



**Sandwell**  
Metropolitan Borough Council

# **AIR QUALITY ACTION PLAN**

## ***DRAFT FOR CONSULTATION***

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## **Executive Summary**

Clean air is essential for improving quality of life and for improving people's health. The government have set objectives for limiting the concentrations of a range of pollutants, which can have an adverse impact upon health.

This document sets out the work carried out by Sandwell MBC in order to discharge its obligations under Part IV of the Environment Act 1995. This Act requires all local authorities to regularly review and assess air quality within their boundaries. Where pollutant concentrations exceed national objectives the local authority must declare an air quality management area (AQMA) and produce an action plan detailing how they intend to improve air quality within these areas.

This process has shown that Sandwell will comply with the objectives for the majority of pollutants for which objectives have been set in the governments Air Quality Strategy. There are however a number of areas in which pollutant concentrations have been found to exceed the annual mean nitrogen dioxide (NO<sub>2</sub>) objective. Sandwell MBC has identified thirteen areas that exceed this objective and as a result declared the whole borough an AQMA. This Air Quality Action Plan sets out the work that is currently being undertaken and that is in progress to improve air quality within the areas of exceedance and the borough as a whole.

The principle source of NO<sub>2</sub> pollution has been found to be road transport. Though emission control technology is continually improving the emissions from vehicles, these technological advances can only partially mitigate the effects of increased road traffic.

This air quality action plan has been produced in co-ordination with the various key stakeholders both within the council and external bodies. Existing policies and strategies were reviewed and additional actions were identified. The air quality, economic and social impacts of each action were considered and a cost benefit analysis was carried out for each proposal.

As a result, 23 actions to reduce NO<sub>2</sub> levels within the specific areas of exceedance and 29 actions to improve NO<sub>2</sub> generally across the borough have been identified. Due to the transport related nature of the pollution, this action plan is closely linked with and contains many of the actions detailed in the Local Transport Plan (LTP2).

The complexity of atmospheric chemistry means that there is some uncertainty surrounding the level of reduction in oxides of nitrogen that would be required to achieve a given reduction in nitrogen dioxide in order to comply with the objective. It is also difficult to predict the exact air quality improvement that can be expected from many of the actions proposed. Therefore, it is not possible to predict with confidence whether these actions will achieve the objective, but the plan is considered to strike an appropriate balance between the direct and indirect costs of taking action and the benefit in terms of air quality.

During the implementation of the action plan any improvements in air quality will be closely monitored. The action plan will be regularly reviewed and any further opportunities to improve air quality will be considered.

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## **1. INTRODUCTION**

- 1.1. Concern over the effects of air pollution, primarily from industrial and road transport sources has led to the UK government introducing a national framework for air quality management, which has been implemented under the requirements of Part IV of the Environment Act 1995. This Act led to the National Air Quality Strategies of 1997 and 2000 that set out the governments statutory objectives in relation to seven key pollutants:
  - Nitrogen Dioxide
  - Particulate Matter (PM<sub>10</sub>)
  - Benzene
  - 1,3 – Butadiene
  - Lead
  - Sulphur Dioxide
  - Carbon Monoxide
- 1.2. For each pollutant an objective has been set with specified limit values and dates by which these values should be achieved. The national air quality objectives are shown in Appendix 1.
- 1.3. The Act requires all local authorities to regularly review and assess air quality within their boundaries. If the process indicates that the national objectives will not be achieved within the statutory timeframe then the local authority is required to designate an Air Quality Management Area (AQMA). The local authority is then required to produce an Air Quality Action Plan to demonstrate how they intend to improve air quality in order to meet the objectives.
- 1.4. Air quality reviews and assessments in Sandwell have identified that the annual mean nitrogen dioxide objective is exceeded at a number of locations. As a result Sandwell MBC has declared the whole borough an AQMA.
- 1.5. The purpose of this report is to outline proposed actions at a local level that will play an important role in helping to meet national air quality objectives across the borough. It contains an examination of the proposed actions and their potential impacts both direct and indirect. The cost effectiveness of each of the proposed actions is analysed and a timescale for the implementation of the proposed measures is presented.

## **2. AIR QUALITY REVIEW AND ASSESSMENT IN SANDWELL MBC**

- 2.1. Sandwell MBC completed the first round of review and assessment in 2003. A combination of air quality monitoring and sophisticated modelling was used to predict whether the air quality objectives were likely to be achieved in the specified time.

This process demonstrated that the required standards for benzene, carbon monoxide, lead, sulphur dioxide, PM<sub>10</sub>, and 1,3 butadiene are likely to be achieved by the required dates. However, it predicted that exceedances of the annual average nitrogen dioxide (NO<sub>2</sub>) objectives were likely due to traffic emissions in six locations:

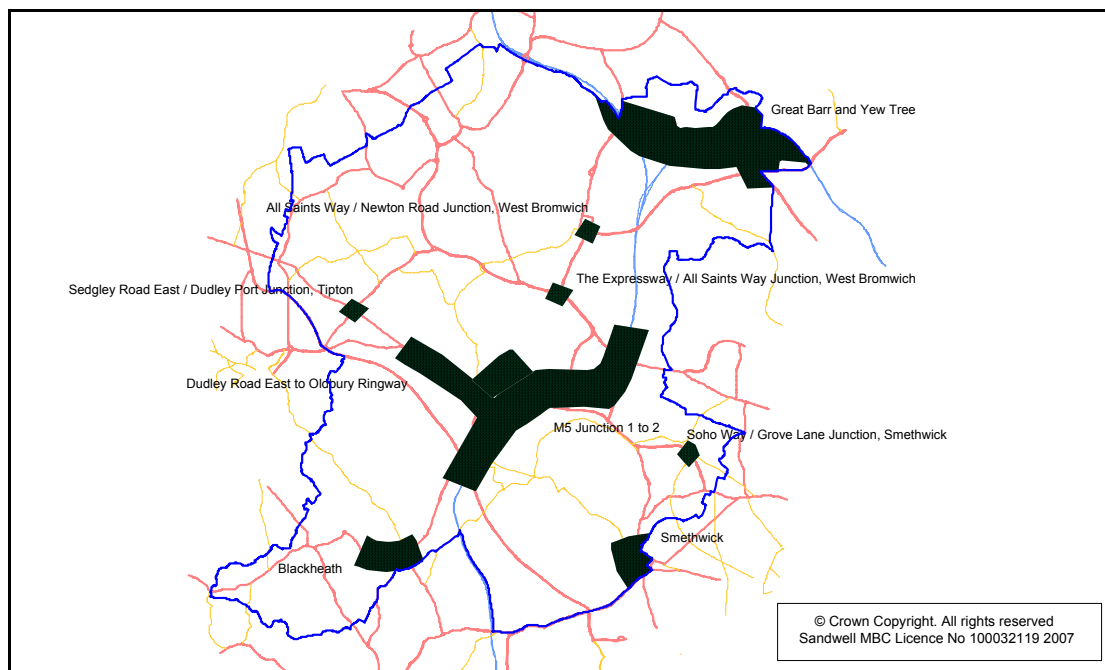
- The area in and around Birmingham Road Oldbury
- The area to the north of junction 8 on the M6 – Yew Tree
- The area to the north west of junction 7 M6 - Great Barr
- The area to the south of junction 8 M6 – Great Barr
- The area to the south east of junction 7 M6 – Great Barr
- The area to the south west of junction 7 M6 – Great Barr

As a result Sandwell MBC declared each area as an AQMA.

2.2. Air quality review and assessment is a continuing process, in 2003 Sandwell began the second round of review and assessment with the production of an Updating and Screening Assessment (USA). This concluded that there were a number of additional areas that had the potential to exceed the air quality objectives, mainly with respect to the annual mean nitrogen dioxide objective due to emissions from road traffic. Detailed assessments have recently been completed for each of these areas.

2.3. These assessments concluded that there are thirteen areas that exceed the 2005 air quality objective for the annual mean NO<sub>2</sub>. The areas are listed below; Figure 2.1 shows how the areas of exceedance are distributed across the borough. The green shading represents areas where the annual mean NO<sub>2</sub> objective is exceeded.

1. Oldbury Ringway / Birmingham Road (A457), Oldbury
2. Dudley Road East / Roway Lane, Oldbury
3. Motorways - M6 J7-J8 / M5, Great Barr  
- M5 J1-J2, Oldbury & West Bromwich
4. Newton Road / Birmingham Road (A34), Great Barr
5. Bearwood Road, Smethwick
6. Oldbury Road / Birmingham Road, Blackheath
7. High Street / Powke Lane, Blackheath
8. Bromford Road, (including Kelvin Way / Brandon Way junction) West Bromwich
9. Trinity Way / Kenrick Way, West Bromwich
10. All Saints Way / Expressway, West Bromwich
11. All Saints Way / Newton Road, West Bromwich
12. Sedgley Road East / Dudley Port, Tipton
13. The Soho Way / Grove Lane / Cranford Street junction, Smethwick

**Figure 2.1 – Areas of Exceedance**

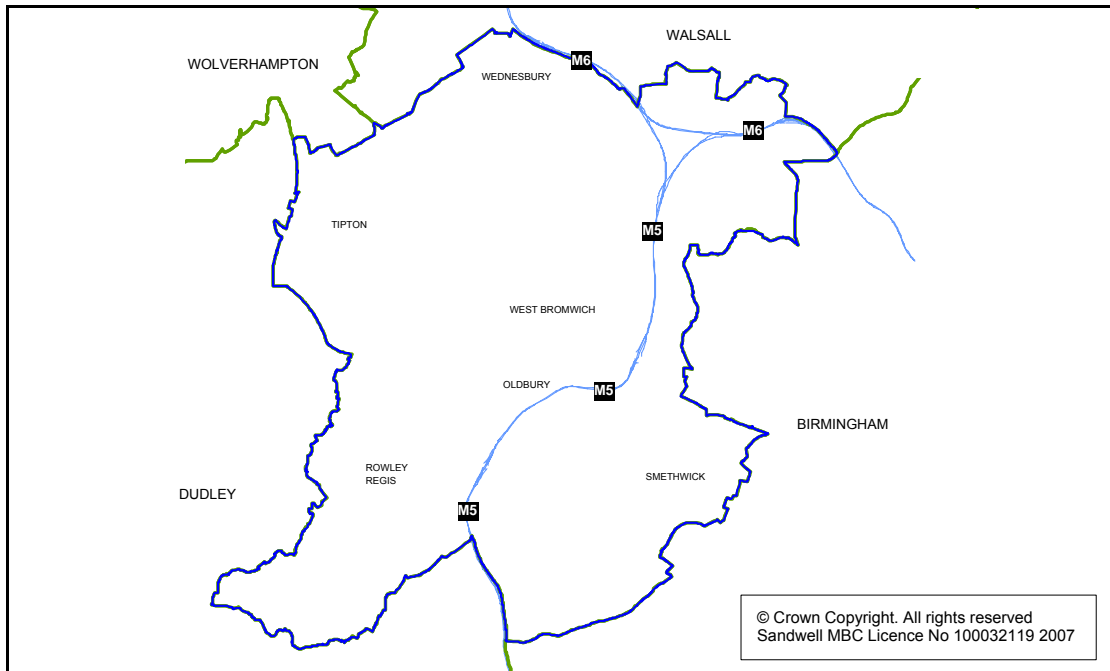
- 2.4. The identification of the additional areas of exceedance resulted in the decision to make a borough wide declaration for the annual mean NO<sub>2</sub> objective. The existing six AQMA's have been revoked and replaced with one AQMA covering the entire borough. Although the whole borough will be declared an AQMA the action plan will still have a focus upon the individual areas of exceedance that have been identified.
- 2.5. The most recent USA carried out in 2006 concluded that there are two additional areas, the first in West Bromwich and the second in Smethwick, which are exceeding the national objective for NO<sub>2</sub>. These areas have been included in this action plan.

### 3. LOCAL ISSUES IN SANDWELL

- 3.1. Sandwell MBC is located in the heart of the West Midlands within the Black Country area, it is surrounded by four local authorities, Birmingham, Walsall, Wolverhampton and Dudley as illustrated in Figure 3.1.
- 3.2. It has a population of approximately 280,000 spread over an area of approximately 8,600 hectares. There are six main towns that make up Sandwell: Oldbury, Rowley Regis, Smethwick, Tipton, Wednesbury and West Bromwich.

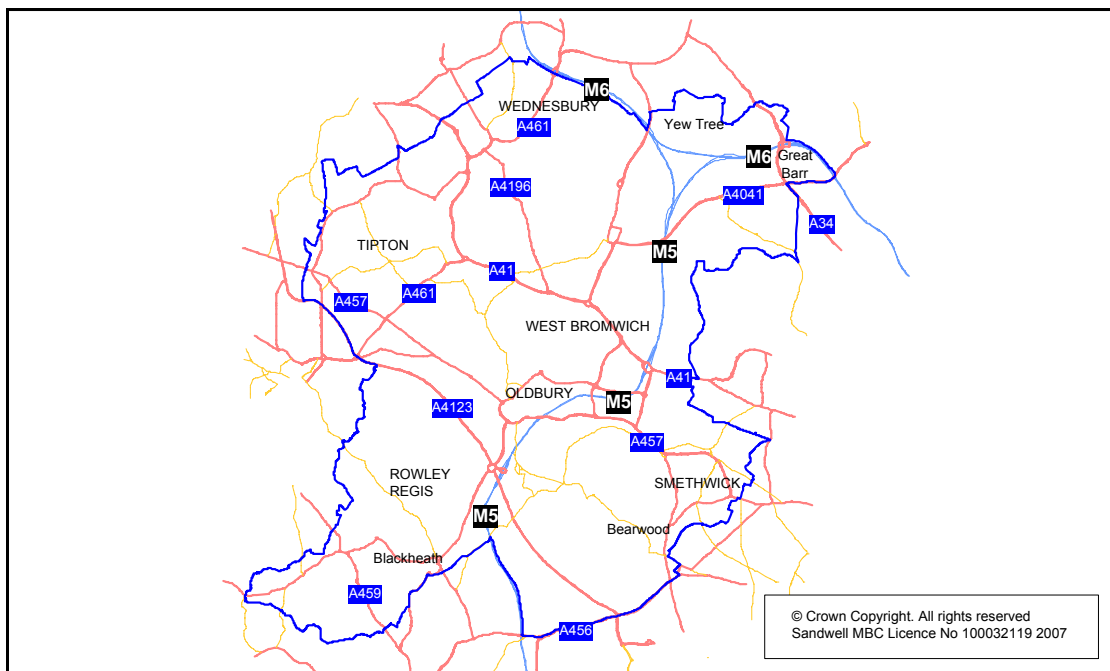


**Figure 3.1 – Sandwell MBC and its Neighbouring Authorities**



3.3. The borough has a complex road network with a number of major roads and two heavily trafficked motorways, M5 and M6 traversing the borough. Large sections of these motorways are elevated. The road network is illustrated in Figure 3.2.

