routes
- Improving the quality, extent and security of public transport networks serving key destinations
- Increasing accessibility to jobs, main centres and hospitals
- Improving connectivity between key employment areas and the national motorway network;
- Reducing the contribution that transport makes to the region's climate change emissions and poor air quality
- Reducing the noise and visual intrusion emanating from the transport system and impacting on sensitive areas
- Continuation of safety improvements to the transport networks in the borough
- Improving the quality and security of pedestrian and cycling routes and public car parks
- Maintaining transport assets under the Council's control to a standard comparable to high performing authorities
- Reducing vehicular trips arising from new development through application of robust travel plans
- To ensure that new development contributes to mitigating the adverse impact that it may have on the transport system and supports this strategy
- Adoption of best practice in the provision of transport services and delivery of the transport strategy, including on-going communication with partners and stakeholders, and appropriate monitoring and review processes.

From a consideration of transport challenges facing the Borough, the national and regional policy steer and the future availability of resources for transport in Dudley, an integrated package of measures have been identified, many of which will have beneficial impacts on air quality. The policies and implementation measures identified within the Dudley Transport Strategy are set out in Table 4.

Table 4 Dudley Transport Strategy Policies and Objectives

Key Objectives	
Policy	**Description**
DTS 1	To support regeneration by maximising network capacity and the efficient use of existing infrastructure by developing and implementing improvements including: A Targeted physical improvements at congestion hotspots B Priority Investment Corridors with improved parking control and enforcement C Quick wins directed at providing rapid, mainly small scale and cost effective highway initiatives to increase network capacity at congestion hotspots across the borough
DTS 2	To continue to improve safety of the borough's transport networks by: A Continuing to investigate and analyse the causes of road traffic collisions B Continuing to implement programmes of Local Safety Schemes C Continuing to implement programmes of SRS Initiatives D Education, training and road safety awareness programmes E Working with the West Midlands Road Safety Partnership to introduce traffic enforcement and WM wide education, training and publicity
DTS 3	To increase the emphasis on promoting sustainable transport by: A Investing more heavily in developing Smarter Choices Initiatives B Accessibility Planning activities C Continuing to implement improvements to walking and cycling networks, routes and facilities
DTS 4	To continue to work closely with West Midland partners, particularly Centro and Westfield, to promote and deliver Metro between Wednesbury and Brierley Hill, or the implementation of improvements to public transport of equal quality and attractiveness to the proposed Metro extension
DTS 5	To work more closely with Centro (and bus/train operators) on developing and delivering bus and rail infrastructure and service enhancements, including: A Bus Showcase improvements, both route based and targeted investment B Development of Punctuality Improvement Partnerships. C Improved public transport interchange facilities
DTS 6	To maximise opportunities to bring in new sources of funding for transport including planning obligations, working in partnership with major developers in the area, and continuing to engage with the evolving WM Initiatives
DTS 7	To improve the transport evidence base and improve the assessment of transport investment choices through a programme of corridor transport studies/area studies focusing on the Brierley Hill Strategic Centre and key Priority Investment Corridors
DTS 8	To undertake an initial scoping study to investigate the feasibility and mechanism for bringing forward the improvements proposed in the Black Country Study and in accordance with the RSS and RTS
DTS 9	To work with WM partners to develop improved monitoring systems of key transport indicators to enable achievement of the Dudley Transport Strategy to be measured over time
DTS 10	To ensure that stakeholders are consulted and engaged in bringing forward transport strategies, policies and measures and the delivery of transport services in Dudley
DTS 11	To work with WM partners and across the Council to maximise opportunities offered by new technology in managing the highway network, delivering transport services and communicating with transport users

3.4.4 Unitary Development Plan Saved Policies

Dudley's Unitary Development Plan (UDP) was adopted in October 2005. Although the Planning and Compulsory Purchase Act 2004 introduced a new system of LDFs to replace UDPs it also contained a provision that UDP policies would retain development plan status and would automatically become 'saved' policies for a minimal period following adoption.

Policy EP5: Air Quality has been retained for a minimum period of 5 years following adoption of the UDP and states that:

- *Development will not normally be permitted if it will hinder or seriously harm the achievement of national AQOs.*
- *The Council will require appropriate measures to secure the delivery of AQOs.*

3.4.5 Development Control Air Quality Guidance Note

Local planning decisions have significant potential to affect local air quality in many ways including:

- Location and design of industrial emissions sources
- Location of receptors
- Creation of traffic flow impacts

The increasing importance of this field within LAQM is recognised within PPS 23 Annexe 1 and best practice guidance published by Environmental Protection UK (EPUK) [7].

DMBC has developed a guidance document for officers interpreting potential air quality impacts of new development and this has been adopted as a Development Control Guidance Note [8]. The purpose of this policy is to provide information for officers of DMBC to assist in preparing comments on planning application consultations with respect to air quality issues.

It is DMBC's intention to expand this document as stated in the Proposed Actions DAQAP4. With the use of this guidance a coordinated approach to air quality can be achieved for all planning applications and by implementing this guidance officers will be able to help control exposure to poor air quality and so minimise the adverse affect of air quality on health & the environment.

With this status it carries some weight in the determination of planning applications - although not as much weight as SPDs within Council's Local Development Framework (LDF).

3.4.6 Supplementary Planning Documents

SPDs are examples of Local Development Documents created to supplement other areas of planning policy, e.g. to provide more information on the policies which are contained in the adopted UDP or the Black Country Joint Core Strategy. SPDs are subject to rigorous procedures of community involvement and sustainability appraisal. This means that they carry considerable weight in the determination of planning applications and development proposals even though they are not subject to independent examination or do not have Development Plan status.

The SPDs currently adopted and of most relevance to the AQAP are:

- Parking Standards and Travel Plans SPD (Adopted March 2007)
- Planning Obligations SPD (revised document adopted March 2009)

These documents provide important links with air quality since the provision of travel plans or a financial contribution towards the AQAP are two possible mechanisms for mitigating or offsetting any unacceptable air quality impacts of new development. Section 2.4 of the Dudley Council Planning Obligations SPD states that:

A planning obligation for air quality would be entered into where the proposed development is likely to have a detrimental effect on air quality. For example, a new housing estate which is serviced by an already busy road which has air quality problems will place an additional burden on the road through extra traffic movements which is likely in turn to increase concentrations of pollutants in the air. In such circumstances, and particularly as the whole of Dudley Borough was declared as an Air Quality Management Area in 2007, it may be appropriate for the developer to be given permission to develop only where an S.106 agreement can be reached. This could, for example, require the developer to either:

- *Undertake specific off site works to help minimise the effect of the development on air quality or to provide monies to the Council for the purchase, installation, operation and maintenance of air quality monitoring equipment, or:*

- *Provide other assistance or support to enable the Council to implement any necessary monitoring or other actions in pursuit of an Air Quality Action Plan.*

To afford greater guidance to developers, DMBC intend to produce an air quality SPD as detailed in DAQAP4.

4 Other Related Projects and Programmes

4.1 The Healthy Towns Project

Dudley's '*Healthy Towns'* project in which the Primary Care Trust (PCT), in partnership with DMBC, has received a £4.5 million grant as from the government's Healthy Community Challenge fund. The project aims to encourage families to make the most of outdoor areas by transforming parks and play areas into family health hubs. These hubs will be connected to people's homes via safe active travel corridors incorporating electronic warning signs, traffic calming measures, cycle storage, footpath improvements, crossing upgrades, canal tow path improvements and construction of walkzones. The project will promote healthy alternatives to motor vehicles and will encourage a wider range of outdoor activities which will benefit from delivery of the action plan.