**Figure 3.2 – Road network in Sandwell Borough**



#### 4. SOURCES OF AIR POLLUTION WITHIN SANDWELL

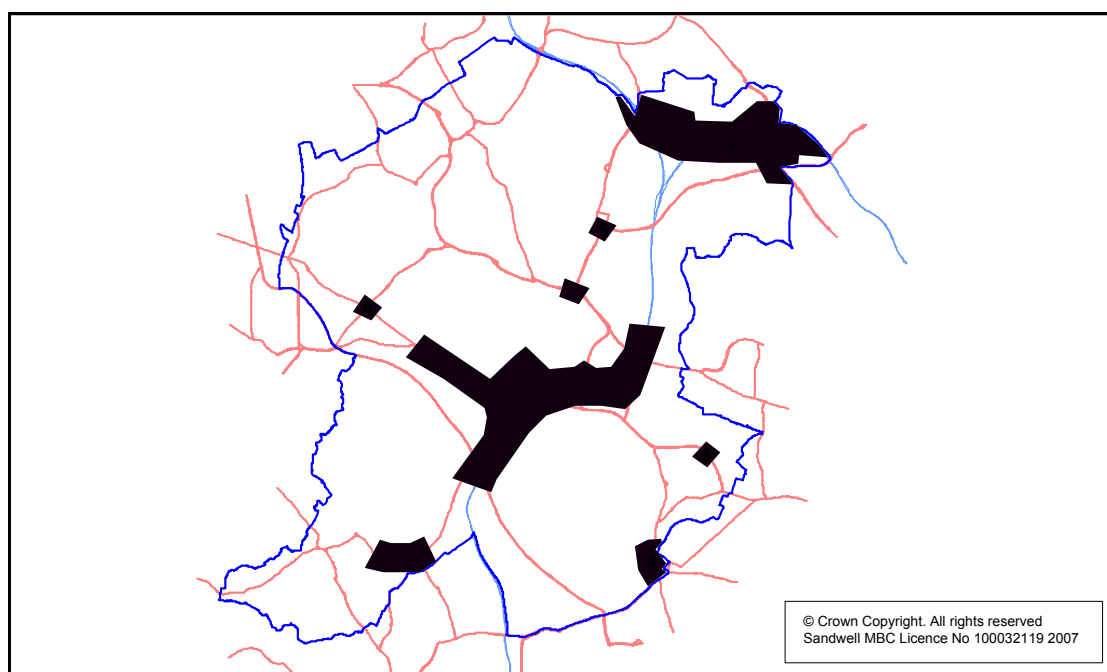
- 4.1. The pollutant of concern identified in each of the areas of exceedance was nitrogen dioxide. Nitrogen dioxide (NO<sub>2</sub>) and nitric oxide (NO) are both oxides of nitrogen and are collectively known as nitrogen oxides (NO<sub>x</sub>). All combustion processes produce NO<sub>x</sub> emissions, largely in the form of NO, which is then converted to NO<sub>2</sub> mainly as a result of reaction with ozone in the atmosphere. Nationally the primary sources of oxides of nitrogen are the transport sector and combustion processes. It is nitrogen dioxide that is associated with adverse effects upon human health. In some individuals exposure to high concentrations of NO<sub>2</sub> can precipitate or exacerbate episodes of asthma. Childhood exposure to ambient NO<sub>2</sub> can increase the risk of respiratory infections and may lead to poorer lung function in later life.
- 4.2. The source apportionment work for Sandwell was carried out using the modelling software Airviro (version 3.1) and the current West Midlands emissions database. Mott MacDonald's Joint Data Team provided traffic data within this emissions database. The West Midlands emissions database is currently being updated. Once this work has been completed it will be possible to issue an update to the source apportionment work. As it has been identified that traffic is the main source of NO<sub>x</sub> in Sandwell's exceedance areas, the source apportionment work has focused entirely on traffic sources. The contribution of industrial, commercial and domestic sources is minimal across the borough and will not be a focus for action planning.
- 4.3. With reference to the road traffic data, the 2005 vehicle splits that have been applied in the source apportionment work are as follows:

Pre Euro Diesel	0.9%
Euro 1 Diesel	3.4%
Euro 2/3 Diesel	18.1%
Pre Euro Petrol	9.5%
Euro1 Petrol	10.3%
Euro 2/3 Petrol	43.1%
Light Goods Vehicles (LGV)	10.3%
Heavy Goods Vehicles (HGV)	3.4%
Buses	1.0%

- 4.4. Thirteen areas of exceedance have been identified and are considered in this action plan (see section 2.3 and figure 2.1). However, for the purposes of source apportionment some of the areas of exceedance have been grouped together and Sandwell borough as a whole has also been assessed. The areas considered for source apportionment are detailed below and are illustrated in Figure 4.1.

1. Great Barr and Yew Tree - M6 J7-8 and  
- M5 J1-2 and the  
- Newton Road / A34 junction
2. Oldbury - Oldbury Ringway / Birmingham Road (A457)  
- Dudley Road East / Roway Lane  
- Bromford Road
3. Blackheath - Oldbury Road Birmingham Road  
- High Street / Powke Lane
4. Bearwood Road
5. All Saints Way / Newton Road
6. Sedgley Road East / Dudley Port junction, Tipton
7. The Expressway / All Saints Way junction, West Bromwich
8. Soho Way / Grove Lane junction, Smethwick

**Figure 4.1 - Source Apportionment Areas**



- 4.5. The results of the source apportionment assessment are illustrated in the form of pie and bar charts. Figure 4.2 illustrates the source apportionment for the whole borough. It shows that HGV's are by far the biggest source with 51% of NO<sub>x</sub> generated by HGV's. Pre Euro petrol cars are also a significant source, contributing 19% of the NO<sub>x</sub>.

Figure 4.2 – NOx Source Apportionment for Sandwell Borough in 2005

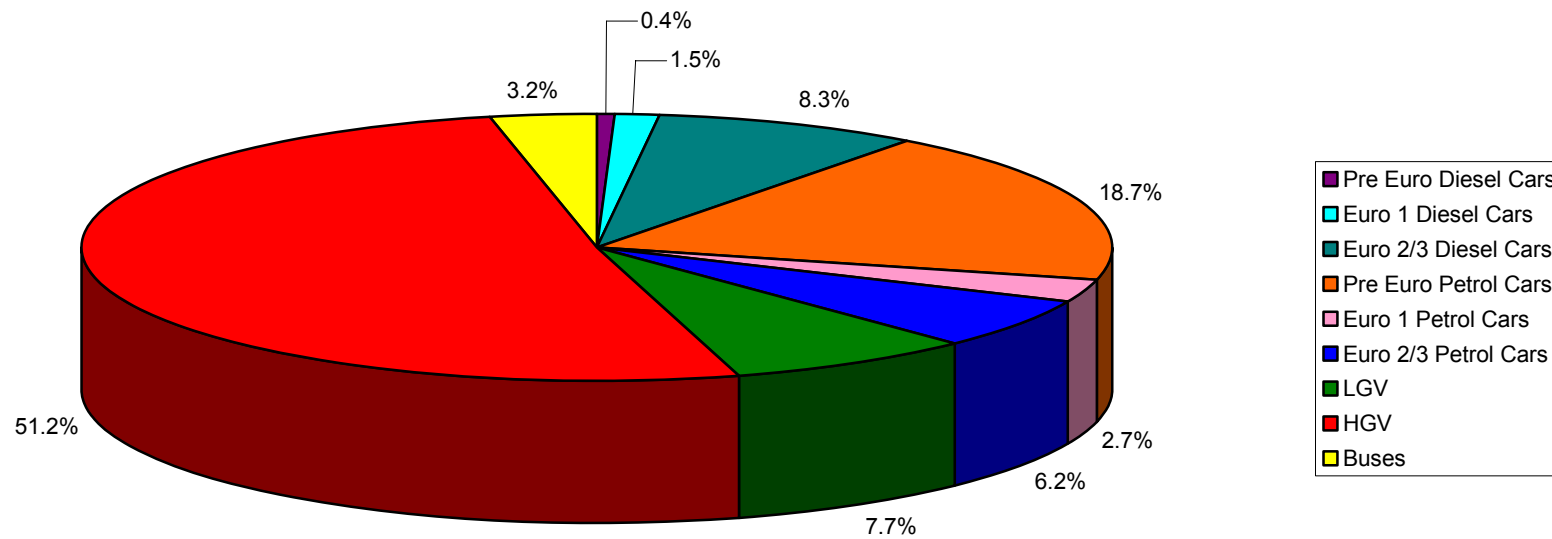
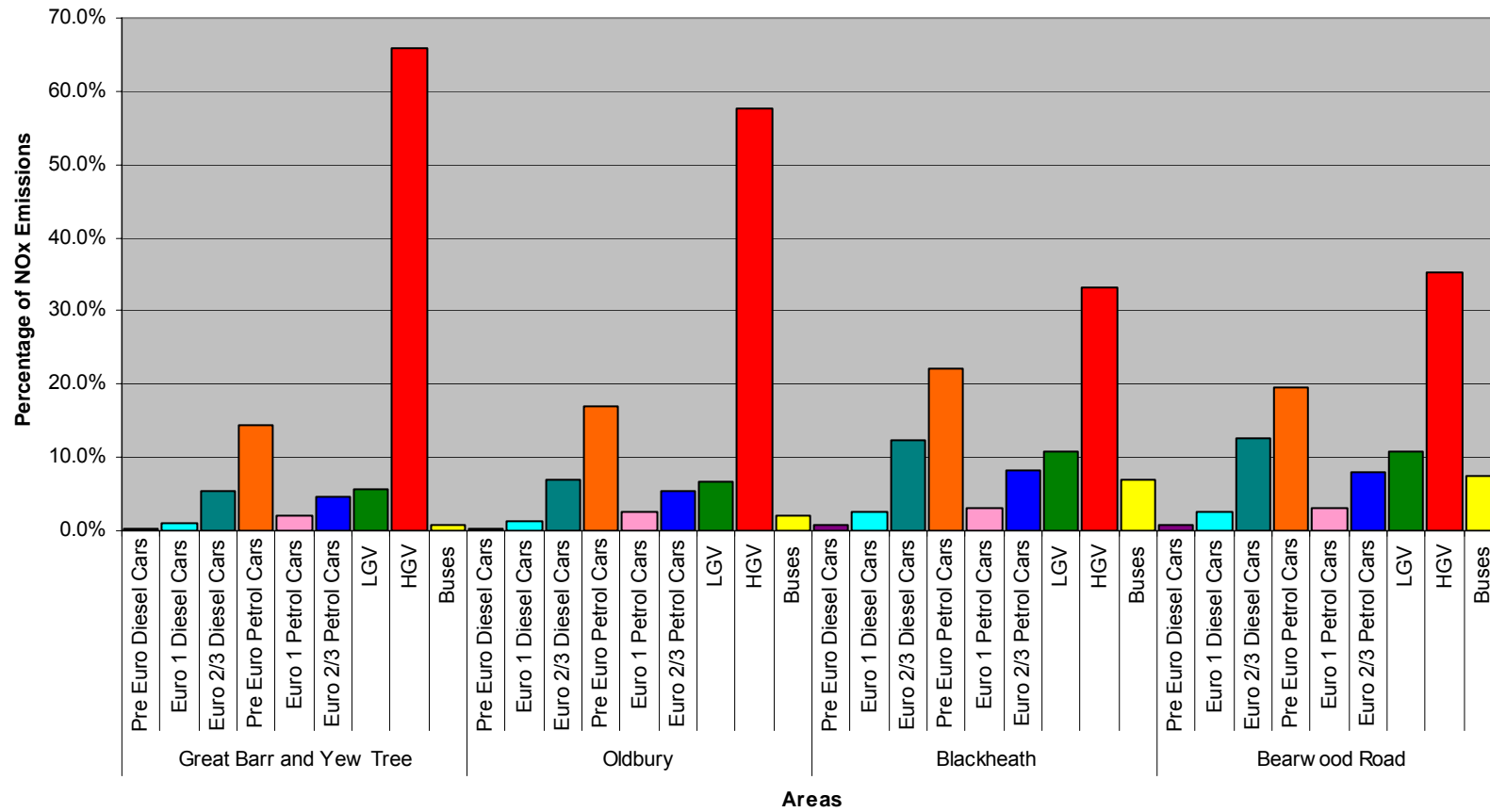
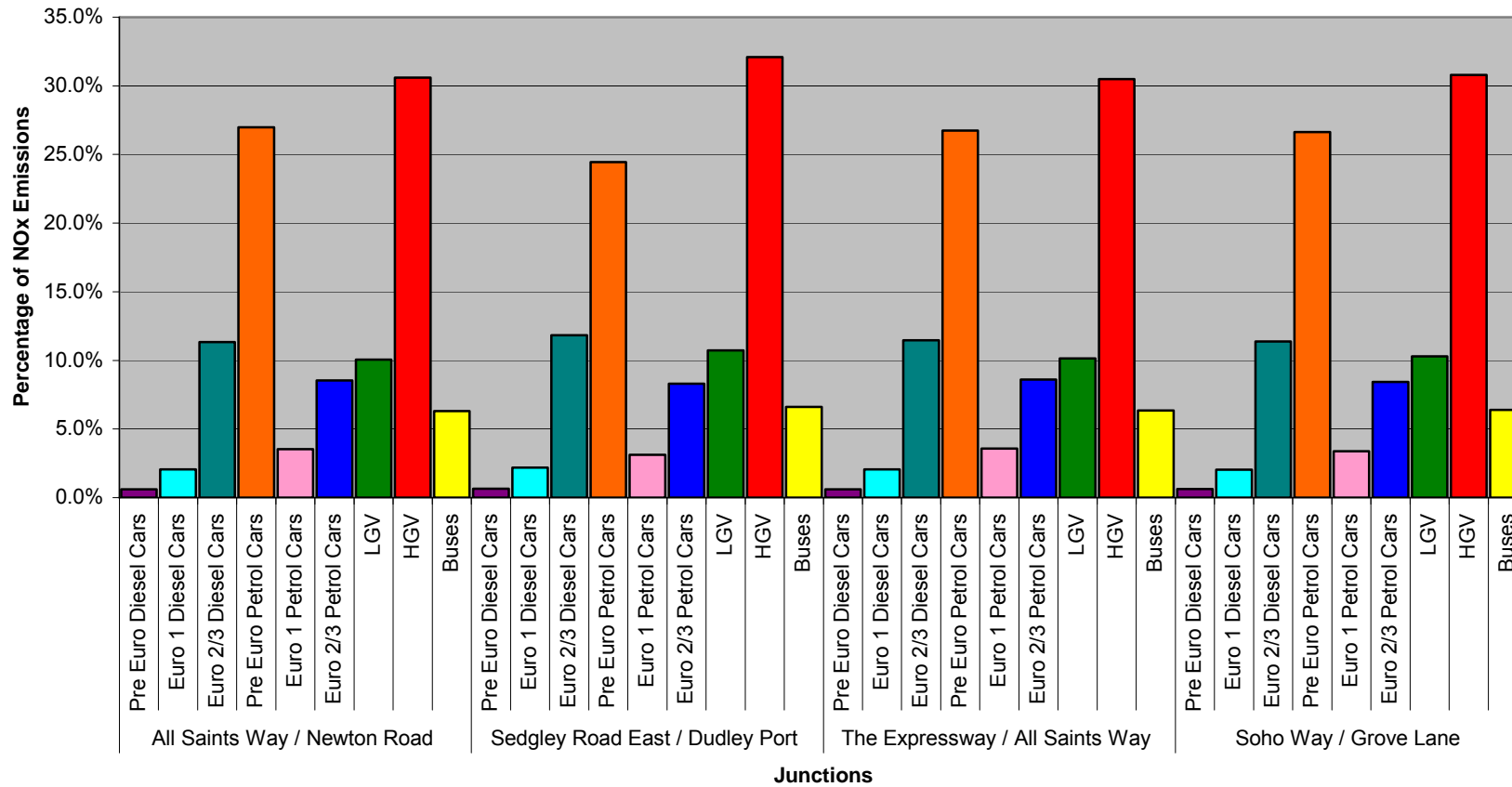


Figure 4.3 – NOx Source Apportionment for Exceedance Areas in 2005



- 4.6. Figure 4.3 shows the source apportionment for Great Barr / Yew Tree, Oldbury, Blackheath and Bearwood Road. For all four of these areas the split between vehicles follows a similar pattern. HGV's are by far the largest source of NO<sub>x</sub> emissions; pre Euro petrol cars are also a significant contributor in these areas. In both Great Barr / Yew Tree and Oldbury HGV's are the source of the vast majority of NO<sub>x</sub> emissions and the contribution from buses is very low. This is due to the heavy influence of the motorway emissions in these areas.
- 4.7. In Oldbury source apportionment work predicts that 69% of NO<sub>x</sub> emissions are generated by motorway traffic. Though it should be noted that the motorway is elevated along this section and many of the receptors in this area live alongside the A457 Birmingham Road.
- 4.8. In Great Barr and Yew Tree approximately 90% of NO<sub>x</sub> emissions are generated by motorway traffic. Although it is clear that the motorway traffic in this area is the cause of much of this area of exceedance, it should also be noted that traffic going through the Newton Road and Birmingham Road junction is the cause of exceedances at receptors close to this junction.
- 4.9. For both Blackheath and Bearwood Road, the distribution of emissions sources is more even; this is likely to be due to the fact that the motorway does not influence these areas. However, HGV's and pre Euro petrol cars are still the dominant source of NO<sub>x</sub>. Bus emissions are more significant in these smaller areas, particularly along Bearwood Road.