4.2 DMBC Climate Change Delivery Plan

As part of DMBC's Local Area Agreement the council is addressing climate change issues by pursuing reduction in CO_2 emissions from the public and business sectors, domestic housing and road transport. A climate change reduction plan is being developed to address these issues and successful delivery of the plan will have beneficial impacts on NO_2 emissions across the Borough.

4.3 DMBC Carbon Management Programme

In delivering its services, DMBC recognises that it has a responsibility to promote sustainable development and tackle climate change for the benefit of our communities and future generations. Actions taken at the local level can make significant contributions to national and even global targets and commitments. Following the Copenhagen Climate Change Summit held in December 2009, councils across the UK have collectively reiterated their role at the forefront to reducing carbon and conserving fuel.

A Carbon Management Plan (CMP) is currently being developed as part of the Dudley Green Project. This is an overarching initiative which demonstrates DMBC's commitment to delivering measurable environmental sustainability improvements and tackling climate change within DMBC and the borough. This project has been delivered through DMBC's Sustainability Action Plan which will link into the AQAP and other council plans such as the LTP, Housing strategy and Local Development Framework

The CMP will manage carbon emissions across DMBC's operations. These operations include buildings and schools, business travel, fleet, street lighting and some out sourced services such as transporting children with special needs to and from school. Effective carbon management in these areas will also provide additional beneficial reductions in associated emissions of NO_2 both locally and nationally via reduced electricity consumption.

4.4 Local & District Centre Regeneration Plans

District centres are described in the UDP as those areas that provide a wide range and choice of goods and services at the local level. They benefit from established public transport links, car parking provision and walk-in catchment and provide a natural focus for community facilities.

In 2008, a review of Dudley's 16 district centres was carried out to identify those with the greatest need in terms of regeneration. This review undertook an individual analysis of each of the centres and included issues such as vacancy levels, retail representation in the protected frontage, footfall levels and traffic

congestion / poor air quality. The review and priority list was approved by Cabinet in September 2009 and included several areas where poor air quality has been identified as an issue:

- Shell Corner (exceedences of the AQO for annual mean NO_2 were recorded previously but not during 2008)
- Lye
- Cradley
- Pensnett
- Quarry Bank
- Netherton
- Wordsley

DMBC is in the process of developing regeneration strategies for all priority local centres; work on their development is at an advanced stage in some of the local centres but has yet to start in others. A timetable for the formulation and execution of these regeneration strategies is presented in Table 5.

Development of a regeneration strategy for a given local centre would typically include a series of workshops where local businesses, residents, stakeholders and other organisations are invited to discuss local issues including traffic congestion and associated poor air quality, public transport availability and provision of key facilities. The workshops are designed to generate a series of options which can then be evaluated on the basis of cost, feasibility and timescales before incorporating the preferred options into the formal regeneration strategy. This would normally be approved by Cabinet and issued as a supplementary planning document, adopted strategy or development control guidance note and be used as a blueprint for future development in that area.

Table 5 DMBC Local and District Centre Regeneration Programme

Key Details				
Local Centre	Strategy Timetable		Document Status	Details
	Start Date	Adoption Date		
Shell Corner	Feb-07	Dec-08	Adopted strategy	http://www.dudley.gov.uk/community-and-living/town-centre-management/local-and-district-shopping-centres/shell-corner
Lye	Mar-00	Jul-04	Saved Supplementary Planning Guidance (SPG)	Further Action Plan Update provided in Sep-06. http://www.dudley.gov.uk/community-and-living/town-centre-management/local-and-district-shopping-centres/lye
Cradley	Feb-07	Jul-07	Development control guidance note	http://www.dudley.gov.uk/community-and-living/town-centre-management/local-and-district-shopping-centres/cradley
Pensnett	Nov-07	TBA	Draft, due for adoption 2009	http://www.dudley.gov.uk/community-and-living/town-centre-management/local-and-district-shopping-centres/pensnett
Quarry Bank	Jan-09		In preparation	N/|A
Netherton	T.B.A	T.B.A.	N/|A	N/A
Wordsley	T.B.A	T.B.A.	N/A	N/|A

Any local air quality improvement measures identified during the consultation process and carried forward into the respective adopted strategies have been integrated into this air quality action plan; full details are provided in Section 7.

5 Further Assessment of Air Quality

5.1 Review of Assessment Findings

A Further Assessment has been carried out in parallel with the preparation of the action plan to provide additional technical supporting information. The assessment confirmed exceedences of the annual mean NO_2 AQO at fifteen locations across the borough, thereby justifying the decision to declare the AQMA in December 2007. The extent of the AQMA was defined by the borough boundary, and this has enabled DMBC to prepare this action plan in which actions can be taken anywhere in the borough to improve air quality at the exceedence locations.

The assessment also required DMBC to calculate the % reduction in NOx derived from road sources required to reach compliance with the AQOs, provide an estimate of possible compliance dates and undertake a more detailed analysis of the sources of pollution to provide additional focus for the AQAP.

5.2 Source Apportionment Contributions

In accordance with the requirements of LAQM.TG (09), DMBC has undertaken an analysis of the sources of NO_2 at each of the 15 locations covered by the assessment. Sources have been broken down into the following categories:

- **Regional background** which the local authority is unable to influence
- **Local Background** which the authority should have some influence over. Contributory sources include the commercial and domestic sectors and remote transport and industrial sources
- **Local Sources** which will add to the background to give the hotspot area of exceedences. These will be the principal sources for the local authority to control within the action plan. Typical sources include emissions from local road traffic and local industrial (point) sources

The exercise confirmed that the principal local contributory factor in all cases was NO_2 generated from road traffic (Table 6). Congestion on all of the relevant road links in these areas with associated queuing of traffic was a specific cause for concern in all locations. Significant contributions of road NO_2 were derived from petrol and diesel cars, but the highest contributions were found to originate from HGVs in 12 of the areas and buses and coaches in the remaining 3 areas.

Table 6 **NO_2 Source Apportionment for 15 Receptor Locations in Dudley Borough**

DMBC NO_2 Source Apportionment Data										
Ref	Location	% Contribution Towards Modelled NO_2 Concentrations At Each Receptor								
		Regional Back ground	Local Back ground	Local Industrial (Point) Sources	Petrol Car/ Motor cycle	Diesel Car	Petrol LGV	Diesel LGV	HGV	Buses & Coaches
1	Netherton	8.9	38.7	0.6	4.1	3.4	<0.1	0.8	29.7	13.8
2	Cradley	11.3	38.4	0.1	6.0	4.8	<0.1	0.7	21.5	17.2
3	Pensnett	9.3	42.7	0.2	4.9	4.0	<0.1	0.8	32.3	5.8
4	Sedgley	12.6	34.4	0.2	12.7	10.4	0.1	2.1	17.4	10.3
5	Brierley Hill	11.6	41.8	0.2	5.5	4.5	<0.1	0.8	16.1	19.4
6	Quarry Bank	11.6	43.3	0.2	4.3	3.5	<0.1	0.5	19.8	16.8
7	Hagley Rd.	16.4	53.6	0.1	6.1	5.0	<0.1	1.1	12.5	5.0
8	Wordsley	10.1	26.2	0.1	9.4	7.7	<0.1	0.9	27.3	18.4
9	Lye	10.9	39.4	0.1	6.7	5.5	<0.1	0.4	27.1	9.9
10	New St.	12.2	62.0	1.4	0.9	0.8	<0.1	0.1	1.5	21.0
11	Himley Rd.	13.6	39.8	0.4	5.3	4.3	<0.1	1.1	31.5	3.9
12	Stourbridge Rd.	12.6	41.0	0.1	6.9	5.7	<0.1	0.4	24.5	8.9
13	Amblecote	12.6	41.6	0.1	11.2	9.2	<0.1	1.8	15.8	7.7
14	Birmingham Rd.	11.4	55.2	1.1	6.6	5.4	<0.1	0.9	16.4	3.0
15	Buffery Rd.	12.6	49.1	2.2	9.0	7.5	<0.1	1.0	6.3	12.4

5.3 Evaluation of Other Contributory Factors

Completion of the Further Assessment has enabled detailed analysis of significant contributory factors at each of the fifteen locations and this has provided additional focus for the development of the action plan. Full details are provided in Table 7.

Emissions from the heavier vehicles were exacerbated by short sections of road with gradients ranging between 2.5% and 9% in many of the locations due to the naturally undulating topography found within Dudley Borough. Street canyons with rear of pavement residential accommodation were also identified in over half of the areas examined.

Table 7 Evaluation of Contributory Factors

Identification of Key Factors In Generation of Road NO_x					
Ref	**Location**	**Approx AADT on closest road link**	**Nearest road with gradient >2.5%?**	**Source Apportion-ment Principal Traffic Component**	**Street Canyon?**
1	Netherton	19000	Y	HGV	N
2	Cradley	22000	Y	HGV	Y
3	Pensnett	34000	Y	HGV	Y
4	Sedgley	15000	N	HGV	Y
5	Brierley Hill	20000	N	Bus/Coach	Y
6	Quarry Bank	18000	Y	HGV	Y
7	Hagley Rd.	10000	Y	HGV	Y
8	Wordsley	29000	Y	HGV	Y
9	Lye	24000	Y	HGV	N
10	New St.	3000	Y	Bus/Coach	Y
11	Himley Rd.	17000	N	HGV	N
12	Stourbridge Rd.	17000	N	HGV	Y
13	Amblecote	22000	N	HGV	N
14	Birmingham Rd.	49000	N	HGV	N
15	Buffery Rd.	17000	N	Bus/Coach	N

5.4 Required Reductions in Emissions of Nitrogen Oxides

Local Authorities are required to calculate the reduction in pollutant emissions that will be required to attain the AQOs, thereby allowing the authority to judge the scale of effort that is required within the action plan. In completing the Further Assessment, DMBC has calculated the % reduction required at the worst case receptor in each of the fifteen locations to achieve compliance with the AQO.

The results of the calculations at each of the source receptor locations are summarised in Table 8. Estimated % Roadside NOx reduction values are ranked in descending order in order to assist in the prioritisation of actions within the AQAP.

Table 8 Summary of Required % Reduction in Road NOx Values

% Reduction in Road NO_x Values		
Location	**Area**	**Required % Reduction in Road NOx**
1	Netherton	74.8
8	Wordsley	66.2
3	Pensnett	64.1
2	Cradley	58.5
6	Quarry Bank	50.3
9	Lye	45.3
14	Birmingham Rd.	35.0
5	Brierley Hill	34.7
12	Stourbridge Rd.	32.2
4	Sedgley	30.0
11	Himley Rd.	22.3
13	Amblecote	18.1
15	Buffery Rd.	15.9
7	Hagley Rd.	13.0
10	New St.	10.3

5.5 Estimated Compliance Timescales

A conservative estimate of compliance timescales has been undertaken as part of the Further Assessment and indicated that 9 of the 15 areas are likely to achieve compliance within the short-medium timescale associated with the lifetime of WMLTP3. Positive intervention via the action plan will allow timescales to be further accelerated in many of these and the remaining six areas. In the assessment of compliance dates, the following terminology has been utilised in providing some alignment with the current and next generation LTPs:

- **'Short Term (ST)'**: - 2008 to 2011
- **'Medium Term (MT)'**: - 2011 to 2016
- **'Long Term (LT)'**: - 2016 Onwards

Table 9 Estimated Compliance Timescales

DMBC Predictions of Possible Compliance Dates For Meeting The Annual Mean NO_2 AQO.		
Location	**Area**	**Predicted Compliance Timescale**
1	Netherton	L
2	Cradley	L
3	Pensnett	L
4	Sedgley	M-L
5	Brierley Hill	S-M
6	Quarry Bank	L
7	Hagley Rd.	S-M
8	Wordsley	L
9	Lye	L
10	New St.	S
11	Himley Rd.	S
12	Stourbridge Rd.	M-L
13	Amblecote	M
14	Birmingham Rd.	S-M
15	Buffery Rd.	S

6 Designing the Action Plan

6.1 General Aims

Preparation of the AQAP has been undertaken in parallel with the completion of the Further Assessment and has focused on measures to reduce traffic congestion, improve the public transport offering, change peoples' travel patterns and reduce regional background concentrations with a number of initiatives led by Dudley Council.

6.2 Rejected Options

Since the publication of the former Brierley Hill AQAP, there has been a change of emphasis in regional transport policy. The main focus of the overarching WMRSS is targeted towards reducing traffic congestion by changing people's travel patterns rather than building new roads. Typical actions are listed below:

- Reducing the need to travel
- Provision of better located facilities
- Provision of good quality, well designed walking and cycling facilities
- Promotion of travel awareness initiatives
- Improving Public transport
- Introducing well-designed Park & Ride schemes
- Improving provisions for powered two-wheelers and taxis
- Introducing better management of public and private car parking, and:
- Consideration of appropriate demand management measures

All actions included within the AQAP have been assessed on the basis of cost, effectiveness and feasibility and in terms of their compatibility with the overarching policy framework. Following initial consideration, a number of options were therefore excluded from further consideration during the formulation of the action plan including:

- The construction of a Western Orbital route bypassing the West of the WM conurbation. This proposal had been much discussed during the 1990s but was subsequently dropped from the national road-building programme due to widespread public opposition and problems with funding. Although such a scheme could deliver potential air quality benefits to some of the areas on the western side of the borough (e.g. Areas 3, 4, 8 and 13), it was not considered any further during compilation of the action plan due to the issues identified previously

- Compulsory purchase schemes- where the declaration of an AMQA has been based a single or small numbers of receptors, it has sometimes been possible to effectively remove the residential exposure via compulsory purchase of the property. This option has not been further considered in Dudley due to the number and geographically diverse nature of potentially affected properties

- The air quality benefits of two parallel route options for Sedgley (Area 4) were evaluated during 2005. The first option passing to the west of the town centre was rejected from further consideration, as it would deliver negligible air quality benefits. The second option passing to the east of the town centre may have delivered the requisite air quality benefits but was rejected from further consideration on financial and wider environmental grounds.

6.3 Actions for Further Consideration

With the exception of one major road scheme, implementation of a traffic management scheme at Burnt Tree Island (Area 14, currently being delivered via WMLPT2), the majority of actions proposed as part of the plan have incorporated a number of minor road schemes and junction improvements, improving the quality of public transport, encouraging modal shift and reducing local background emissions via a number of council led initiatives. The action plan has been developed around 8 key themes and these are summarised in Table 10.

Table 10 Action Plan Themes

DMBC AQAP Proposed Actions	
Reference	**Action**
DAQAP1	Road Network Improvements
DAQAP2	Improving Public Transport & Rail Freight Capabilities
DAQAP3	Reducing Vehicle Emissions
DAQAP4	Land Use Planning Initiatives
DAQAP5	Industrial, Commercial and Domestic Actions
DAQAP6	Promoting Information and Education
DAQAP7	Encouraging Modal Shift
DAQAP8	Leading By Example

6.4 Evaluation of Proposed Actions

All options presented as part of the action plan have been evaluated in terms of potential air quality benefit, cost and implementation timescales and are presented in Section 7 of this document. The following designations have been used in the compilation of the action plan:

Costs have been evaluated on a five point scale ranging from low to high based on the following criteria:

1	**High**	>£1 million
2	**Medium-High**	£100,000 to £ 1 million
3	**Medium**	£50,000 to £100,000
4	**Low-Medium**	£10,000 to £50,000
5	**Low**	<£10,000

Timescales have been assigned using the designations given in Section 5.5, i.e.:

Short Term (ST)	2008 to 2011
Medium Term (MT)	2011 to 2016
Long Term (LT)	2016 Onwards

Air Quality Benefits have been assessed on a semi quantitative 5 point scale ranging from Low (1) to High (5).