**Figure 4.4 – NOx Source Apportionment at Exceeding Junctions in 2005**



- 4.10. Figure 4.4 illustrates the results of the source apportionment work carried out for four junctions of concern. Once again in all four areas a similar vehicle split is illustrated. Overall the split at these four junctions is similar to that at the smallest areas of Blackheath and Bearwood Road. Again HGV's are the largest source of NO<sub>x</sub> emissions followed by pre Euro petrol cars, however the difference between these categories and all other vehicle types is not as significant as it is in areas where there is significant amount of motorway traffic. The proportion of bus emissions is significantly higher around all four junctions than in the larger motorway influenced areas.
- 4.11. Although HGV's and buses are a small part of the total traffic composition, they give rise to a large proportion of total NO<sub>x</sub> emissions in the borough. Pre Euro petrol cars also make a significant contribution to NO<sub>x</sub> emissions despite the fact they make up a comparatively small fraction of the total traffic. Consideration should be given at the national level to developing policies to help accelerate the removal of pre Euro vehicles from the road. In addition effort should be made to ensure emissions controls on HGV's and buses are made as stringent as possible and research to reduce the emissions associated with these larger vehicles should be supported. A summary of the results of the source apportionment work is contained in Table 4-1.

**Table 4-1 - Summary of Source Apportionment Results**

Vehicle Type (approximate %age of this vehicle type making up total traffic across the borough in 2005)	Sandwell	Great Barr / Yew Tree	Oldbury	Blackheath	Bearwood Road	All Saints Way / Newton Road	Sedgley Road East / Dudley Port	Expressway / All Saints Way	Soho Way / Grove Lane
Pre Euro Diesel Cars (0.9%)	0.4%	0.3%	0.4%	0.7%	0.7%	0.6%	0.6%	0.6%	0.6%
Euro 1 Diesel Cars (3.4%)	1.5%	1.0%	1.3%	2.5%	2.7%	2.1%	2.2%	2.1%	2.0%
Euro 2/3 Diesel Cars (18.1%)	8.3%	5.5%	7.0%	12.3%	12.6%	11.3%	11.8%	11.5%	11.4%
Pre Euro Petrol Cars (9.5%)	18.7%	14.4%	17.0%	22.1%	19.4%	27.0%	24.4%	26.7%	26.6%
Euro 1 Petrol Cars (10.3%)	2.7%	2.2%	2.5%	3.1%	3.1%	3.5%	3.1%	3.6%	3.4%
Euro 2/3 Petrol Cars (43.1%)	6.2%	4.5%	5.5%	8.3%	8.0%	8.5%	8.3%	8.6%	8.4%



Vehicle Type (approximate %age of this vehicle type making up total traffic across the borough in 2005)	Sandwell	Great Barr / Yew Tree	Oldbury	Blackheath	Bearwood Road	All Saints Way / Newton Road	Sedgley Road East / Dudley Port	Expressway / All Saints Way	Soho Way / Grove Lane
LGV (10.3%)	7.7%	5.6%	6.6%	10.9%	10.9%	10.0%	10.7%	10.1%	10.3%
HGV (3.4%)	51.2%	65.9%	57.6%	33.3%	35.3%	30.6%	32.1%	30.5%	30.8%
Buses (1.0%)	3.3%	0.6%	2.1%	6.8%	7.3%	6.4%	6.8%	6.3%	6.5%

4.12. The source apportionment work shows that particular vehicle types are contributing a majority of the NO<sub>x</sub>. The main vehicles of concern are:

- HGV's in all areas of concern.
- Pre Euro Petrol Cars in all areas of concern.
- Buses along Bearwood Road.

4.13. This suggests that the action plan should target these particular types of vehicle. However, it may prove difficult to apply specific actions locally to target these vehicle types. For example it would not be realistic to restrict HGV movements on the motorway network.

## 5. REDUCTION REQUIRED

5.1. NO<sub>2</sub> and NO are both oxides of nitrogen and can collectively be referred to as nitrogen oxides (NO<sub>x</sub>). Emissions of NO<sub>x</sub> from motor vehicles consist mainly of NO, which is then converted to NO<sub>2</sub> in the atmosphere. The conversion of NO to NO<sub>2</sub> is rate limited if other chemicals are not present and also by the ambient temperature. Hence in the summer the chemical reactions are faster so that more than 80% of the NO<sub>x</sub> might consist of NO<sub>2</sub> whereas in winter the chemical reactions are slower so perhaps only 20% of NO<sub>x</sub> might consist of NO<sub>2</sub>. The overall effect of the atmospheric chemistry is to have a reserve of NO so that a reduction of NO<sub>x</sub> levels does not produce a proportionate reduction in NO<sub>2</sub>. This makes it difficult to predict what level of reduction is required to achieve the objective.

5.2. Table 5-1 shows the level of NO<sub>2</sub> reduction required in each of the areas of exceedance based on the maximum measured NO<sub>2</sub> level.

**Table 5-1 – Maximum NO<sub>2</sub> reduction required**

Location	Maximum measured NO <sub>2</sub> (µg/m <sup>3</sup> ) 2005 <sup>a</sup>	% Reduction in NO <sub>2</sub> emissions required
Oldbury Ringway / Birmingham Road (A457), Oldbury	55.03 (BE)	38%
Dudley Road East / Roway Lane, Oldbury	55.28 (C7A)	38%
M6 J7-J8 / M5, Great Barr and Yew Tree	45.87 (WA)	15%
M5 J1- J2, Oldbury & West Bromwich	46.91 (RA)	17%
Newton Road / Birmingham Road (A34), Great Barr	50.01 (ZQ)	25%
Bearwood Road	59.81 (C10D)	50%
Oldbury Road / Birmingham Road, Blackheath	51.07 (C11A)	28%
High Street / Powke Lane, Blackheath	54.81 (C12A)	37%
Bromford Road, (including Kelvin Way/Brandon Way junction) West Bromwich	49.37 (C5A)	23%
Trinity Way / Kenrick Way, West Bromwich	57.85 (C4D)	45%
The Expressway / All Saints Way	55.30 (C1D)	38%
All Saints Way / Newton Rd	43.55 (C2A)	9%
Sedgley Road East / Dudley Port	54.58 (C13D)	36%
Soho Way / Grove Lane <sup>b</sup>	47.10 (N2A)	18%

<sup>a</sup> maximum measured NO<sub>2</sub> located at a relevant receptor

<sup>b</sup> No monitoring data was collected at this location in 2005 (the figure entered here is for guidance only as it is based upon six months of diffusion tube data that was collected in 2006).

5.4 Table 5.2 shows the approximate percentage reduction in NO<sub>x</sub> required to achieve the 2005 annual mean NO<sub>2</sub> objective when considering the worst-case scenario (i.e. reduction from the maximum NO<sub>2</sub> concentrations recorded in each area in 2005). The annual mean roadside NO<sub>x</sub> concentration has been calculated using the spreadsheet produced by Bureau Veritas and is available on the Air Quality Archive website at the following address [http://www.airquality.co.uk/archive/laqm/tools/nox\\_from\\_no2\\_calculatorv2.xls](http://www.airquality.co.uk/archive/laqm/tools/nox_from_no2_calculatorv2.xls).

Table 5-2 - NO<sub>x</sub> Reduction Required

Location	1 Highest Annual Mean NO <sub>2</sub> (µg/m <sup>3</sup> ) 2005	2 Calculated Total Annual Mean NO <sub>x</sub> (µg/m <sup>3</sup> )	3 Calculated Road Increment Annual Mean NO <sub>x</sub> (µg/m <sup>3</sup> )	4 Background Annual Mean NO <sub>x</sub> (µg/m <sup>3</sup> )	5 Road Increment that would be required to achieve compliance (µg/m <sup>3</sup> ) (106 <sup>a</sup> – column 4)	6 Roadside NO <sub>x</sub> Reduction Required (column 3 – column 5)	7 % Reduction in NO <sub>x</sub> emissions required from local roads (column 6/3)
Oldbury Ringway / Birmingham Road (A457), Oldbury	55.03 (BE)	175.8	100.9	74.8	31.2	69.7	69%
Dudley Road East / Roway Lane, Oldbury	55.28 (C7A)	181.2	111.2	70.0	36	75.2	68%
M6 J7-J8 / M5, Great Barr and Yew Tree	45.87 (WA)	143.6	91.4	52.2	53.8	37.6	41%
M5 J1- J2, Oldbury & West Bromwich	46.91 (RA)	138.3	74.1	64.1	41.9	32.2	43%
Newton Road/Birmingham Road (A34), Great Barr	50.01 (ZQ)	165	111	54	52	59	53%
Bearwood Road	59.81 (C10D)	225.2	178.4	46.8	59.2	119.2	67%
Oldbury Road / Birmingham Road, Blackheath	51.07 (C11A)	175.9	127.6	48.3	57.7	69.9	55%
High Street / Powke Lane, Blackheath	54.81 (C12A)	201.6	159.2	42.4	63.6	95.6	60%
Bromford Road, (including Kelvin Way / Brandon Way junction) West Bromwich	49.37 (C5A)	143.1	68.5	74.6	31.4	37.1	54%

<b>Location</b>	<b>1 Highest Annual Mean NO<sub>2</sub> (µg/m<sup>3</sup>) 2005</b>	<b>2 Calculated Total Annual Mean NO<sub>x</sub> (µg/m<sup>3</sup>)</b>	<b>3 Calculated Road Increment Annual Mean NO<sub>x</sub> (µg/m<sup>3</sup>)</b>	<b>4 Background Annual Mean NO<sub>x</sub> (µg/m<sup>3</sup>)</b>	<b>5 Road Increment that would be required to achieve compliance (µg/m<sup>3</sup>) (106<sup>a</sup> – column 4)</b>	<b>6 Roadside NO<sub>x</sub> Reduction Required (column 3 – column 5)</b>	<b>7 % Reduction in NO<sub>x</sub> emissions required from local roads (column 6/3)</b>
<b>Trinity Way / Kenrick Way, West Bromwich</b>	57.85 (C4D)	190.2	112.7	77.5	28.5	84.2	75%
<b>The Expressway / All Saints Way</b>	55.30 (C1D)	188.5	127.4	61.1	44.9	82.5	65%
<b>All Saints Way / Newton Rd</b>	43.55 (C2A)	132.2	81.6	50.6	55.4	26.2	32%
<b>Sedgley Road East / Dudley Port</b>	54.58 (C13D)	191.1	137.9	53.2	52.8	85.1	62%
<b>Soho Way / Grove Lane<sup>b</sup></b>	47.10 (N2A)	148.3	93.8	54.5	51.5	42.3	45%

<sup>a</sup> This figure is the calculated NO<sub>x</sub> concentration (µg/m<sup>3</sup>) that corresponds to the annual mean NO<sub>2</sub> objective of 40µg/m<sup>3</sup>

<sup>b</sup> No monitoring data was collected at this location in 2005 (the figure entered here is for guidance only as it is based upon the five months diffusion tube data that were collected in 2006).

- 5.5 Although NO<sub>2</sub> levels need to be reduced by between 9% and 50%, the indications are that this would require NO<sub>x</sub> emissions to be reduced by 32% to 75% across the borough. The greatest percentage reduction in roadside NO<sub>x</sub> emissions is required at the Trinity Way / Kenrick Way junction in West Bromwich to comply with the objective. The smallest percentage reduction in roadside NO<sub>x</sub> emissions is required at the All Saints Way / Newton Road junction in West Bromwich. It will be challenging to achieve the level of NO<sub>x</sub> reduction required in order to achieve the NO<sub>2</sub> annual mean objective in a number of areas across the borough. However the implementation of the actions outlined in this plan will contribute to achieving the required reduction and Sandwell MBC will continue to pursue reduction strategies.

## **6. DEVELOPMENT OF THE ACTION PLAN**

- 6.1. To ensure that an action plan is effective, both air quality and non-air quality impacts need to be considered. For this reason a steering group has been established with representatives from the key stakeholders. The steering group consists of representatives from the following organisations:

- Highways Agency
- Sandwell MBC Transportation
- Sandwell MBC Strategic Planning
- Sandwell MBC Highways Direct
- Sandwell MBC Environmental Protection
- Centro
- Travel West Midlands
- Sandwell Agenda 21 Team
- West Midlands Pollution Group
- Chief Engineers and Planning Officers Group (CEPOG)

- 6.2. Discussions were held with all the steering group members to first identify actions proposed under existing policies that are likely to result in an improvement in air quality. The group then considered whether there are any additional actions that could further improve air quality. Focus was given to actions that would specifically reduce NO<sub>2</sub> levels within the areas of exceedance. It was clear however that these actions alone would be unlikely to achieve the air quality objectives in a number of areas consequently consideration was also given to actions to improve air quality across the borough. Finally a cost benefit analysis was carried out for each of the actions identified to assess their feasibility and effectiveness.

6.3. The action plan has considered potential actions under a number of different headings. Although the whole borough has been declared an AQMA it was considered important to ensure focus was maintained on the specific areas of exceedance. Therefore the action plan first considers specific actions to improve air quality in each of the following areas of exceedance:

1. Oldbury Ringway / Birmingham Road (A457), Oldbury
2. Dudley Road East / Roway Lane, Oldbury
3. Motorways - M6 J7-J8 / M5, Great Barr  
- M5 J1-J2, Oldbury & West Bromwich
4. Newton Road / Birmingham Road (A34), Great Barr
5. Bearwood Road, Smethwick
6. Oldbury Road / Birmingham Road, Blackheath
7. High Street / Powke Lane, Blackheath
8. Bromford Road (including Kelvin Way / Brandon Way junction), West Bromwich
9. Trinity Way / Kenrick Way, West Bromwich
10. All Saints Way / Expressway, West Bromwich
11. All Saints Way / Newton Road, West Bromwich
12. Sedgley Road East / Dudley Port, Tipton
13. The Soho Way / Grove Lane / Cranford Street, Smethwick

6.4. It is clear that in the majority of areas of exceedance, the specific actions will not achieve sufficient reductions in NO<sub>2</sub> to meet the objective. Hence, the action plan also considers other actions to improve air quality generally across the borough. These actions have been divided into the following six key areas:

- Improving public transport to reduce traffic volumes
- Improving the road network to reduce congestion
- Using area planning methods for local air quality management
- Reducing vehicle emissions
- Reducing air pollution from industry, commerce and residential areas
- Changing levels of travel demand / promotion of alternative modes of transport

## **7. EXISTING PLANS AND POLICIES RELATED TO ACHIEVING AIR QUALITY OBJECTIVES**

7.1. There are a number of existing plans and policies identified which could improve air quality. Where possible, air quality action plans should support existing and forthcoming plans and policies within the borough and West Midlands Region and vice versa. The following documents contain plans and policies which would impact on air quality and hence have been considered in the action planning process:

- West Midlands Area Multi Modal Study
- Local Transport Plan (LTP)
- West Midlands Transport Green Paper
- Unitary Development Plan
- Community Plan
- Local Agenda 21 Strategy and Environmental Policy Statement and Actions

### **West Midlands Area Multi Modal Study (WMAMMS)**

- 7.2. This study, completed in October 2001, looked at the total demand for travel and establishes a thirty-year framework to provide for an integrated transport system covering all modes, including the more sustainable means of travel such as walking and cycling. The study developed and appraised a large number of options in order to determine their effectiveness.
- 7.3. The study resulted in a plan detailing a package of recommended measures including:
- Major investment in behavioural change and walking & cycling facilities
  - Red routes to improve journey time reliability of all traffic, especially buses
  - A network of metro lines
  - Major heavy rail investment
  - Bypasses of Stourbridge and Wolverhampton with new links and improved roads within the Black Country
  - Road user charging
- 7.4. The 2031 plan was predicted to produce a 15% reduction on the non-motorway network and 2.1% decrease on the motorways in the area. Area wide, the plan is estimated to reduce emissions of NO<sub>2</sub> by 460 tonnes/annum and PM<sub>10</sub> by 20 tonnes/annum. In addition greenhouse gas emissions would reduce giving a reduction in the emission of carbon dioxide (CO<sub>2</sub>) of 375,000 tonnes/annum. These forecasts take account of reductions in vehicle emissions due to predicted advances in clean engine technology. This study has informed many of the proposals in the LTP.