7 Proposed Actions

7.1 Action DAQAP1: Road Network Improvements

Road improvements will reduce congestion and aid air quality by keeping vehicles moving because emissions from free flowing traffic are lower than from queuing traffic. There are 10 road schemes planned by DMBC that will have a direct effect on the air quality in some of the 15 areas of exceedence within the Borough (see Table 3).

Netherton, Road Junction Improvements

Following public consultation in 2009, a proposal is being developed to improve efficiency and priority junction improvements at the Halesowen Road/Northfield Road junction. This will include a ban on northbound traffic turning right into Northfield Road and removal of some roadside parking to improve traffic flow and reduce congestion in this area (See Appendix A).

Impact	The impact of this improvement will be reduced traffic congestion along the A459 and improved air quality in **Area 1**.
Cost Benefit	The cost of this scheme is medium and the benefit to air quality in the region is considered to be medium.
Time Period	The time frame for this project is short.
Related Policies and initiatives	Netherton Regeneration Project

Windmill Hill, Highway and Pedestrian Improvements

The Windmill Hill Regeneration programme has identified a number of options for local road improvements in this area but potential funding schemes have yet to be identified. Further work on developing proposals will be carried out in the short to medium term.

Impact	The proposals will directly impact upon **Area 2**. It will not be possible to assess the potential AQ benefits until details of any road improvement schemes are finalised.
Cost Benefit	The cost of this scheme is low to medium to high depending on the extent of the approved scheme. The benefit to air quality in the area is considered to be low to medium.
Time Period	The time frame for this project is short to medium.
Related Policies and initiatives	Cradley Regeneration Project

Pensnett, High Street Highway Improvements

The Pensnett Regeneration Programme identified a number of options for a highway improvement scheme in this area. The effect of the proposed scheme will be to reduce traffic on High Street queuing to turn right into several roads. The options are currently being reviewed with a medium term implementation target.

Impact	Reduced traffic congestion along the A4101 and improved air quality in **Area 3**.
Cost Benefit	The cost of this scheme is high and the benefit to air quality in the area is considered to be medium to high.
Time Period	The time frame for this project is medium.
Related Policies and initiatives	Pensnett Regeneration Project

Traffic Signal Improvements and Upgrade of Pedestrian Crossing Facilities in the Quarry Bank Area

Following public consultation as part of the Quarry Bank regeneration programme in 2009, the right hand turning lane at the junction of the A4100 and A4036 has been lengthened to increase capacity, thereby reducing queuing traffic in Quarry Bank High Street. Introduction of puffin crossing facilities has improved facilities for pedestrians and reduced queuing traffic. Air quality improvements now need to be quantified before evaluating further action

Impact	Reduced traffic congestion along Quarry Bank High Street, **Area 6**.
Cost Benefit	The cost of this scheme is medium to high and the benefit to air quality in the area is considered to be low to medium.
Time Period	The time frame for this project is short.
Related Policies and initiatives	Quarry Bank Regeneration Project

The Installation of Urban Traffic Control (UTC) CCTV Cameras at Key Junctions

The Installation of UTC cameras at a number of key points on the road network will allow better proactive control of signalised traffic junctions, helping to reduce queuing at peak periods. This work is being implemented between 2008 and 2010.

Impact	The Units are being installed in Halesowen, Brierley Hill and Stourbridge and at various points along the A491. Reduced traffic queuing will deliver AQ benefits in **Areas 5, 8 and 13.**
Cost Benefit	The cost of the scheme is medium to high and the benefit to air quality in the area is considered to be low to medium.
Time Period	The time frame for this project is short.
Related Policies and initiatives	WMLTP 2

The Installation of a Pedestrian Crossing in Priory Road, Dudley

Proposals for a new pedestrian crossing are being developed to provide better facilities for pedestrians.

Impact	The positioning of the crossing will mean that any associated queues will form outside the street canyon in New St. This should result in minor air quality benefits in **Area 10.**
Cost Benefit	The cost of the scheme is low and the benefit to air quality in the area is considered to be low.
Time Period	The time frame for this project is short.
Related Policies and initiatives	WMLTP 2

Upgrade of Traffic Signals at the B4175/B4176 Junction

Proposals are being developed to fund upgrade of the signals at the junction between Himley Rd/Cinder Rd/Bull Street via a Section 106 Agreement.

Impact	Reduced queuing at this junction will have beneficial AQ impacts in **Area 11.**
Cost Benefit	The cost of the scheme is medium and the benefit to air quality in the area is considered to be low to medium.
Time Period	The time frame for this project is short to medium but is linked to the development.
Related Policies and initiatives	Engineering, Traffic & Transportation Service Plan

Dudley MBC - England

Minor Road and Junction Improvements

A number of minor road improvements and traffic management measures have recently been completed in the vicinity of Stourbridge Road, Halesowen and Vicarage Rd, Amblecote. Air quality improvements now need to be quantified before evaluating further action.

Impact	Minor improvements in traffic flows should deliver some AQ benefits in **Areas 12 and 13.**
Cost Benefit	The cost of the scheme is high and the benefit to air quality in the area is considered to be low to medium.
Time Period	The time frame for this project is short.
Related Policies and initiatives	Dudley Transport Strategy

Major Junction Improvement at Burnt Tree Island

This is a major road improvement scheme currently under construction and due for completion in 2011 (See Appendix 2). An air quality monitoring station is being installed in this area to monitor AQ impacts from the impending expansion of a nearby major retail development.

Impact	Reduced queuing and congestion in the vicinity of Burnt Tree Island, **Area 14**, with subsequent AQ benefits for Dudley and Sandwell MBC
Cost Benefit	The cost of the scheme is high and the benefit to air quality in the area is considered to be medium to high.
Time Period	The time frame for this project is medium.
Related policies and initiatives	WMLTP2

Completion of Minor Elements Associated With the BHSAN Major Scheme

Following opening of the parallel route in October 2008, a number of additional elements from the BHSAN will be completed including introduction of 1-way traffic in John St, addition of Puffin Crossings in High St, upgrade of signals at 5 ways junction, upgrade of pedestrian facilities, improvements at bus stops and addition of parking/unloading bays in High St.

Impact	Reduce congestion in Brierley Hill, **Area 5**, better facilities for pedestrians and users of public transport, leading to improved air quality
Cost Benefit	The cost of the scheme is medium to high and the benefit to air quality in the area is considered to be medium to high.
Time Period	The time frame for this project is medium.
Related policies and initiatives	BHSAN major scheme and WMLTP2

All the schemes above relate to the **Congestion Performance Indicators 1-3**, which are also linked to DAQAP2 and 3.

Performance Indicators	**1.** Target LTP6a. No increase in morning peak traffic flows into the nine LTP centres (in Dudley borough this includes Dudley and Brierley Hill town centres) between 2005/06 and 2009/10. **2.** Target LTP6b. An increase in the morning peak period proportion of trips by public transport into the nine LTP centres as a whole from the 2005/06 forecast baseline of 32.73% to 33.8% by 2009/10 **3.** LTP7. For target routes in the morning peak, to accommodate an expected increase in travel of 4% with a 5% increase in journey times between 2005 and 2011.

7.2 Action DAQAP2: Improving Public Transport & Rail Freight Facilities

Key to reducing vehicle emissions and kerbside NO_2 levels is improving public transport to encourage people to leave their cars at home.

Developing and Delivering Bus Infrastructure Improvements via Implementation of Voluntary Bus Partnership Commitments.

DMBC is working with Centro and National Express to upgrade a number of key bus routes (Services 9, 126, 256, 311 and 558) involving the installation of new bus shelters, improvement of highways and junctions on key routes, implementation of selective vehicle detection (SVD) at key junctions and improved information provision for passengers.
Increased bus patronage will reduce dependency on the car and reduce vehicle emissions. Upgrades to the bus routes will have a beneficial impact on bus related emissions across the borough, in particular **Areas 2, 4, 8, 9, 13, 5 and 10** (Table 3). The partnership initiative forms part of the Dudley Transport Strategy (DTS5) and WMLTP2 **(Performance Indicators 4-6)**

Extending the WM metro link to Merry Hill

The Dudley Transport Strategy (DTS4) promotes the delivery of the WM metro between Wednesbury and Brierley Hill or the implementation of improvements to public transport of equal quality to the proposed Metro extension. Borough wide benefits include better use of public transport services, less congestion, and regeneration opportunities with specific benefits for **Area 5 (Performance Indicators 4-6).**

Improving Rail Freight Capabilities

Centro are investigating improvements to the rail freight network including the reopening of the rail line between Walsall and Stourbridge to freight trains. DMBC will provide supporting air quality information to assist any activity in this area. This scheme has the potential to remove 4000 lorry loads per year from the local road network, potentially reducing HGV emissions in **all areas** of the borough.

Provision of Better Information for Passengers at Key Railway Interchange Facilities, e.g. Cradley

The Quarry Bank regeneration programme identified inadequate customer information facilities at Cradley Station as a key barrier to increasing public transport patronage. DMBC will liaise with Centro to improve information provision for passengers, benefiting **Area 6** and the wider area.

Impacts	Increased use of public transport will lead to less reliance on the private vehicle and will reduce congestion and vehicle emissions helping to improve Air Quality.
Performance Indicators	These initiatives feed into the WMLTP2 performance indicators listed in DAQAP3 Reducing Vehicle Emissions which are repeated below. **4.** Target LTP6a. No increase in morning peak traffic flows into the nine LTP centres (in Dudley borough this includes Dudley and Brierley Hill town centres) between 2005/06 and 2009/10. **5.** Target LTP6b. An increase in the morning peak period proportion of trips by public transport into the nine LTP centres as a whole from the 2005/06 forecast baseline of 32.73% to 33.8% by 2009/10 **6.** LTP7. For target routes in the morning peak, to accommodate an expected increase in travel of 4% with a 5% increase in journey times between 2005 and 2011. .
Cost Benefit	The cost of these measures is estimated to be medium to high and the benefits to air quality are likely to be medium
Time Period	The above measures will take place in the short to medium time frame. With the Midland Metro & rail freight proposals likely to be long term objectives.
Ownership	DMBC , Centro and National Express

7.3 Action DAQAP3: Reducing Vehicle Emissions

The measures below are to reduce vehicle emissions from both Council operated and privately owned vehicles and have the potential to benefit air quality in **all areas**.

Roadside Emission Testing (RET)

DMBC will carry out a RET feasibility study to assess the funding implications and practicality of undertaking a RET programme. The most appropriate means of delivery, e.g. fixed penalty notice (FPN), enforcement or educational/ promotional campaigns either as local or regional initiatives will be considered. This action has the potential to improve the operating efficiency of vehicles leading to better fuel efficiency and cleaner emissions to air. **See Performance Indicator 7**.

Improving the DMBC Fleet

DMBC has a fleet of circa 500 vehicles, 30% of which are Euro IV diesel engines and 3.5% of the fleet is operating with a Euro V diesel engine. The vehicles are replaced every 5 years and the highest Euro standard is sought for replacements. The vehicles run on 5% bio diesel. By operating the most up to date fleet emissions from the diesel engines are minimised. Alternative fuel options have been trialled and are constantly being reviewed. Suitable alternatives will be introduced as they are identified.

Reducing Idling Emissions

DMBC will evaluate proposals to develop the role of parking enforcement officers to discourage unnecessary idling of parked vehicles. The most appropriate means of enforcement e.g. FPN or educational/promotional campaigns either as local or regional initiatives will be considered. This action has the potential to reduce emissions and noise levels from vehicles in **all areas.**
See Performance Indicator 8.

Encouraging the Uptake of Low Emissions Vehicles

To encourage the uptake of low emission vehicles by local residents, DMBC will investigate the feasibility of converting designated DMBC operated short-term town centre car park spaces to long term parking for low emission vehicles. The practicality and cost of providing electric vehicle charging points at designated town centre car parking locations will be investigated and reported before any further action is considered.
See Performance Indicator 9.

Reporting Smoky Vehicles

The DMBC website will be developed to provide further information for the public on this issue and enable the website to accept information from the public for further action by DMBC. The Vehicle and Operator Services Agency (VOSA) contact details will be provided on the website to enable members of the public to make direct contact if they wish. This action has the potential to improve the efficiency of vehicle engines and so reduce the odorous and visual component of vehicle emissions as well as reducing NO_2 emissions to air.
See Performance Indicator 10.

Reducing Congestion

WMLTP2 contains several targets related to changes in peak period traffic flow to urban centres. Target LTP6a requires no increase in morning peak traffic flows into the nine WMLTP2 centres (in Dudley borough this includes Dudley and Brierley Hill town centres) between 2005/06 and 2009/10.
See Performance Indicator 11.

Target LTP6b requires an increase in the morning peak period proportion of trips by public transport into the nine WMLTP2 centres as a whole from the 2005/06 forecast baseline of 32.73% to 33.8% by 2009/10
See Performance Indicator 12.

Key actions to achieve these targets include, improvements to public transport, improvements to facilities to assist walking and cycling, and car park management and charging regimes, all designed to reduce reliance on use of the private car. All these measures result in less vehicles on the road giving rise to less emissions and hence a reduction in NO_2, benefiting air quality in **all areas.** This target is monitored and reported bi-annually by DMBC Transportation officers .The target is currently being met.

WMLTP2 also contains a congestion target, LTP7, for a number of target routes across the WM. In Dudley these include the A491 (southbound), the A461 (eastbound) and the A4123 (southbound) running through Burnt Tree Island (**Area 14**). The target, for specified routes in the morning peak, to accommodate an expected increase in travel of 4% with a 5% increase in journey times between 2005 and 2011, is on track and is monitored and reported by the Chief Engineers and Planning Officer's Group (CEPOG) Core Support Team on a bi-annual basis. **See Performance Indicator 13.**

Impacts	These measures will reduce vehicle emissions and will improve air quality; in particular the concentrations of NO_2 at kerbside will be reduced.
Performance Indicators	**7.** The feasibility Study for RET to be completed and reported to the head of service by 31/03/11 as identified in the EP Service Plan. **8.** The evaluation of proposals for reducing idling emissions will be completed and reported to the head of service by 31/03/11 as identified in the EP Service Plan. **9.** The investigation into encouraging the uptake of low emission vehicles will be completed and reported to the head of service by 31/03/11 as identified in the EP Service Plan. **10.** EP Service Plan 2010 / 11, to upgrade the web site by 31 03 10 **11.** Target LTP6a. No increase in morning peak traffic flows into the nine WMLTP2 centres (in Dudley borough this includes Dudley and Brierley Hill town centres) between 2005/06 and 2009/10. **12.** Target LTP6b. An increase in the morning peak period proportion of trips by public transport into the nine WMLTP2 centres as a whole from the 2005/06 forecast baseline of 32.73% to 33.8% by 2009/10 **13.** LTP7. For target routes in the morning peak, to accommodate an expected increase in travel of 4% with a 5% increase in journey times between 2005 and 2011.
Cost Benefit	The cost of these enterprises is estimated to be low to medium. The benefits to air quality are likely to be low to start with but as momentum is gained there will be a greater positive impact on improving Air Quality.
Time Period	All the above projects are planned for the short to medium time frame
Ownership	DMBC & partner West Midlands authorities

7.4 Action DAQAP4: Land Use Planning Initiatives

This action relates to the control of developments with regard to air quality and has the potential to benefit air quality in **all areas**.