### **Local Transport Plan**

- 7.5. The latest Local Transport Plan (LTP2) submitted in March 2006 covers all seven West Midland authorities: Birmingham City Council, Coventry City Council, Dudley Metropolitan Borough Council, Sandwell Metropolitan Borough Council, Solihull Metropolitan Borough Council, Walsall Metropolitan Borough Council, Wolverhampton City Council and Centro (West Midlands Passenger Transport Executive). LTP2 aims to reduce congestion, improve air quality, accessibility, and road safety and achieve regeneration across all seven districts. The latest plan provides the framework for the programme of initiatives that will be pursued between 2006 and 2011.

- 7.6. The air quality strategy contained in LTP2 involves:
- 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 alternative fuel vehicles
- 7.7. The LTP also contains a target to reduce the average NO<sub>2</sub> level by 1% between 2004/5 and 2010/11 in areas where NO<sub>2</sub> exceeds the national objective. This is an ambitious target, given rising traffic levels, but can be achieved if congestion and traffic growth targets are met.
- 7.8. The latest plan includes actions to expand the metro network, expand and improve Bus Showcase routes, deliver a comprehensive network of Red Routes, improve urban traffic control systems, provide a comprehensive cycle network and improve conditions to encourage walking. The LTP and Air Quality Action Plan are closely linked, with many of the LTP actions forming the basis of this action plan. The relevant actions are discussed in more detail in section 8 and 9.

#### **West Midlands Transport Green Paper**

- 7.9. In January 2006 the West Midlands Authorities commissioned a study to identify and predict future levels of traffic congestion within the conurbation and to examine a comprehensive range of solutions for tackling the problem, including consideration of some form of flexible zonal pricing mechanism. The report released in September 2006 titled "Gridlock or Growth – Choices and challenges for the future" looks at 3 scenarios for 2021:
- **Scenario A** – continuation of current policies (i.e. all proposals contained in LTP2)
  - **Scenario B** - non-financial demand management package (i.e. all existing proposals as in scenario A and more concerted policies to encourage changes in travel behaviour)
  - **Scenario C** – Major investment package supported by road user charging
- 7.10. The report concludes that Scenario C has the potential for most beneficial impact on congestion and related economic and environmental impacts. However, the work to date has been largely a desktop exercise. The next step will be to discuss possible measures with business communities and residents and undertake more detailed surveys and analysis, including technology trials.



**Unitary Development Plan**

- 7.11. The Unitary Development Plan sets out planning policies for the borough and allocates land for various land uses. The new plan covering the period up to 2011 was approved in 2004. This plan includes policies to ensure that air quality is taken into consideration when assessing planning applications and policies to improve public transport and reduce congestion on roads throughout the borough. The new Local Development Framework (LDF) is currently emerging. The phased introduction of the LDF will commence in 2008 and be completed by 2012.

**Local Agenda 21 Strategy 2000-2005**

- 7.12. This strategy considers the way in which the council is integrating sustainable development principles into policy formulation and delivery of council services. The Strategy took a step further forward in 2006 with the adoption of the council's Environmental Policy Statement and Actions.
- 7.13. Some of the key aims relating to air quality contained in the strategy are:
- Reducing greenhouse gas emissions created by activity within Sandwell. This was originally carried out through the development of an Energy Strategy. Though since the council's declaration on Climate Change in 2007, a slightly different approach will be taken, target emission reductions will be set and a Climate Change Action Plan will be agreed and implemented
  - Increasing the use of environmentally friendly forms of transport. This will include implementing the Cycling in Sandwell Strategy (approved in 1999), working with businesses on TravelWise and green transport plans plus working with schools on a programme of "Safer Routes to School"
  - Improving sustainable business practices. Helping businesses reduce their harmful emissions and adopt environmental management systems through Sandwell's Business Environment Charter
  - Providing an energy efficiency and renewable energy advice service for all households in the borough
  - Using council procurement to reduce harmful emissions

Whilst all of the above points relate primarily to CO<sub>2</sub> emissions many sources of CO<sub>2</sub> are also sources of NO<sub>x</sub> emissions. For further information please refer to the Air Quality Expert Group Report: Air Quality and Climate Change: A UK Perspective. A summary of the full report is available at <http://www.defra.gov.uk/environment/airquality/publications/airqual-climatechange/pdf/summary.pdf>. The list below summarizes some of the win-win climate change measures identified in the report that will also have an air quality benefit:

- Switching from coal to natural gas for power generation
- Use of new technologies in road transport, e.g.
  - (i) hybrid vehicles
  - (ii) hydrogen from natural gas or from renewables
  - (iii) lean burn petrol vehicles fitted with nitrogen oxide traps
- Efficiency improvements in domestic appliances and industrial processes, e.g. through technical developments
- Energy conservation, e.g. through improved insulation of houses
- Demand management/behavioural change: improved public transport coupled with disincentives for private car usage

### **Community Plan**

- 7.14. Local Authorities have a duty to prepare community strategies for promoting or improving the economic, social and environmental well being of their areas and contributing to sustainable development in the UK. Sandwell's community plan (the Sandwell Plan 2006) is currently being reviewed. The Sustainable Community Strategy will replace the Sandwell Plan and will be published in 2008.

## 8. ACTIONS TO IMPROVE AIR QUALITY WITHIN THE AREAS OF EXCEEDANCE

8.1. This section of the action plan considers specific actions to improve air quality within each of the following areas of exceedance:

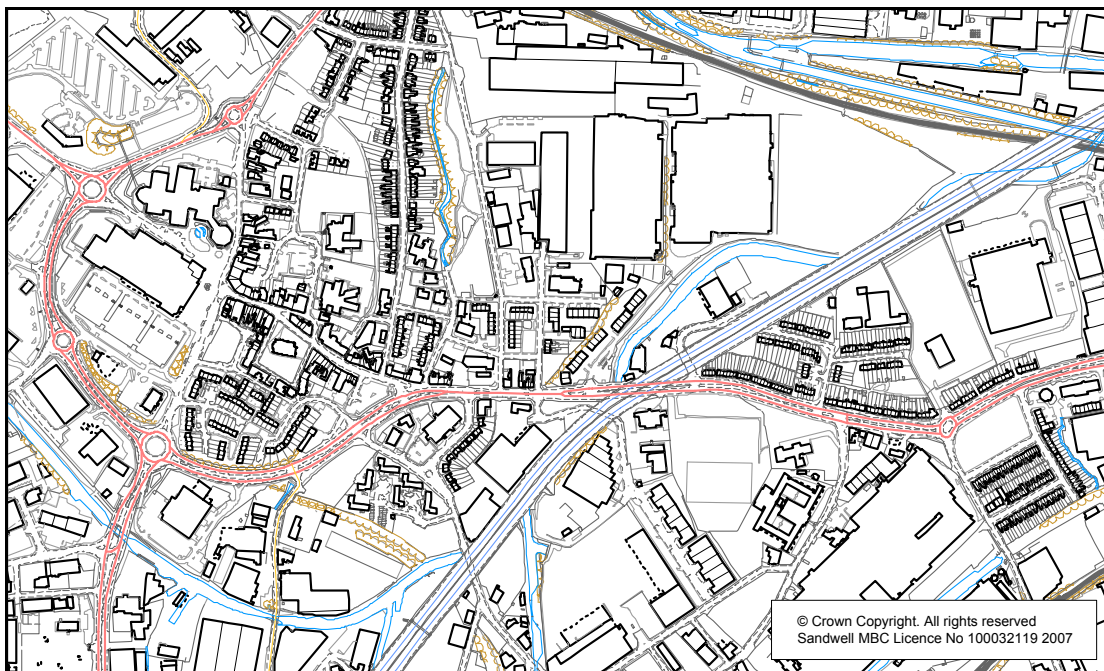
1. Oldbury Ringway / Birmingham Road (A457), Oldbury
2. Dudley Road East / Roway Lane, Oldbury
3. Motorways
  - M6 J7 - J8 / M5, Great Barr
  - M5 J1 - J2, Oldbury & West Bromwich
4. Newton Road / Birmingham Road (A34), Great Barr
5. Bearwood Road, Smethwick
6. Oldbury Road / Birmingham Road, Blackheath
7. High Street / Powke Lane, Blackheath
8. Bromford Road (including Kelvin Way / Brandon Way junction), West Bromwich
9. Trinity Way / Kenrick Way, West Bromwich
10. All Saints Way / Expressway, West Bromwich
11. All Saints Way / Newton Road, West Bromwich
12. Sedgley Road East / Dudley Port, Tipton
13. The Soho Way / Grove Lane / Cranford Street junction, Smethwick

Actions considered for each of these areas have been discussed below and the specific actions are listed in Table 10-5.

### **Oldbury Ringway / Birmingham Road (A457), Oldbury**

8.2. The A457 is a busy dual carriageway leading into the centre of Oldbury. There are residential properties on one side of the carriageway and commercial industrial uses on the other.

A 38% reduction in NO<sub>2</sub> levels is required to meet the objective in this area, to achieve this a 46% reduction in NO<sub>x</sub> generated from traffic is likely to be required.

**Figure 8.1 – Oldbury Ringway / Birmingham Road (A457)**

8.3. Red route treatment is proposed for this stretch of road, preliminary design work is currently taking place and construction works are anticipated in 2008/09. The works are anticipated to improve general traffic travel times by at least 10% and reliability by 20%. The general objective of smoothing the flow of traffic and reducing queues of stationary traffic should provide a reduction in air pollution. Initial appraisal of the route has identified the following improvements:

- Reduced footway and realigned centre-line to provide dedicated parking bays
- Limiting parking along the road
- Pelican crossing upgraded to Puffin crossing (on a Puffin crossing the red/green man indicator is on the nearside of the road above the push button and there are detectors which can extend the time available for the pedestrian to cross the road and a further set of detectors to cancel the signal if the pedestrian moves away from the crossing area)
- Bus stop facilities upgraded to showcase\* standard (Route 87).
- Churchbridge roundabout operation is to be reviewed and options to reduce congestion are to be considered

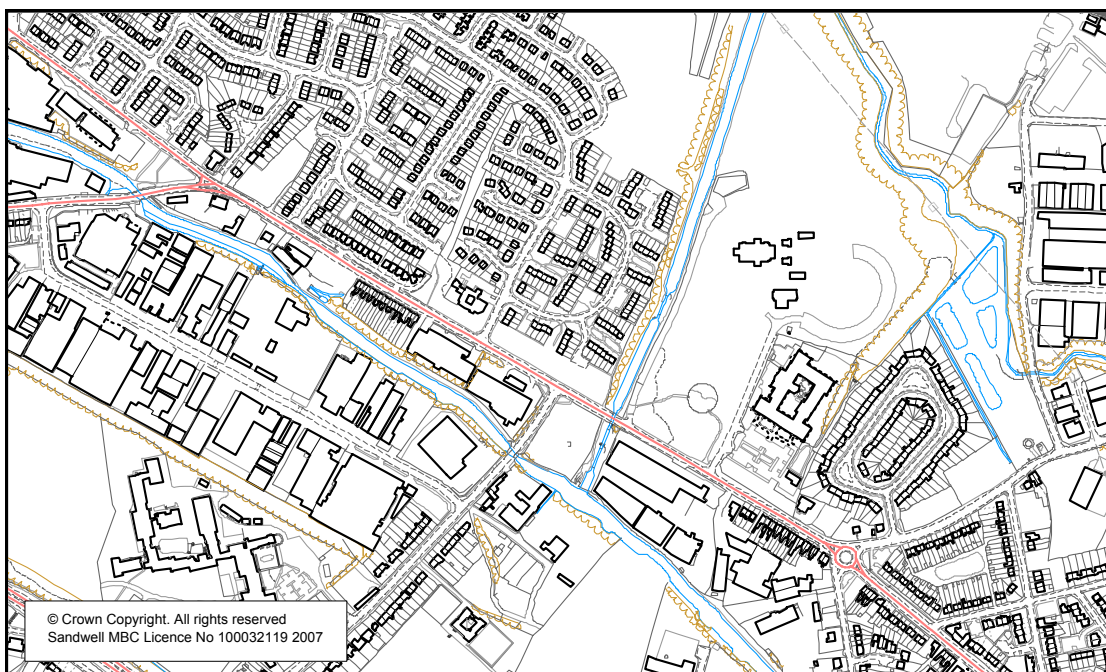
\* Bus showcase can include measures such as modern easy access buses, new enclosed glass shelters with Kassel kerbs for ease of boarding, real time electronic information displays and highway priority measures such as dedicated bus lanes and junction improvements.

- 8.4. The area of exceedance along Birmingham Road near the M5 crossing contains a relatively small number of residential properties within an industrial/commercial area. The residential properties in this area fall within an area designated as a Business Zone in the Unitary Development Plan (UDP). Business Zones are areas safeguarded predominantly for industrial use. The UDP states that the Council will not seek to remove non-industrial uses unless there is overriding environmental or economic need.
- 8.5. The council may give consideration to the future of these properties in addition to the actions referred to in section 8.3 as these properties are within the Housing Market Renewal Area (HMRA).
- 8.6. This option would not provide any improvement to air quality but would reduce the number of people exposed to high pollution levels at their dwellings. It would have a fairly high cost, but it would be a one off cost. This option has been discussed with the Strategic Planning and Housing departments and may be considered when developing the new Local Development Framework.

#### **Dudley Road East and Junction with Roway Lane, Oldbury**

- 8.7. Dudley Road East is a busy single carriageway road that becomes congested during rush hour and has houses located close to the road in a number of locations. A 38% reduction in NO<sub>2</sub> levels is required to meet the objective in this area, to achieve this a 46% reduction in NO<sub>x</sub> generated from traffic is likely to be required.

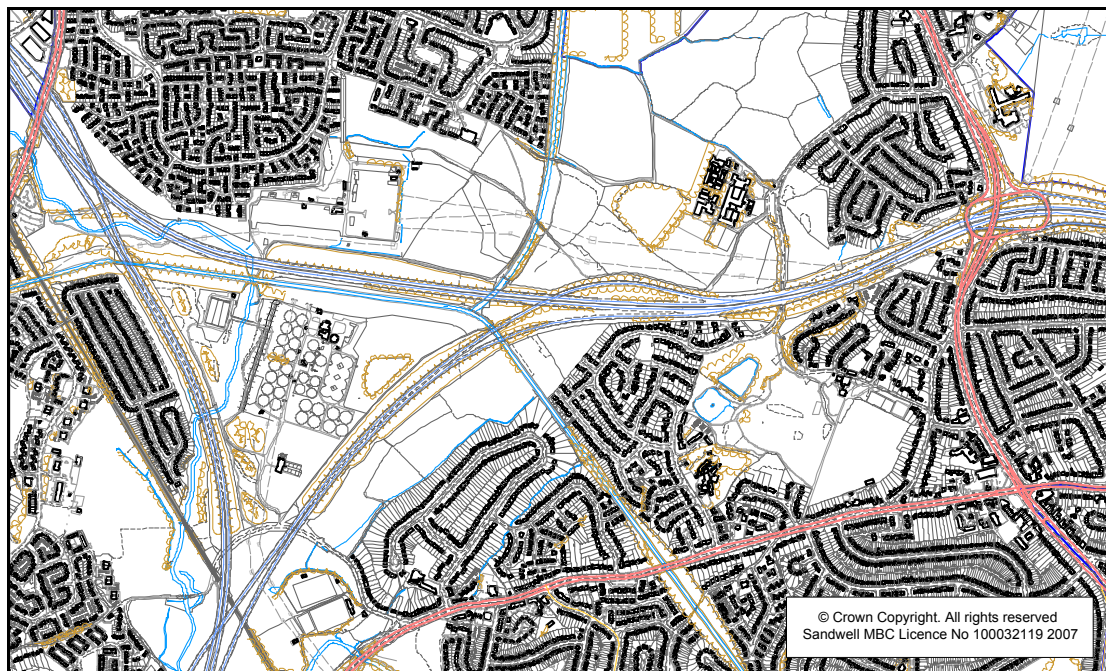
**Figure 8.2 – Dudley Road East and its junction with Roway Lane**



- 8.8. This section of road has been identified for red route improvements. Construction is anticipated to start in early 2008 and it is expected to take a year to complete the improvements. Initial appraisal of the route identified the following improvements:
- Pelican crossings to be upgraded to Puffin crossings
  - Parking bay provision is to be considered
  - Bus Stop facilities upgraded to showcase standard (Route 87)
  - New signalised crossroads to replace roundabout at Roway Lane (subject to budgetary constraints). Potentially jointly funded by Red Routes and Bus Showcase. This would improve capacity by approximately 20%
- 8.9. Dudley Road West / Tipton Road signals have been upgraded, however as part of the joint red route / bus showcase initiative, a further review of these signals is anticipated.
- 8.10. The council previously looked at the possibility of widening the road to dual carriageway but it was considered not viable. Highway Improvement Lines were imposed on 11/2/1993 to reserve the land but revoked on 21/3/1996. A bid for funding was last made in the 1991 Transport Policies and Programme document but high cost (£30m minimum at today's prices) meant funding was not attained. It affected around 30 residential properties and other land. It is highly unlikely that this project will be resurrected in the future.