Supplementary Planning Document

To ensure that air quality issues are considered in the regeneration agenda at DMBC an SPD for Air Quality & Development Control will be produced to provide guidance for developers and to enhance the close working relationship between planners and environmental health officers with respect of air quality matters. **See Performance Indicator 14.**

Member and Officer Training

To improve the understanding of air quality and planning specific training of members and planning officers will be undertaken. This will enable planning decisions to be made with a better understanding of air quality issues. All Elected members and who sit on the Development Control Committee and Planning Officers will be offered training on air quality. We aim to complete the training programme by 31/03/11. **See Performance Indicator 15.**

Monitoring the Effectiveness of Air Quality Planning Recommendations

From the 1st April 2010 the effectiveness of Air Quality recommendations will be measured by determining the proportion of planning applications which are granted in accordance with the air quality recommendations therein compared to those which are refused on air quality grounds. Performance indicator 16 is in accordance with the Black Country Core Strategy Document. **See Performance Indicator 16.**

Providing Professional Advice to Development Control

The existing Development Control Air Quality Guidance Note (see 3.4.5) will be reviewed and updated. To enhance the information provided in the advice note we will undertake to produce predictive NO_2 levels across the borough which will be modelled and mapped. **See Performance Indicator 17.** This will indicate areas of either:

- Allow development, no air quality issues
- Request a full air quality assessment, or:
- Refuse development on air quality grounds

Impacts	By providing additional documents and training, planning applications and decisions will be made on a more informed basis, preventing development in areas of poor air quality without appropriate mitigation in place. This will ultimately remove or restrict receptors from pollutants and provide better control over the location of potentially polluting developments.
Performance Indicators	**14.** To have an SPD adopted by DMBC by 31/03/2012 - the EP Service Plan. **15.** To complete officer and member training by 31/03/11 - the EP Service Plan. **16.** To meet the Black Country Core Strategy target LOIENV8- proportion of planning permissions granted in accordance with air quality sections recommendations – 100% **17.** To update Air Quality Advice Note, produce modelled map of the borough and disseminate the information to planners by the 31/03/11 - the EP Service Plan
Cost Benefit	The cost of these measures is estimated to be medium. The benefits to air quality are likely to be low to start with but as momentum is gained there will be a greater positive impact on improving Air Quality.
Time Period	All the above projects are planned for the short to medium time frame
Ownership	DMBC

7.5 Action DAQAP5: Industrial, Commercial and Domestic Actions

Source apportionment studies to date show significant contributions from regional and local background sources of NO_2 in exceedance areas within the borough. This demonstrates that an investigation into and control of emission sources other than from vehicle exhausts is necessary. Subsequent remedial action will have the potential to benefit air quality in **all areas**.

Background NO_2 Concentrations

Further analysis of source apportionment data will be used to identify which areas of exceedance of the AQOs are due to high local background levels of NOx. These areas will be mapped and an investigation carried out to identify possible sources. Once the sources have been identified, actions to reduce NOx will be formulated and implemented. Further air quality modelling will be carried out to reassess the situation. The sources could be domestic commercial or industrial premises and measures to reduce emissions could include improved fuel efficiency. **See Performance Indicator 18.**

Control of New of Biomass installations in Dudley MB

DMBC has developed a system of notification with Building Control which confirms details of Biomass installation occurring within the borough. From the information received an evaluation of the effect of the biomass developments can be made including compliance with the provisions of the Clean Air Act 1993 wherever applicable. **See Performance Indicator 19.**

Control of Bonfires and use of Other Unauthorised Fuels

DMBC will investigate all complaints relating to bonfires, the burning of unauthorised fuels and the use of non exempted appliances at domestic, commercial and industrial premises. The investigations will be carried out in accordance with the Service Standards within the EP Service Plan. Advice will be given to the public and where necessary the provisions of the Clean Air Act 1993 and Part III of the Environmental Protection Act 1990 will be enforced in accordance with the DMBC's enforcement policy to prevent unacceptable emissions to air from these sources. **See Performance Indicator 20.**

Control of Industry

DMBC continues to regulate emissions to air from approximately 130 industrial installations under the Environmental Permitting Regime. A programme for seeking out prescribed installations that are not registered will be formulated and actioned to enable more effective control of emissions to air via the permit conditions. Inspections of the permitted installations will be carried out in accordance with the EP Service Plan and where necessary enforcement of the Environmental Permitting Regulations 2007 will be undertaken to effectively control and minimise emissions from the installations. The inspection statistics for permitted installations are reported to DEFRA annually. **See Performance Indicator 21.**

Impacts	By improving our understanding of the sources of nitrogen dioxide, other than from vehicles, we will be in a better position to monitor these emissions, take the available action to minimise further emissions to air & measure the impact our actions have on concentrations of ambient NO_2 in air. The net result will be improved air quality.
Performance Indicators	**18.** To complete the background NOx assessment by 31/03/11, to have contacted possible sources and explored measures to reduce NOx and to repeat modelling 31/03/2012 as specified in the EP Service Plan **19.** To evaluate all bio mass installations and identify all required measures to protect air quality within 28 days of receipt of information, as specified in the Departmental Service Plan **20.** To investigate all complaints and enquiries in accordance with the EP Service Plan. **21.** Inspections to be carried out in accordance with the EP Service Plan. The programme to identify unregistered installations to be developed by 31/03/11 and to be completed throughout the borough by 31/03/12 as stated in the EP Service Plan.
Cost Benefit	The cost of these actions is estimated to be low to medium. The cost of the inspection strategy is partially funded by the industry via subsistence fees paid in accordance with Defra's fees and charges scheme. Until the investigations into unregistered installations is complete the benefits to air quality cannot be accurately quantified but are likely to be generally low with the opportunity of some medium benefits in specific locations where specific emission issues are addressed.
Time Period	All the above projects are planned for the short to medium time frame
Ownership	DMBC

7.6 Action DAQAP6: Promoting Information and Education

DMBC has several ongoing & planned projects to educate and disseminate information to the Public about Air Quality and the actions that the public can take to help improve air quality in the Borough.
This action has the potential to benefit air quality in **all areas**.

Publicity for Air Quality

The Healthy Towns Project (See 4.1) will increase the use of cycles & walking around the 5 identified Hub sites and routes across the Borough by the provision of additional cycle ways & footways. A publicity campaign is currently being devised will be launched by the end of 2010 to notify the public of this initiative. **See Performance Indicator 22.**

Local & District Centre development / regeneration plans are issued for consultation to the public for issues affecting air quality before the plans are implemented. Typical examples include the Cradley and Pensnett Regeneration Plans (See 4.4).

Effective Use of Websites

The DMBC website currently displays air quality data and is to be upgraded to show the air quality monitoring locations through out the Borough. The website has an educational section which will be further developed to become interactive encouraging a greater understanding of Air Quality and the consequences of individuals' actions. **See Performance Indicator 23.**

The monitoring information collated by DMBC is displayed on the WMAQG's website and is updated daily. See http://www.**wmair**.org. **See Performance Indicator 24.**

Awareness Raising Of Air Quality Issues at Schools within Dudley

EP Officers are undertaking a school education initiative to raise pupils and teachers awareness of air quality issues. A target of five schools/colleges per year will be visited as part of this initiative. NOx diffusion tubes will be provided at the schools and colleges if they are suitably located for air quality monitoring purposes. A target of 5 school sites per year will be monitored. **See Performance Indicator 25.**

Impacts	By educating people about air quality in their region it is hoped to increase awareness of the consequences of vehicle emissions and to encourage modal shift to alternative forms of transport. This education initiative in schools will improve child health by encouraging fewer journeys to and from school in the car.
Performance Indicators	**22.** The EP Service Plan 2010 / 11 will require that consideration is given to air quality issues as a part of the Healthy Town initiative publicity campaign. **23.** To complete the development and the DMBC website to be fully operational by 31/03/11 as identified in the EP Service Plan **24.** To meet the 90% target in the EP Service Plan for ensuring DMBC data is submitted and displayed on the W Mids AQ website. **25.** To carry out the schools education initiative annually at 5 educational establishments and deploy NOx diffusion tubes as appropriate as identified in the EP Service Plan.
Cost Benefit	The cost of these enterprises is estimated to be medium. The benefits to air quality are likely to be low to start with but as momentum is gained there will be a greater positive impact on improving Air Quality.
Time Period	All the above measures will take place in the short to medium time frame.
Ownership	DMBC and staff seconded from the Dudley PCT.

7.7 Action DAQAP7: Encouraging Modal Shift

DMBC has several projects to encourage modal shift not only amongst the employees of Dudley council but throughout the borough in schools, businesses and for the general public. This action has the potential to benefit air quality in **all areas**.

Dudley Employees

DMBC Travel Plans for employees
This initiative contains a package of measures promoting sustainable travel choices to employees and offering alternative ways of travelling to the private vehicle; it falls within the remit of the Government's Green Transport Plan.
The target is to reduce single car occupancy by 1% by 2012. Performance against this target will be monitored by DMBC's Travel to Work Survey carried out bi-annually.
See Performance Indicator 26.

Assisted Bike Purchase Scheme for DMBC Employees
This is a tax free benefit to enable employees to purchase bicycles for cycling to work made under the provisions of the Finance Act 1999, Cycle to Work Guarantee, Dept of Transport & Governments Green Transport Plan.
The target is to Increase cycling by Dudley Council employees by 1% by 2012 and this will be monitored by DMBC's Travel to Work Survey carried out bi annually.
See Performance Indicator 27.

New Developments and Voluntary Uptake by Businesses

Travel Plans are required for new developments above a stated threshold they are promoted for voluntary uptake by businesses with 50 or more employees. The details of the schemes are provided in the DMBC Parking Standards & Travel Plans SPD 2007 (See 3.4.6).
See Performance Indicator 28.

The target is that 30% of employees working for organisations within Dudley MB shall be committed to work place travel plans by 2011.

Travelwise for the General Public Schools and Businesses

The TravelWise brand is a marketing travel awareness campaign aimed at influencing people's travel behaviour towards more sustainable travel options. This falls within the remit of the Department of Transport White Paper – The Future of Transport, Making Smarter Choices Work.

A schools website has been launched and the business Website will be launched for 2011.
See www.schooltravelwise.org.uk

The changes the campaign brings about are assessed by monitoring the awareness of TravelWise brand, and travel mode changes. Annual Surveys are carried out by West Midlands, TravelWise & Centro.

Schools Initiative

This initiative is to ensure that all schools have active travel plans. Currently 92% of the schools in Dudley MB have active travel plans. The Department for Children, Schools and Families, DCSF, has set a target of 100% of schools to have active travel plans by April 2010. In addition National indicator for travelling for school, N198 requires a 1% decrease in car travel to school and from school per year.
See Performance Indicator 29.

Impacts	By encouraging people to use alternative modes of transport to the private vehicle, vehicle emissions will be reduced lowering levels of NO_x. At the same time there will be reduced CO_2 emissions and if the option of walking and/or cycling is chosen there will be associated health benefits.
Performance Indicators	**26.** See LTP 6, 6A and 7 in DAQAP3 **27.** LTP 3 - A 1% increase in the cycling index between 2003/4 and 2010/11 **28.** 30% of all employees to work in organisations committed to work place travel plans by 2011 - the Engineering, Traffic and Transportation Service Plan. **29.** 100% of schools to have travel plans by 2011 - the Engineering, Traffic and Transportation Service Plan
Cost Benefit	The cost of these enterprises is estimated to be medium to high. The benefits to air quality are likely to be low to start with but as momentum is gained there will be a greater positive impact on improving Air Quality.
Time Period	All the above projects are planned for the short to medium time frame
Ownership	DMBC & Centro

7.8 Action DAQAP8: Leading By Example

DMBC has several projects that lead by example, some of which are listed under Actions DAQAP3 Reducing Vehicle Emissions and DAQAP7 Encouraging Modal Shift. This action has the potential to benefit air quality in **all areas**.

DMBC Carbon Management Plan

The DMBC Carbon Management Plan is currently being developed as part of the Green Dudley Initiative (See 4.3). The plan will set out interventions including sustainable transport, energy efficiency, asset management and low carbon technologies to reduce carbon against an annual reduction target in meeting the Carbon Reduction Commitment (CRC). Reduction in Carbon use in vehicles and buildings will also bring about a reduction in emissions of NO_2. The achievements of the carbon management plan will be reported in National Indicator 185 (CO_2 reduction from Local Authority Operations) and consequently the reduction in NO_2 can be calculated. **See Performance Indicator 30.**

DMBC Reduction in Car Mileage Budget for Council Officers

A reduction of 5% has been imposed on the budget to finance business car mileage for council officers for the year 2010 / 11. The effect of this will be to reduce mileage and hence vehicle emissions arising from vehicles driven by Council Officers whilst at work. The implementation of this measure will be monitored by the budget holders and reported to Heads of Service. **See Performance Indicator 31.**

Impacts	Both of these initiatives will reduce damaging gases released to the atmosphere. The reduction in car mileage will additionally save public funds, reduce congestion on the highway network and lead to fewer accidents.
Performance Indicators	**30.** NI 185 and CRC **31.** Head of Service Action Plan 2010/11
Cost Benefit	The cost of reducing car mileage is low and the cost of developing the Carbon Management Plan is Medium but the cost of implementing the Plan cannot be established until the Plan is fully developed. The Air Quality benefit of these measures is considered to be low.
Time Period	The time frame for these initiatives is short to medium.
Ownership	DMBC

8 Conclusions

Completion of a Further Assessment of air quality has enabled DMBC to carry out additional NO_2 monitoring and confirm exceedences of the annual mean NO_2 AQO at fifteen locations across the borough, thereby justifying the decision to declare an AQMA in December 2007. The extent of the AQMA is defined by the borough boundary, and this has enabled DMBC to prepare this AQAP in which actions can be taken anywhere in the borough to improve air quality at the exceedence locations.

A full analysis of source contributions and other relevant factors has been compiled to help understand the causes of NO_2 pollution in these areas and provide focus for the development of the AQAP. Significant factors included high traffic flows, emissions from stationary and queuing traffic, gradients in excess of 2.5%, residential properties located at rear-of-pavement and located within street canyons. Significant NO_x contributions from HGVs an/or buses and coaches were also identified in all of the locations.

Preparation of the AQAP has focused on measures to reduce traffic congestion, improve the public transport offering, change peoples travel patterns and reduce regional background concentrations with a number of council led initiatives.