**Motorways - M6 J7 - J8 / M5, Great Barr and Yew Tree & M5 J1 - J2 Oldbury and West Bromwich**

- 8.11. The M6 is the main source of nitrogen dioxide in Yew Tree and is also a significant source in Great Barr. The Highways Agency will have responsibility for options specific to the motorways hence their views have been sought in the action planning process. A 15% reduction in NO<sub>2</sub> levels is required to meet the objective in this area, to achieve this a 24% reduction in NO<sub>x</sub> generated from traffic is likely to be required.

**Figure 8.3 – M6 J7 - J8 / M5 Great Barr and Yew Tree**

8.12. The West Midlands Area Multi Modal Study (WMAMMS) concluded that the M5 / M6 corridor should retain a role as the north-south strategic route for long distance through traffic. The study includes a number of recommendations which would directly impact on the M6 corridor:

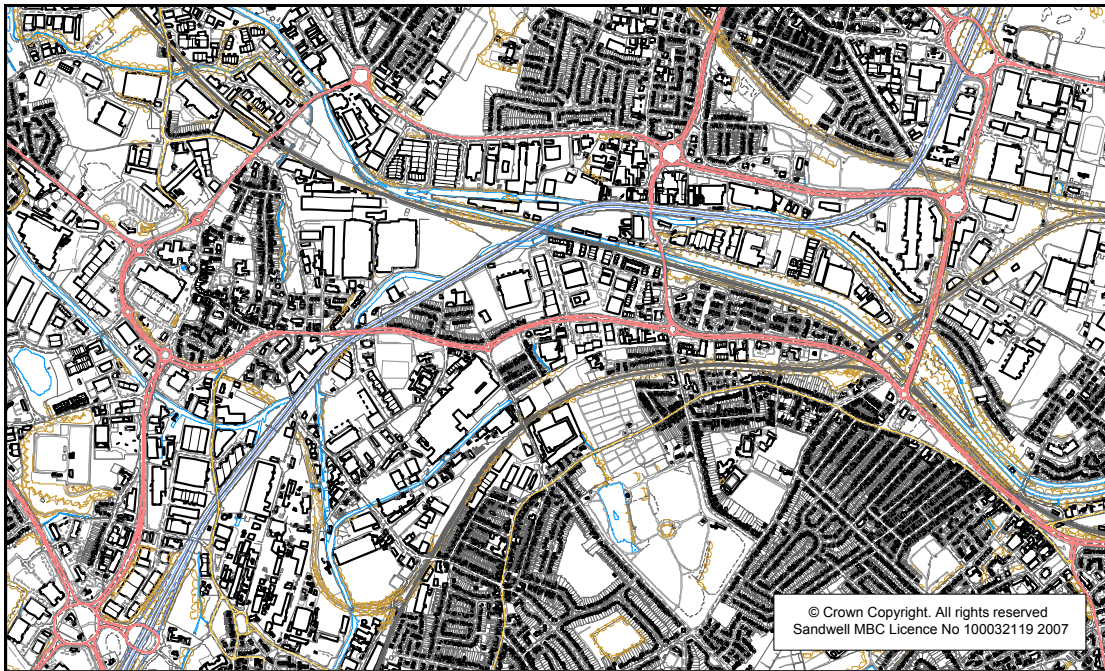
- Introduction of Active Traffic Management (ATM) on the existing motorway box to make best use of the existing routes
- A link between the M54 and the M6 / M6 Toll to relieve M6 junctions 8 to 10A and to improve access to the M54 and Telford
- Freight movements – The government has set a target to increase the current rail freight share by 80% over the next 10 years. A number of new freight terminals are under consideration; these would help the transfer from road to rail

8.13. Consideration was given to widening the M5 / M6 but this idea was rejected due to the considerable construction difficulties particularly through the elevated sections.

8.14. If all the measures recommended in the 2031 plan were implemented it is estimated that there would be a 2.1% decrease on the motorways in the area. This reduction would not provide sufficient reduction in NO<sub>2</sub> to meet the air quality objective so additional actions will need to be considered with the Highways Agency. The following measures are currently being implemented by the Highways Agency:

- A programme to deliver a faster response time of 20 minutes (previously 60 minutes) for incidents on the M6 is being implemented
- An improved system of incident contingency planning for the motorway network is proposed
- Evaluate the suitability of active traffic management on the M6

**Figure 8.4 - M5 J1 - J2 Oldbury and West Bromwich**

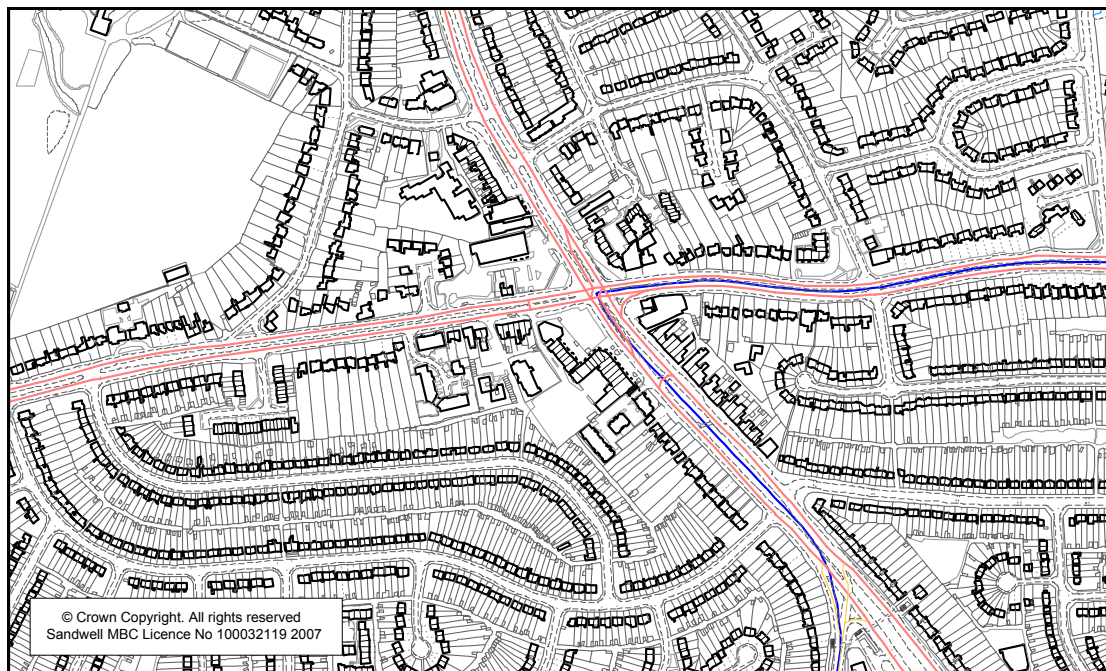


8.15. The Highways Agency is also proposing to put ramp metering on the northbound slip roads to junction 1 and junction 2 of the M5. Ramp metering is the system of controlled access of traffic from the slip road onto the main motorway using traffic signals responding to motorway traffic density and speed, therefore achieving smoother more uniform flow. The Highways Agency intend to carry out air quality monitoring before and after the system comes into operation to identify any air quality benefits. The results of this study will be considered in Sandwell's progress reports. Ramp metering is also being applied to other junctions along the M6.

**Newton Road / Birmingham Road (A34), Great Barr**

8.16. This junction, known as the Scott Arms junction, is a busy crossroads that gets heavily congested particularly during rush hour. In addition to the M6, the A34 is a significant road traffic source in Great Barr.



**Figure 8.5 - Newton Road / Birmingham Road (A34)**

8.17. There are existing proposals along the A34, in the vicinity of junction 7 of the M6 and the Scott Arms junction, that are expected to improve traffic flows and reduce queue lengths.

These proposals known as the Route 51 improvements are programmed for implementation during 2006 / 2007 and will be jointly funded by both Red Route and Bus Showcase initiatives. The proposed measures will include a package of road improvements and traffic control systems that are predicted to improve the flow of traffic along the A34 in the vicinity of Junction 7 of the M6. The following improvements to the current signal arrangements are to be made:

- Providing greater provision for pedestrians
- Installing advanced equipment (such as microprocessor optimised vehicle actuation (MOVA)) to increase capacity
- Increasing the right turn provision from Newton Road onto the Scott Arms junction
- Potentially linking the junction to Birmingham's split cycle offset optimisation technique (SCOOT) system on the A34 corridor

8.18. It also includes proposals to improve the bus services to bus showcase standards, which are being developed across the West Midlands. This aims to improve the service and make it a more appealing travel option.

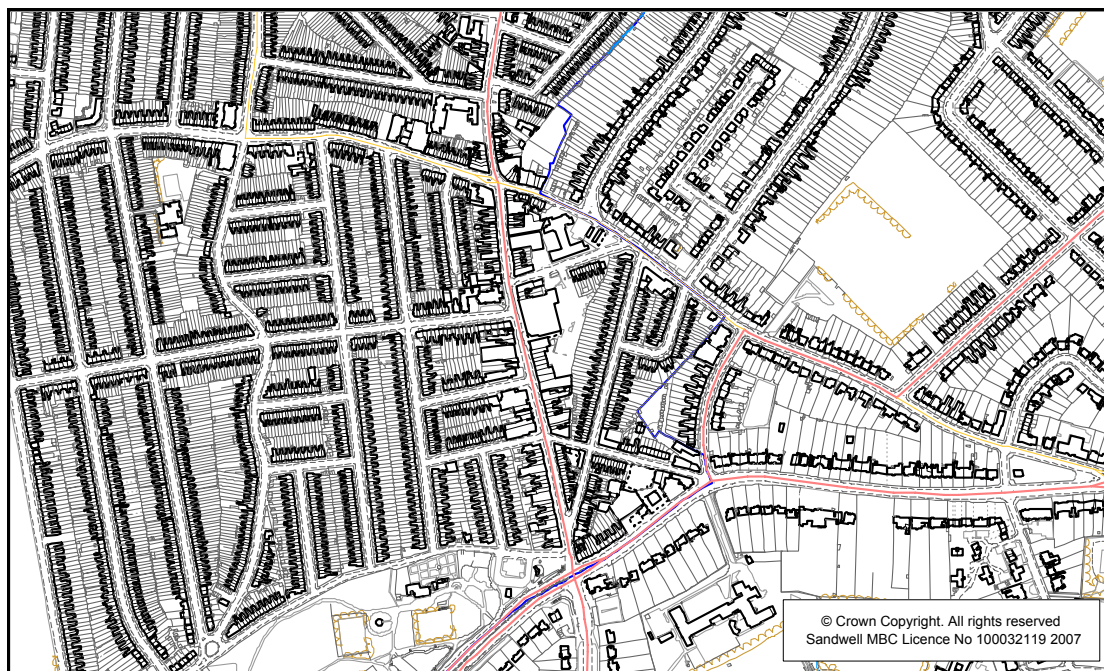
8.19. The improvements should result in reduced congestion and reduced emissions. Monitoring will continue in this area to evaluate whether there are any improvements in air quality once the Route 51 proposals have been fully implemented.

- 8.20. The A34 is also a route being considered for the enlargement of the Midland Metro network and this Phase 2 route is included as a priority in the LTP. Construction would be unlikely to commence before 2016.

### **Bearwood Road, Smethwick**

- 8.21. Bearwood is a local shopping centre consisting of a ribbon of shops many of which have residential premises at the first and/or second floor. The road is narrow with high buildings either side creating a canyon affect. The busy junctions with Hagley Road and Three Shires Oak Road are also included in the area of exceedance. A 50% reduction in NO<sub>2</sub> levels is required to meet the objective in this area, to achieve this a 54% reduction in NO<sub>x</sub> generated from traffic is likely to be required.

**Figure 8.6 – Bearwood Road**



- 8.22. The proximity of the buildings to the road edge precludes road widening and the limited options for diverting traffic from this area restricts the number of viable options to improve air quality.
- 8.23. The bus services along Bearwood Road have already been upgraded to Bus Showcase standards. The Hagley Road Bus Showcase scheme includes a junction improvement to the Hagley Road / Bearwood Road junction to ease congestion (estimated 10% reduction) and is programmed for 2009/10.

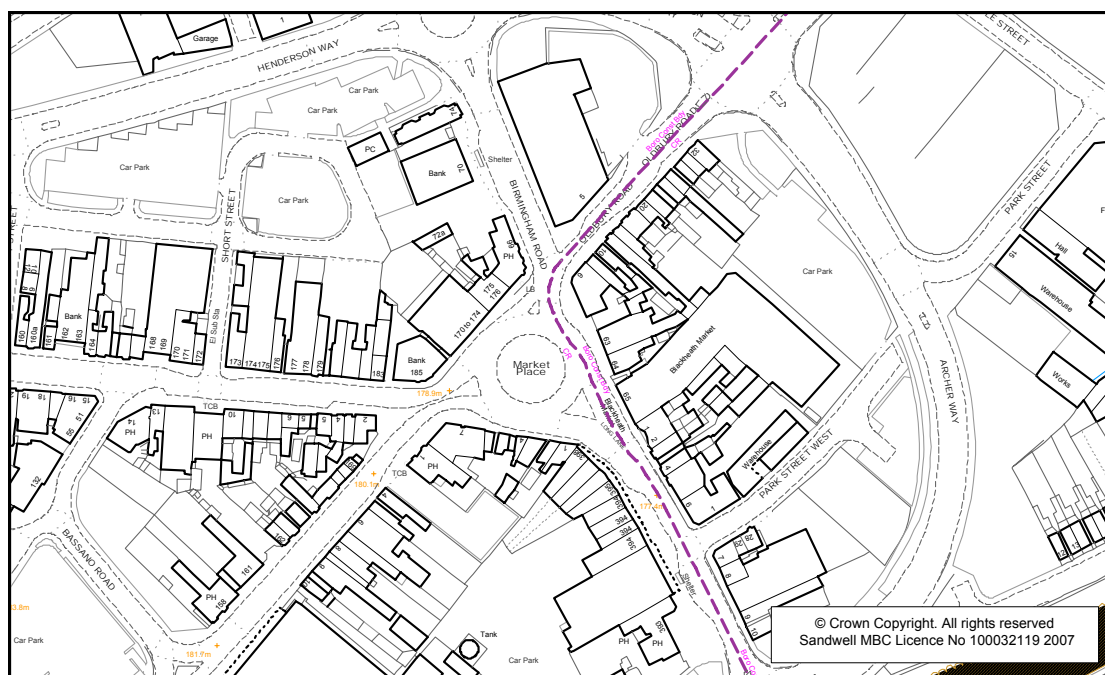
The Birmingham West Route Metro along Hagley Road West should provide an attractive alternative form of transport in this area. The Phase 2 Metro programme is currently under review but construction is unlikely to start prior to 2016.