The AQAP provides background information on a range of national, regional and local policies and other related projects and initiatives which have been duly considered in the compilation of the plan. A range of improvement actions have been considered and those rejected at the planning stage have been highlighted in this report with appropriate justification.

The plan contains 8 key action areas and a host of specific measures to tackle air quality issues a both a local and borough wide level. The measures will be implemented in clearly identified timescales and the delivery of the plan will be measured against a total of 31 key performance indicators. DMBC will report progress on the implementation of the plan to DEFRA on an annual basis.

A conservative estimate of compliance timescales has been undertaken as part of the Further Assessment and indicated that 9 of the 15 areas are likely to achieve compliance within the short-medium timescale associated with the lifetime of the next generation WMLTP. Positive intervention via the action plan will allow timescales to be further accelerated in many of these and the remaining six areas.

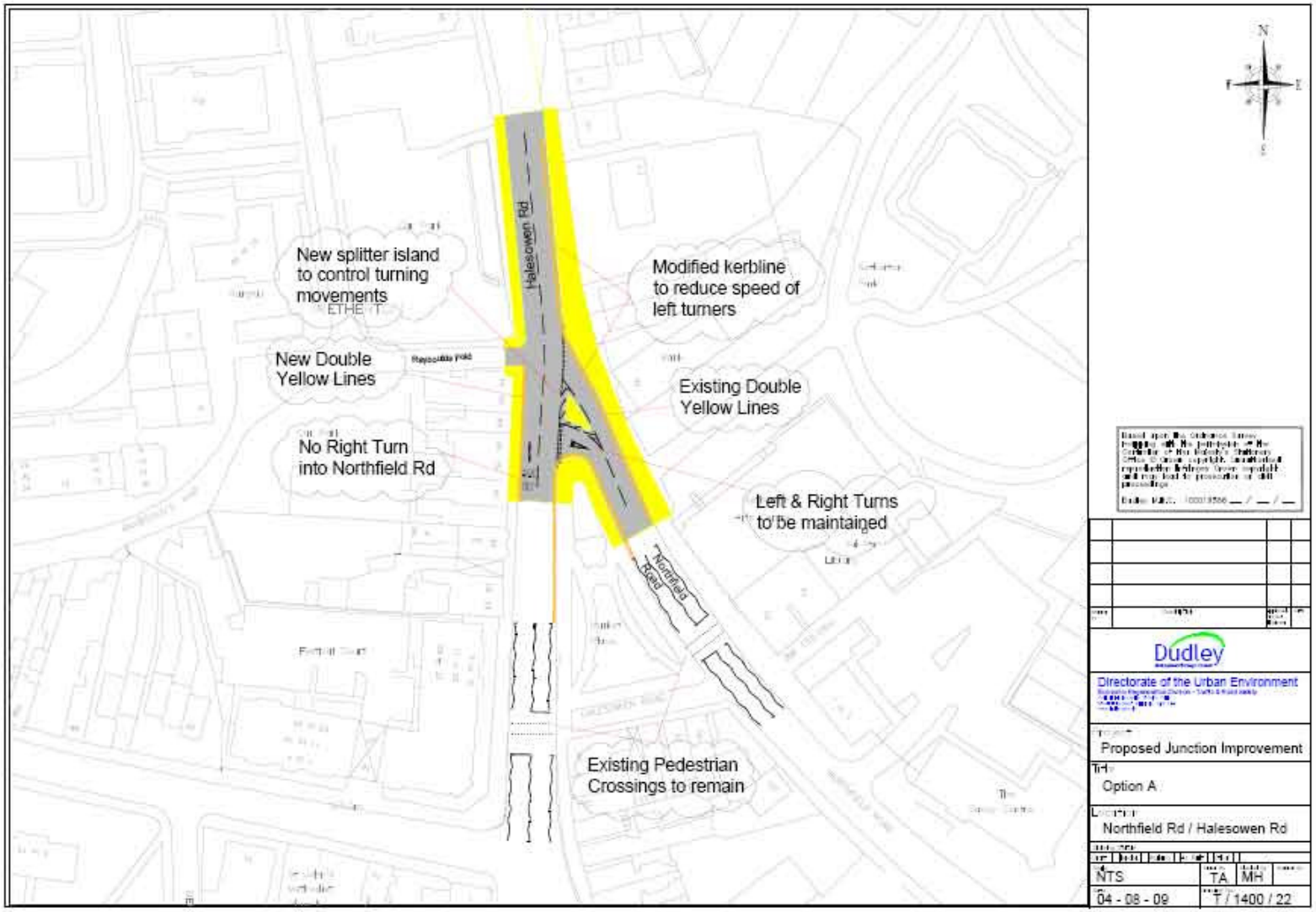
9 References

1 DEFRA (2009) Local Air Quality Management Technical Guidance LAQM.TG(09)
2 DEFRA (2009) Local Air Quality Management Policy Guidance LAQM.PG(09)
3 DMBC (2009) 2009 Brierley Hill AQAP Progress Report
4 DMBC (2009) 2009 Air Quality Updating and Screening Assessment
5 DMBC (2010) Further Assessment of Air Quality
6 DEFRA (2009) Air Quality Strategy for England, Scotland, Wales and Northern Ireland
7 Environmental Protection UK (2006): Development Control: Planning For Air Quality
8 DMBC (2008) Development Control and Air Quality Policy

10 Glossary and Abbreviations

AADT	Average Annual Daily Traffic
APR	Annual Progress Report
AQAP	Air quality action plan
AQMA	Air quality management area
AQO	Air quality objective
BHAAP	Brierley Hill Area Action Plan
BHSAN	Brierley Hill Sustainable Access Network
CEPOG	Chief Engineers And Planning Officer's Group
CMP	Carbon Management Plan
CRC	Carbon Reduction Commitment
DEFRA	Department Of The Environment, Food And Rural Affairs
DMBC	Dudley Metropolitan Borough Council
DTS	Dudley Transport Strategy
EP	Environmental Protection
EPUK	Environmental Protection UK
FPN	Fixed Penalty Notice
IPPC	Integrated Pollution Prevention & Control
LAA	Local Area Agreement
LAQM	Local air quality management
LDF	Local Development Framework
LTP	Local Transport Plan
MBC	Metropolitan Borough Council
NAQS	National Air Quality Strategy
NIS	National Area Agreement
NO_2	Nitrogen dioxide
PM_{10}	Fine particulate matter (<10 micron aerodynamic diameter)
PPS	Planning Policy Statement
PCT	Primary Care Trust
RES	Regional Economic Strategy
RET	Roadside Emissions Testing
RSS	Regional Spatial Strategy
RTS	Regional Transport Strategy
SI	Statutory Instruments
SPD	Supplementary Planning Document
SPG	Supplementary Planning Guidance
SRS	Safer Routes to School
SVD	Selective Vehicle Detection
UDP	Unitary Development Plan
UK	United Kingdom
USA	Updating & Screening Assessment
UTC	Urban Traffic Control
VOSA	Vehicle and Operator Services Agency
WM	West Midlands
WMAQG	West Midlands Air Quality Group
WMAMMS	West Midlands Area Multi-Modal Study
WMEDB	West Midlands Emissions Database
WMLTP2	West Midlands Local Transport Plan, 2nd round (2005/6 to 2010/11)
WMLTP3	West Midlands Local Transport Plan, 3rd round (2010/11 to 2015/16)
WMRES	West Midlands Regional Economic Strategy
WMRSS	West Midlands Regional Spatial Strategy

Appendix 1 Proposed Layout of Road Scheme for Area 1, Netherton



Appendix 2 Proposed Layout of Road Scheme for Area 12, Burnt Tree Island