- 8.24. In January 2006 Camden Council commenced a trial of a pavement designed to lower pollution levels. The surface of the slabs contain titanium dioxide ( $\text{TiO}_2$ ), which acts as a catalyst in the presence of sunlight to break down the pollutant nitrogen dioxide gas ( $\text{NO}_2$ ) into nitrates. These are neutralised by the concrete and so removed from the air. Sandwell MBC will monitor the results of the Camden trial and if it proves successful consider its application along Bearwood Road.

### Oldbury Road / Birmingham Road, Blackheath

- 8.25. Blackheath is another of Sandwell's town centres serving a significant population in the south west of the borough. This junction is located in the centre of Blackheath. A bypass of the town centre has recently been completed and should significantly reduce traffic and improve air quality at this junction. However, the benefits of the bypass will not fully materialise until traffic management proposals in the centre of Blackheath have also been implemented. Traffic management will focus on reducing vehicular traffic but specific proposals are yet to be formulated and funding is not yet set aside. As a result of the bypass and traffic management proposals a traffic reduction of 50% may be possible.

**Figure 8.7 – Oldbury Road / Birmingham Road**



- 8.26.  $\text{NO}_2$  diffusion tube monitoring will continue in the town centre to evaluate the effectiveness of the bypass and any traffic management works on the  $\text{NO}_2$  levels at this junction.

### High Street / Powke Lane, Blackheath

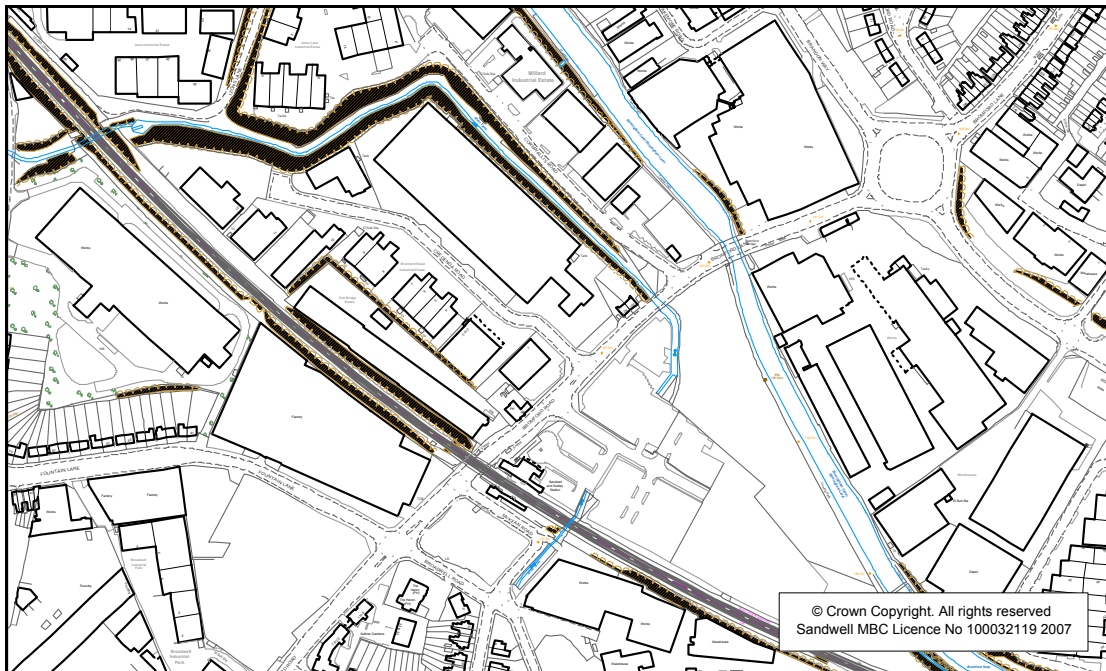
- 8.27. This junction is on the outskirts of town and is not likely to benefit from the new bypass. Existing buildings preclude widening at this junction. Two lane approaches would significantly increase capacity but this is not viable. Therefore, no specific actions can be applied to this junction, but the borough wide actions will aim to provide improvements.

Figure 8.8 – High Street / Powke Lane



### Bromford Road, West Bromwich

- 8.28. Bromford Road is a main route between the towns of Oldbury and West Bromwich. There is currently only one residential property located within the area of exceedance, however new residential properties are currently under construction within the area of exceedance.

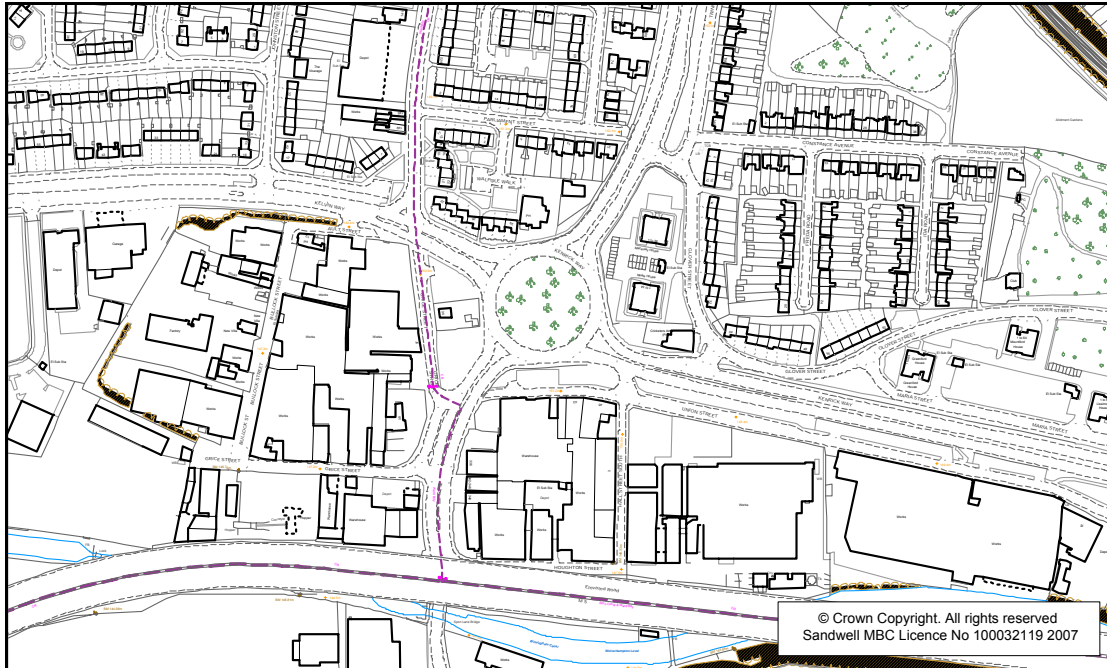
**Figure 8.9 – Bromford Road**

8.29. Bus stop facilities have already been upgraded to Showcase standard as part of Route 404. Red Route treatment is also proposed along this stretch of road and construction is anticipated in 2008/09. Initial appraisal of the route identified the following improvements:

- Bromford Road roundabout to be reviewed and options to reduce congestion to be considered
- Fountain Lane Signals are to be reviewed and upgraded as required
- Pelican crossings to be upgraded to Puffin crossings

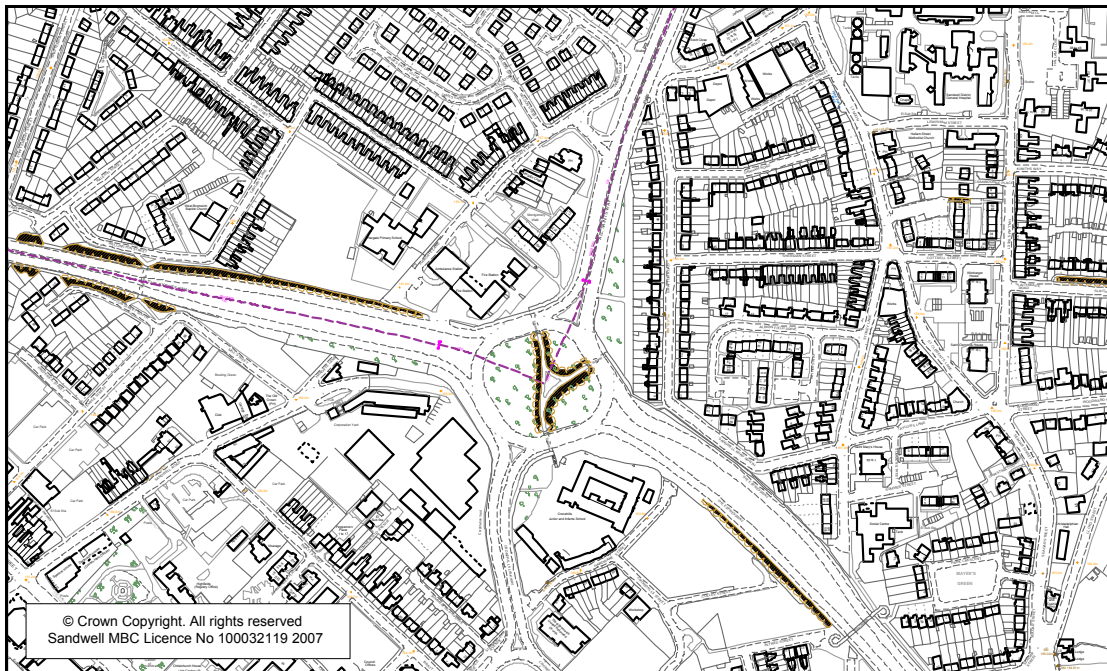
#### **Trinity Way / Kenrick Way, West Bromwich**

8.30. The junction is a busy roundabout on the outskirts of West Bromwich with residential properties on one side of the junction and commercial / industrial uses on the other. It has been identified for Red Route treatment; construction works are anticipated to start in 2008/09. Initial appraisal of the route has identified potential for improvement around the Trinity Way roundabout. This roundabout will be reviewed and options to reduce congestion will be considered as part of the red route treatment.

**Figure 8.10 – Trinity Way / Kenrick Way****All Saints Way / Expressway, West Bromwich**

- 8.31. This is the main arterial route on the A41 leading to junction 1 of the M5 and into Birmingham. Improvements proposed for this junction will provide a vehicle underpass along the line of the A41 beneath the existing roundabout. The scheme is to infill pedestrian subways, which will be replaced with surface crossings. The junction will also have bus priority measures. Although this will reduce congestion it is not clear to what extent air quality will improve due to increased vehicle speeds. Air quality will continue to be monitored at this junction in order to evaluate any air quality impacts from the proposed road improvements. This scheme is an LTP firm priority and a regional priority. It is awaiting Programme Entry from the Department for Transport and is anticipated to start in September 2008.

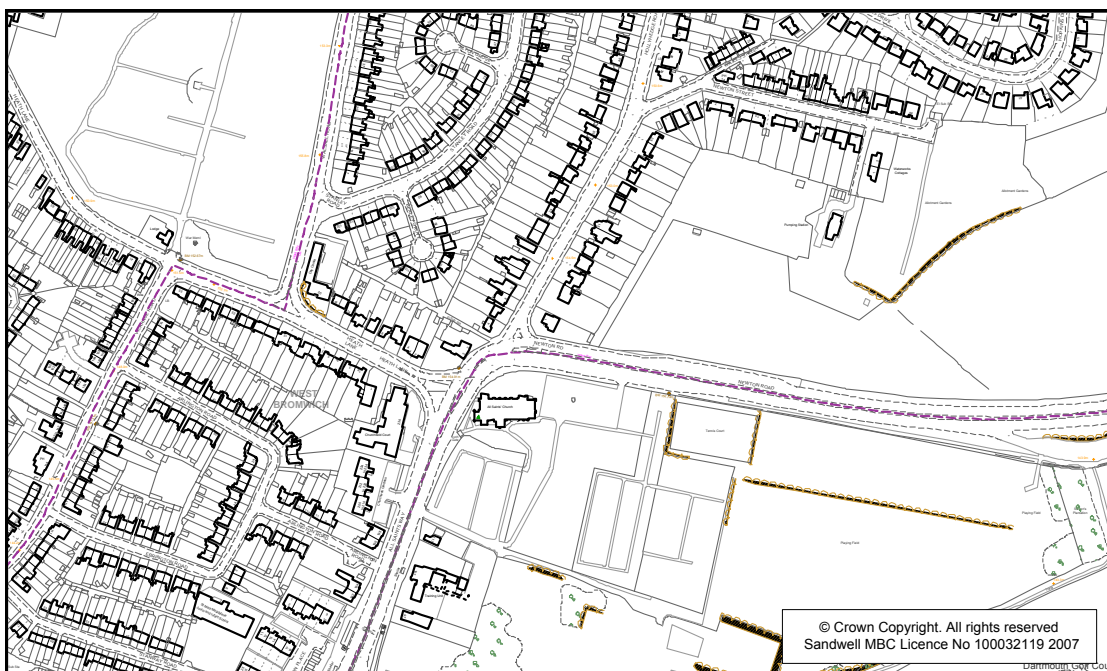
**Figure 8.11 – All Saints Way / Expressway**



**All Saints Way / Newton Road, West Bromwich**

8.32. This traffic light controlled junction lies on the main route between West Bromwich and Great Barr. Residential properties lie to the north and west of this junction. Red route treatment is proposed along this stretch of road and it is expected that it will be completed in 2009. Monitoring will continue along this route to allow evaluation of any improvement.

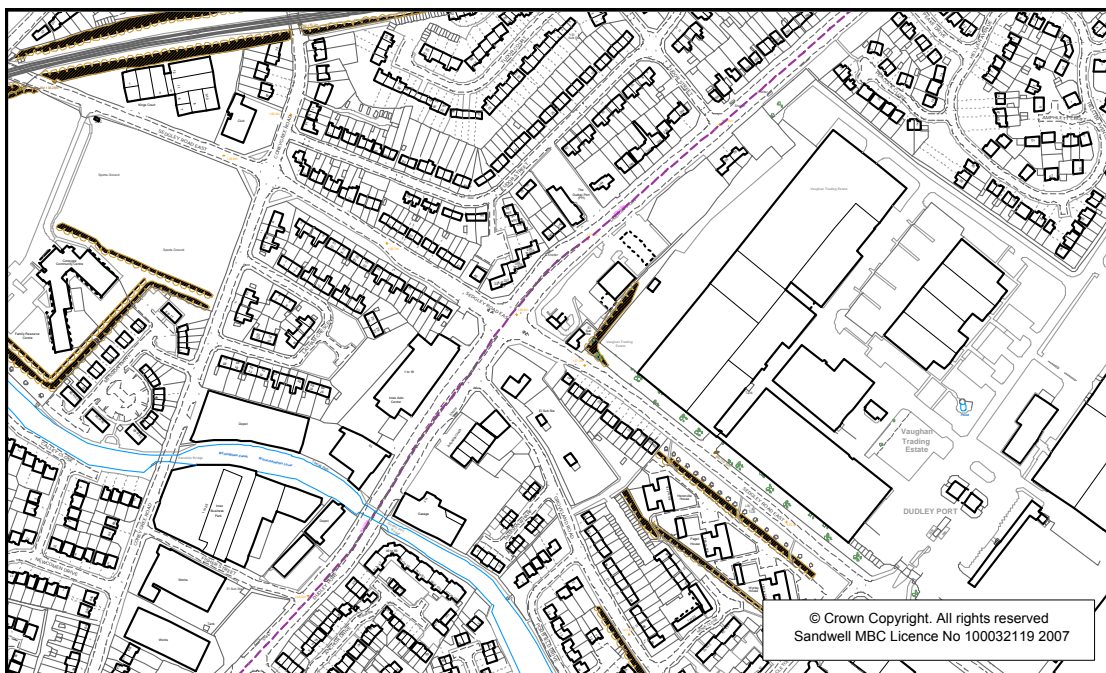
**Figure 8.12 – All Saints Way / Newton Road**



### **Sedgley Road East / Dudley Port, Tipton**

- 8.33. This is a traffic light controlled junction with residential properties mainly to the north of the junction. Red Route treatment is proposed along Dudley Port (A461) between Great Bridge and Burnt Tree Island and along A457 Sedgley Road East. Several of the junctions along both routes will be signalised with pedestrian facilities linked to platoon traffic that should reduce the stop start nature of the current junctions/pelican crossings. The signal operation at this junction will also be reviewed and upgraded as appropriate. Design work began in summer 2006, implementation is to start in January 2008, and it is anticipated that it will take a year to complete.

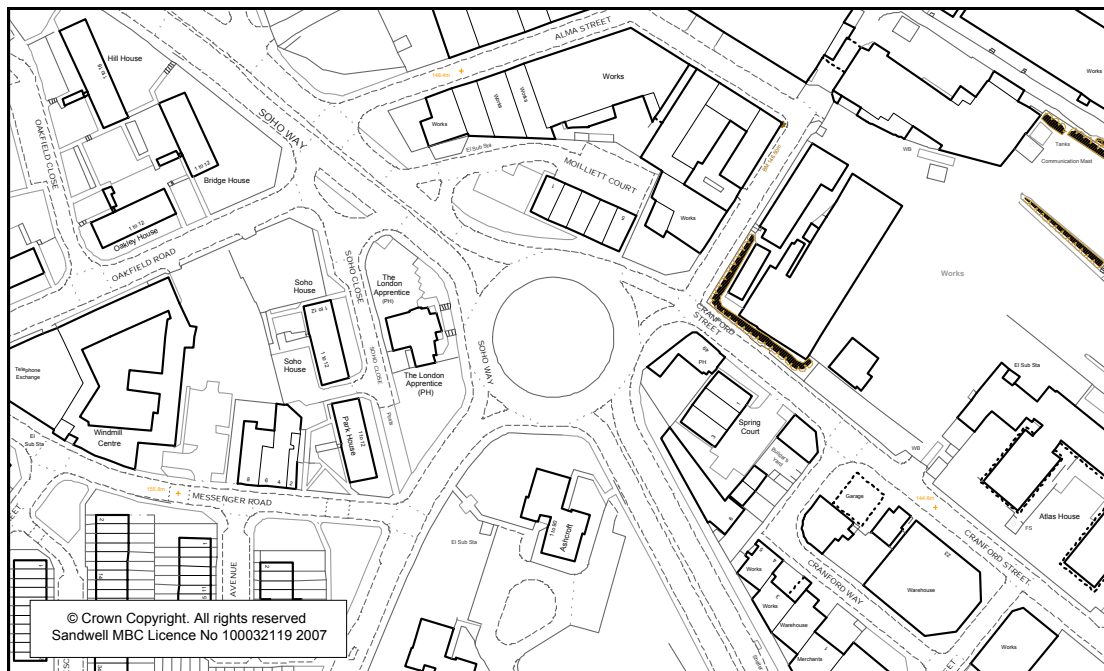
**Figure 8.13 – Sedgley Road East / Dudley Port**



### **Soho Way / Grove Lane / Cranford Street junction, Smethwick**

- 8.34. This small four-arm roundabout is situated on the busy A457 in a mixed residential and industrial area of north Smethwick. Red Route treatment is proposed along the A457 and this junction will be investigated. Queuing traffic on the Cranford Street arm in the peak periods is the main problem. Work is anticipated to take place during 2007/08.



**Figure 8.14 – Soho Way / Grove Lane / Cranford Street junction**

## 9. ACTIONS TO IMPROVE AIR QUALITY ACROSS THE BOROUGH

9.1. Consideration is given in this section of the report to improving air quality across the borough as a whole. The proposals considered can be divided into six headings:

- Reducing vehicle emissions
- Improving public transport to reduce traffic volumes
- Improving the road network to reduce congestion
- Using area planning methods
- Changing levels of travel demand / promotion of alternative modes of transport
- Reducing air pollution from industry, commerce and residential areas

Actions considered under each of these headings have been discussed below and specific actions are listed in Table 10-6.

### Reducing Vehicle Emissions

9.2. The actions listed below are aimed at reducing emissions from vehicles, both the council's own vehicle fleet and vehicles generally across the borough.

9.3. Improve council fleet - The council will aim to reduce emissions from the council fleet by purchasing Euro 4 cars where possible. Currently at least 5% of the council fleet are to Euro 4 standards. Greater fuel efficiency among the drivers will be encouraged through regular user group meetings and monthly fuel reports.

- 9.4. Eco Driving – driving more efficiently (or eco-driving) can reduce emissions and fuel consumption by up to 25%. Sandwell MBC will develop a promotional strategy to encourage drivers to drive economically. Part of this strategy will be to provide eco-driving training to all drivers of the council fleet.
- 9.5. Stop Idling – On Shropshire County Council’s website it is stated that an idling engine produces 80% more pollution than when a vehicle is in motion. More fuel is used sitting waiting in a queue with the engine idling for just 45 seconds than if switching off and restarting 45 seconds later. Sandwell MBC will develop a strategy to encourage drivers not to allow their engines to idle.
- 9.6. Vehicle Emissions Testing - Regulations enabling English local authorities with air quality management areas to conduct roadside vehicle emissions tests came into force in 2002. Participating local authorities can issue fixed penalties (£60) to drivers whose vehicles are found exceeding current emissions limits. Alternatively voluntary vehicle emission testing programmes can be carried out to identify vehicles that do not meet the required standard and also provide publicity for the wider clean air action plan. The effectiveness of these measures will be dependant on the surrounding publicity given the relatively small number of vehicles that can be tested in such a programme. The council will establish a programme of vehicle emission testing and an associated promotional campaign.

#### **Improving Public Transport to Reduce Congestion**

- 9.7. Actions in this section aim to reduce the overall emissions by encouraging more people onto public transport and hence reducing the amount of traffic on the roads within the borough. Traffic growth on much of the primary route network in the West Midlands has slowed to less than 1% per annum due to the limiting factor of congestion but traffic growth is still predicted to rise. However, demand for person movement across the West Midlands is predicted to increase by 27% from 2000 to 2031. Although NO<sub>2</sub> emissions from transport are reducing due to improved vehicle technology, a continuing growth could effectively negate these air quality improvements.
- 9.8. The Road Traffic Act 1998 requires Sandwell MBC as the local highways authority, to assess traffic levels and make proposals to reduce levels or the rate of growth of traffic and publish these in a report. The latest West Midlands Local Transport Plan incorporates options for achieving this target. They include:
- Showcase and Super Showcase route extension and improvements
  - Improvements of branding to increase attractiveness of public transport
  - Improving access to information regarding transport options
  - Encourage travel plans for employers, schools & hospitals

- Extensions to Midland Metro including the Phase 1 Extension Wednesbury to Brierley Hill due to be open in 2011/12, subject to Government approval of funding

9.9. These measures should lead to an improvement in air quality by encouraging the use of public transport and reducing private vehicle use.

9.10. The possibility of congestion charging coupled with public transport improvements has been presented in a West Midlands Transport Green Paper – “Gridlock or Growth – Choices and Challenges for the Future” produced on behalf of the West Midlands metropolitan boroughs and Centro. This draft document was issued in September 2006 for discussion and comments. It sets out to identify current and predicted future levels of traffic congestion within the West Midlands conurbation and to examine the comprehensive range of solutions for tackling the problem, options for road charging that need to be accompanied by substantial improvements to all forms of public transport are explored. A bid for the improvements will be made in July 2007. The Government will only provide funding on the understanding that the West Midlands will trial congestion charging. In addition the WMAMMS recommends the introduction of congestion charging by 2011 and full electronic road pricing by 2021. The primary goal of this is to redress the existing perceived cost of using public transport over private transport to encourage the shift away from private transport. The council will continue to monitor the implications and effectiveness of any congestion charging proposals.

#### **Improving the Road Network to Reduce Congestion**

9.11. The aim is to reduce the emission levels by improving the flow of traffic. There are a number of existing proposals at various stages of implementation including the Route 51 proposals, which will directly impact on the areas of exceedance in Great Barr, described in paragraph 8.16 above. Other actions to reduce congestion contained in the Local Transport Plan include:

- Introduction of Red Routes to ease congestion
- Improvement of Urban Traffic Control Systems designed to reduce congestion
- Improvements to traffic flow on M6 by implementing a programme to reduce incident response times to 20 minutes (from 60 minutes)
- Implement an improved system of contingency planning for the motorway network to improve traffic flows
- Bus Showcase improvements
- Burnt Tree Island improvements
- Owen Street Level Crossing Relief Road
- Cradley Heath by-pass
- A41 Expressway / A4031 All Saints Way Junction Improvements

These measures are supported in this action plan, as they are all expected to reduce emissions.

**Using Area Planning Methods to reduce traffic volumes and exposure**

- 9.12. In addition to the Local Transport Plan, planning decisions can also have a significant, longer term impact on travel behaviour and levels. The Unitary Development Plan (UDP) contains policies that can influence new development to ensure that it is designed and located to reduce the need to travel and provide more alternative means of travel. A new planning framework will replace the existing UDP from 2008 onwards. The Environmental Protection Division are working with the strategic planners to ensure that development of the new planning framework includes measures to minimise any adverse impact of new development on air quality.
- 9.13. The Environmental Protection Division will also continue to work with Development Control to consider air quality issues associated with new planning applications in accordance with the agreed planning protocol. Sandwell MBC aim to improve the way air quality is considered in the development control process by producing Planning Guidance on Air Quality to assist developers when submitting applications. This guidance is being developed in coordination with the Development Control Department.

**Reducing air pollution from industry, commerce and residential areas**

- 9.14. Industrial emissions to air are regulated by both the Environment Agency and the Local Authority depending on the size and nature of the process. Permits are issued for relevant processes, which set conditions that control operation and appropriate emission standards or pollution levels. In permitting processes the relevant authority is required to take account of the proximity of sites to any AQMA's. These industries are inspected once or twice a year and more frequently where problems arise. Breach of permit conditions can lead to prosecution. Consideration can also be given to reducing emission concentration limits where it can be demonstrated that the industrial source is a major contributor to poor air quality in an area.
- 9.15. There are a number of council projects aimed at improving energy efficiency, although these are designed to achieve CO<sub>2</sub> savings they will also have an impact on NO<sub>x</sub> emissions. Some relevant initiatives are outlined in section 9.16 to section 9.19.
- 9.16. Sandwell Energy Efficiency Advice Centre – this was set up in 1993 and funded by Sandwell council to publicise energy efficiency and respond to enquiries. In 2003 it also started giving advice on renewable energy for households. Since 1996 some 27,500 households have received energy advice in this way. Research indicates that those who complete the surveys are likely to follow some of the advice given and go on to save between 0.4 and 1 tonne each. At the present rate of 2,700 households being advised each year, it leads to an estimated combined annual saving of up to 1,800 tonnes of CO<sub>2</sub>.

- 9.17. Business in Sandwell Network of Environment Support (BISNES) Energy Advice Service – this is an energy advice service for local businesses that is being funded by Sandwell council and Advantage West Midlands. The Sandwell Energy Advice Centre manages the service; it aims to serve 10 businesses each year. Based on information from the first 40 companies that have received an energy survey, the scheme has identified average carbon dioxide savings per business of 10% with no or low cost actions. As a result its estimated that a combined saving of 4,600 tonnes of carbon dioxide has been achieved since 2005. This represents a 0.5% reduction in carbon dioxide and nitrous oxide emissions from Sandwell's industrial sector (a reduction rate of 1,150 tonnes of carbon dioxide being made by 10 companies each year).
- 9.18. Sandwell MBC's Warm Zone Scheme provides general energy efficiency advice and installation of energy efficient measures for householders within Sandwell. This will help to reduce the amount of energy required for residential properties, reducing the amount of local air quality and greenhouse gases that will need to be emitted in electricity production. This will also result in reduced fuel bills for householders.
- 9.19. Sandwell MBC Housing aim to improve homes within Sandwell to the decent homes standard, this includes improving the Standard Assessment Procedure (SAP) rating (this rating is the Governments recommended system for the energy rating of dwellings). Sandwell MBC Housing have responsibility for electricity supplies to power communal lighting (energy efficient bulbs are used), lifts, and close circuit television in their buildings. In one block of flats in West Bromwich photovoltaic cells (which can convert light into electricity) are used to power lighting. The Energy Savings Trust will audit Sandwell MBC Housing's vehicle fleet; this audit will include a consideration of their delivery to site arrangements, removal of waste from site and vehicle replacement strategy.

#### **Promotion of alternative modes of transport**

- 9.20. The WMAMMS indicates that to achieve the required reductions in traffic growth a behavioural change will be needed to achieve the modal shift to alternative forms of transport. The West Midlands Local Transport Plan incorporates a number of options for achieving this target. They include:
- The enlargement of the Midland Metro network
  - The bus showcase programme
  - Promotion of walking
  - Promotion of cycling
  - Improving access to information regarding transport options
  - Encourage travel plans for employers, schools & hospitals

- 9.21. Travel plans are a package of measures aimed at encouraging and enabling staff to travel in healthier and more environmentally friendly ways. Sandwell Council assists companies in setting up Travel Plans by providing the following support:
- Arranging sales of travel cards at discount rates through Centro and Travel West Midlands
  - Promoting discounts from support companies
  - Analysing travel options audit for the workplace
  - Helping with travel survey design and analysis
  - Producing postcode maps to identify the potential for car sharing and public transport use
  - Advising on alternative working practices e.g. home working
- 9.22. Sandwell Council also endorses the Cycling Strategy created by Cycling in Sandwell in 1999 and are committed to playing its part in delivering the 35 actions contained within the strategy. The actions include creating a safer cycle route network, promoting safety and health, offering training and improving facilities.
- 9.23. The Sandwell car share scheme was set up in July 2005 by Sandwell MBC's transportation section, to make it as easy as possible for people to find a suitable match to share their journey. It is free to use and has been designed for both drivers and passengers seeking matches for one-off trips or regular journeys. If half of UK motorists received a lift one day a week, congestion and pollution would be reduced by 10% and traffic jams by 20%. Sandwell MBC will continue to promote car sharing among residents and businesses in the area.
- 9.24. There is potential to encourage car sharing schemes across the borough. Charities such as Carplus can provide information to support businesses and commuters in setting up their own car share schemes.
- 9.25. To raise public awareness and encourage a modal shift away from car use, the council will continue to monitor air quality and publicly report on monitoring results. The suitability of air quality monitoring will be regularly reviewed and both historic and real time data is now available on Sandwell's website. This not only aims to raise awareness with the general public but also provide data for developers in order to inform the planning process. All previous air quality reports are presented on the website, further development of the website will take place as the action planning process evolves.

## 10. COST – BENEFIT ANALYSIS

- 10.1. As part of the action planning process the council have considered the cost and effectiveness of each action to ensure that a balanced and realistic approach is being pursued. The cost benefit appraisal has been carried out by considering the impact of each action on air quality, other impacts, both positive and negative, and the costs associated with the proposed action.
- 10.2. No attempt has been made to accurately quantify the impact of air pollution in Sandwell or the AQAP in terms of lives or life years lost or gained because this is already factored into the National Air Quality Objectives and the AQAP guidance states that 'local authorities should not attempt to redo these calculations'.
- 10.3. Due to the wide-ranging nature of the actions, it is difficult to accurately assess the likely improvements in air quality or the other impacts of the proposals. In many cases, the total costs of the proposal may also be difficult to measure.
- 10.4. Many of the actions contained in this plan form part of the latest (2006) West Midlands Local Transport Plan (LTP2). The Strategic Assessment also considers the wider impacts of the LTP2 proposals.
- 10.5. To provide a form of ranking of the actions in terms of the costs and benefits each action has been given a score based on its benefits to air quality, other impacts (both positive and negative) and cost of the proposal. Table 10-1 -
- 10.6. Table 10-3 show the criteria used for this scoring. The table of actions (Table 10-5 and Table 10-6) details the various impacts that have been considered in deriving these scores.

**Table 10-1 - Air Quality Impact**

<b>Air Quality Impact</b>	<b>Score</b>
Minor potential improvement in air quality	1
Low to medium potential improvement in air quality ( <i>option could help achieve air quality objective</i> )	2
High potential improvement in air quality ( <i>option could achieve air quality objective</i> )	3

**Table 10-2 - Other Impacts**

<b>Other Impacts</b>	<b>Score</b>
No positive or negative impact	0
Minor positive or negative impact	+/-1
Significant positive or negative impact	+/-2
Highly significant positive or negative impact	+/-3

**Table 10-3 - Cost**

<b>Cost</b>	<b>Score</b>
Low cost (under £50,000)	3
Medium cost (£50,000 - £1,000,000)	2
High cost (over £1,000,000)	1

**Ranking the Options**

10.7. The scoring detailed above was used to rank the proposed actions to reflect the relative cost-effectiveness of each measure in improving air quality, while taking into account the potential wider environmental, economic and social consequences. The final score was calculated by adding together each of the scores for air quality improvements, other impacts and cost, this is then ranked as high, medium or low priority depending on the final score.

The criteria used for this ranking is shown in Table 10-4. This relatively simple screening assessment is summarised for each of the actions in Table 10-5 and Table 10-6.

**Table 10-4 - Ranking**

<b>Rank</b>	<b>Final Score</b>
High priority	$\geq 7$
Medium priority	5-6
Low priority	$\leq 4$



**Table 10-5 – Specific Actions**

**Funding Key:** A = additional funding required; S = funding secured; W = within existing funds.

	Action / Option	Lead Role	Impacts	Cost/benefit				Rank	Timescale	Funding
				AQ	+ive	-ive	Cost			
<b>Oldbury Ringway/Birmingham Road (A457), Oldbury</b>										
1	The council will consider the possible relocation of existing residential properties	Planning / Housing	<ul style="list-style-type: none"> <li>▪ Would not improve air quality but would reduce the number of people exposed to concentrations above the objective</li> <li>▪ Improve quality of housing</li> <li>▪ Help to achieve UDP</li> <li>▪ Resentment by residents</li> </ul>	3*	3	1	1	Med 6	Long term	A
2	Red route treatment - Red Route treatment including the control of parking which would ease congestion (predicted 10% reduction) but there is no obvious place to displace residential parking	SMBC Highways Direct (LTP commitment)	<ul style="list-style-type: none"> <li>▪ Minor air quality improvement</li> <li>▪ Reduced congestion</li> <li>▪ May inconvenience local residents</li> </ul>	1	2	1	2	Low 4	2010	S
<b>Dudley Road East/Roway Lane, Oldbury</b>										
3	Red route improvements	SMBC Highways Direct (LTP commitment)	<ul style="list-style-type: none"> <li>▪ Minor air quality improvement</li> <li>▪ Reduced congestion</li> <li>▪ May inconvenience local residents</li> </ul>	1	2	1	2	Low 4	2009	S
<b>M5 J1-J2, Oldbury &amp; West Bromwich &amp; M6 J7-J8/M5, Great Barr &amp; Yew Tree</b>										
4	Improvements to traffic flow on M6 through implementing a programme to reduce incident response times to 20 minutes (from 60 minutes) 24 hours a day, seven days a week	Highways Agency	<ul style="list-style-type: none"> <li>▪ Reduced queuing times following incident providing a minor improvement in air quality</li> <li>▪ Reduced congestion</li> <li>▪ Improved safety</li> </ul>	1	2	0	1	Low 4	Completed	S

\* Although there would be no improvement in air quality, receptors would be removed from the area of exceedance hence this has been scored as 3.

	Action / Option	Lead Role	Impacts	Cost/benefit				Rank	Timescale	Funding
				AQ	+ive	-ive	Cost			
<b>M5 J1-J2, Oldbury &amp; West Bromwich &amp; M6 J7-J8/M5, Great Barr &amp; Yew Tree</b>										
5	Implement an improved system of contingency planning for the motorway network to improve traffic flows	Highways Agency and Local Authorities	<ul style="list-style-type: none"> <li>▪ Minor air quality improvement</li> <li>▪ Reduced congestion</li> <li>▪ Improved road safety</li> </ul>	1	2	0	2	Med 5	Completed	S
6	Evaluate the suitability of active traffic management to improve traffic flows on the M6	Highways Agency	<ul style="list-style-type: none"> <li>▪ Not known whether improvements in air quality would result, but minor improvements anticipated</li> <li>▪ Reduced congestion</li> <li>▪ Improve road safety</li> </ul>	1	2	0	2	Med 5	Ongoing	A
7	A link is planned between the M54 and the M6 / M6 Toll this will relieve congestion on the M6 Junction 8 to 10A.	Highways Agency	<ul style="list-style-type: none"> <li>▪ Minor improvement in air quality due to improved flow</li> <li>▪ Reduced congestion</li> <li>▪ May result in increased traffic flow due to improved capacity of these junctions</li> </ul>	1	2	1	1	Med 5	2012	A
8	Ramp metering of junctions (M5 (J1 + 2) and M6 (J11 +16))	Highways Agency	<ul style="list-style-type: none"> <li>▪ Not known whether air quality improvements would result, but minor improvements are anticipated (Highways Agency are currently carrying out study to determine any air quality impact)</li> <li>▪ Reduced congestion</li> <li>▪ Potential increased congestion on the slip road</li> </ul>	1	2	1	2	Low 4	2007	S

	Action / Option	Lead Role	Impacts	Cost/benefit				Rank	Timescale	Funding
				AQ	+ive	-ive	Cost			
<b>Newton Road/Birmingham Road (A34), Great Barr</b>										
9	Route 51 improvements – the council will continue to implement a programme of works to improve traffic flows and reduce queue lengths. The package includes red route treatment, road improvements, traffic control systems and improvements in the bus service to bring them up to the bus showcase route standards	SMBC Highways Direct (LTP commitment)	<ul style="list-style-type: none"> <li>▪ Minor improvement in air quality due to improved flow</li> <li>▪ Reduced congestion</li> <li>▪ May result in increased traffic flow due to improved capacity of the junction</li> </ul>	1	2	1	2	Low 4	2008	S
<b>Newton Road/Birmingham Road (A34), Great Barr</b>										
10	Future Metro Phase 2 – Varsity North	Centro & SMBC Transport	<ul style="list-style-type: none"> <li>▪ Reduced congestion</li> <li>▪ Fast and effective transport</li> <li>▪ Increases personal travel choices</li> <li>▪ Encourages local employment opportunities</li> <li>▪ Costly to implement</li> </ul>	2	2	0	1	Med 5	2015	A
<b>Bearwood Road, Smethwick</b>										
11	Bus Showcase	Centro & SMBC Highways Direct	<ul style="list-style-type: none"> <li>▪ Reduce congestion by reducing rate of traffic growth</li> <li>▪ Increases personal travel choices</li> <li>▪ Encourages local employment opportunities</li> </ul>	1	3	0	2	Med 6	2008/0 9	S
12	Pavement trial – monitor outcome of trial for potential application along Bearwood Road	Sandwell MBC Environmental Protection	<ul style="list-style-type: none"> <li>▪ Supplier suggests that 60-70% reduction in pollution can be achieved</li> <li>▪ Costly to implement</li> </ul>	3	1	0	1	Med 5	Ongoin g	A

	Action / Option	Lead Role	Impacts	Cost/benefit				Rank	Timescale	Funding
				AQ	+ive	-ive	Cost			
<b>Bearwood Road, Smethwick</b>										
13	Future Metro Phase 2 - Birmingham West Route along Hagley Road West	Centro	<ul style="list-style-type: none"> <li>▪ May improve visual amenity</li> <li>▪ Reduced congestion</li> <li>▪ Fast and effective transport</li> <li>▪ Increases personal travel choices</li> <li>▪ Encourages local employment opportunities</li> <li>▪ Costly to implement</li> </ul>	2	2	0	1	Med 5	Long term	S
14	Red route along Hagley Road	SMBC Highways Direct (LTP commitment)	<ul style="list-style-type: none"> <li>▪ Minor air quality improvement</li> <li>▪ Reduced congestion</li> </ul>	1	2	0	2	Med 5	2009/10	S
<b>Oldbury Road / Birmingham Road, Blackheath</b>										
15	Blackheath Bypass was completed in 2006, the council will implement traffic management scheme to maximise the use of the bypass. As a result of the bypass and Traffic Management proposals a reduction of 40% may be achieved	SMBC Highways Direct	<ul style="list-style-type: none"> <li>▪ Could have highly significant improvements on air quality and potentially bring NO<sub>2</sub> levels below objective</li> <li>▪ Reduced congestion</li> <li>▪ Improve safety in town centre</li> <li>▪ Local amenity may improve in town centre but may be of detriment to amenity around bypass</li> <li>▪ Does not encourage modal shift to public transport</li> <li>▪ Local economy may be affected by loss of trade</li> </ul>	3	3	1	1	Med 6	2007	A
16	Close roads in Blackheath town centre for "In Town Without my Car Day"	SMBC Transportation & Environmental Protection	<ul style="list-style-type: none"> <li>▪ Promote use of new bypass</li> <li>▪ Raise awareness of AQ issues</li> <li>▪ May inconvenience local residents and businesses</li> </ul>	1	2	1	3	Med 5	9/2007	A

	Action / Option	Lead Role	Impacts	Cost/benefit				Rank	Timescale	Funding
				AQ	+ive	-ive	Cost			
<b>High Street / Powke Lane, Blackheath</b>										
17	Possible Red Route Treatment <i>(may include side road entry treatments, new/revised traffic signals and new/revised stopping, loading and parking restrictions)</i>	SMBC Highways Direct	<ul style="list-style-type: none"> <li>Minor air quality improvement due to improved flow</li> <li>Reduced congestion</li> </ul>	1	2	0	2	Med 5	2010	A
<b>Bromford Road, West Bromwich</b>										
18	Implement Red Route Treatment <i>(may include side road entry treatments, new/revised traffic signals and new/revised stopping, loading and parking restrictions)</i>	SMBC Highways Direct	<ul style="list-style-type: none"> <li>Minor improvement on air quality due to improved flow</li> <li>Reduced congestion</li> </ul>	1	2	0	2	Med 5	2010	S
<b>Trinity Way / Kenrick Way, West Bromwich</b>										
19	Implement Red Route Treatment <i>(may include side road entry treatments, new/revised traffic signals and new/revised stopping, loading and parking restrictions)</i>	SMBC Highways Direct (LTP commitment)	<ul style="list-style-type: none"> <li>Minor improvement on air quality due to improved flow</li> <li>Reduced congestion</li> </ul>	1	2	0	2	Med 5	2010	S
<b>All Saints Way / Expressway, West Bromwich</b>										
20	Junction improvements will provide a vehicle underpass along the line of the A41 beneath the existing roundabout. The junction will also have bus priority measures.	SMBC Transportation (LTP commitment)	<ul style="list-style-type: none"> <li>Reduced congestion</li> <li>Although there is reduced congestion higher traffic speeds may mean there is no improvement in air quality</li> </ul>	1	2	0	1	Low 4	2010	A
<b>All Saints Way / Newton Road, West Bromwich</b>										
21	Red Route <i>(may include side road entry treatments, new/revised traffic signals and new/revised stopping, loading and parking restrictions)</i>	SMBC Transportation (LTP commitment)	<ul style="list-style-type: none"> <li>Minor improvement on air quality due to improved flow</li> <li>Reduced congestion</li> </ul>	1	2	0	2	Med 5	2009	S

	Action / Option	Lead Role	Impacts	Cost/benefit				Rank	Timescale	Funding
				AQ	+ive	-ive	Cost			
<b>Sedgley Road East / Dudley Port, Tipton</b>										
22	Implement Red Route Treatment <i>(may include side road entry treatments, new/revised traffic signals and new/revised stopping, loading and parking restrictions)</i>	SMBC Highways Direct (LTP commitment)	<ul style="list-style-type: none"> <li>▪ Minor improvement on air quality due to improved flow</li> <li>▪ Reduced congestion</li> </ul>	1	2	0	2	Med 5	2008	S
<b>Soho Way/Grove Lane / Cranford Street, Smethwick</b>										
23	Implement Red Route Treatment <i>(may include side road entry treatments, new/revised traffic signals and new/revised stopping, loading and parking restrictions)</i>	SMBC Highways Direct (LTP commitment)	<ul style="list-style-type: none"> <li>▪ Minor improvement on air quality due to improved flow</li> <li>▪ Reduced congestion</li> </ul>	1	2	0	2	Med 5	2008	S

**Table 10-6 - Borough Wide Actions**

	Action / Option	Lead Role	Impacts	Costs/benefit				Rank	Timescale	Funding
				AQ	+ive	-ive	Cost			
<b>Reducing Vehicle Emissions</b>										
1	Improve the council fleet by – <ul style="list-style-type: none"> <li>• Where possible any new SMBC vehicles purchased are to Euro 4 standard</li> <li>• Monthly fuel reports are produced and regular user group meetings held to try and improve efficiency</li> </ul>	SMBC Highways Direct	<ul style="list-style-type: none"> <li>▪ Reduce emissions from council fleet</li> <li>▪ Reduction in greenhouse gases and particulates</li> <li>▪ Lead by example</li> </ul>	1	2	0	2	Med 5	Ongoing	S
2	Promote Eco-Driving – develop promotional strategy to encourage drivers to drive economically	SMBC Transport & Environmental Protection	<ul style="list-style-type: none"> <li>▪ Improves awareness of fuel efficiency &amp; environmental impact of vehicles,</li> <li>▪ Reduced greenhouse gases,</li> <li>▪ More economical driving,</li> <li>▪ Improve road safety</li> </ul>	2	3	0	3	High 8	2007	W
3	Develop strategy to encourage drivers not to allow their engines to idle when parked	SMBC Transport & Environmental Protection	<ul style="list-style-type: none"> <li>▪ Reduced greenhouse gases,</li> <li>▪ More economical driving</li> <li>▪ Improve air quality</li> </ul>	1	1	0	3	Med 5	2008	A
4	Establish a programme of vehicle emission testing	SMBC Environmental Protection	<ul style="list-style-type: none"> <li>▪ Encourage vehicle maintenance</li> <li>▪ Educate</li> <li>▪ Reduces gross polluting vehicles</li> <li>▪ Potentially reduce noise</li> </ul>	1	1	0	3	Med 5	2007	A

	Action / Option	Lead Role	Impacts	Costs/benefit				Rank	Timescale	Funding
				AQ	+ive	-ive	Cost			
<b>Improving Public Transport to Reduce Traffic Volumes</b>										
5	Showcase route extension and improvements (not all route funding secured).	SMBC Transportation / CENTRO (LTP commitment)	<ul style="list-style-type: none"> <li>▪ Improve local air quality</li> <li>▪ Encourage less car use by providing attractive alternative</li> <li>▪ Reduced congestion</li> <li>▪ Increased social inclusion and accessibility</li> <li>▪ Reduced greenhouse gas emissions</li> <li>▪ Possible impact on parking availability on routes and perceived negative impact on local trade</li> </ul>	2	3	0	1	Med 6	Ongoing	S/A
6	Improvements of branding to increase attractiveness of public transport	Travel West Midlands/CENTRO (LTP commitment)	<ul style="list-style-type: none"> <li>▪ Encourage less car use by providing attractive alternative</li> <li>▪ Reduced congestion</li> <li>▪ Increased social inclusion and accessibility</li> <li>▪ Reduced greenhouse gas emissions</li> </ul>	1	2	0	2	Med 5	Ongoing	W
7	Improving access to information regarding transport options	SMBC Transportation/ CENTRO (LTP commitment)	<ul style="list-style-type: none"> <li>▪ Encourage less car use by providing attractive alternative</li> <li>▪ Reduction in congestion</li> <li>▪ Increased social inclusion and accessibility</li> <li>▪ Reduction in greenhouse gases</li> </ul>	2	2	0	2	Med 6	Ongoing	W
8	Promote Midland Metro extension (Wednesbury to Brierley Hill)	SMBC Transportation/ CENTRO (LTP priority)	<ul style="list-style-type: none"> <li>▪ Encourage less car use by providing attractive alternative</li> <li>▪ Reduced congestion</li> <li>▪ Increased social inclusion and accessibility</li> <li>▪ Reduced greenhouse gas emissions</li> </ul>	2	2	0	1	Med 5	2012	A
9	Future Metro Phase 2 – 5W's. Wednesbury to Walsall Varity North – A34 Birmingham to M6 Junction 7 Birmingham West – Birmingham to Quinton.	SMBC Transportation/ CENTRO (LTP priority)	<ul style="list-style-type: none"> <li>▪ Encourage less car use by providing attractive alternative</li> <li>▪ Reduced congestion</li> <li>▪ Increased social inclusion and accessibility</li> <li>▪ Reduced greenhouse gas emissions</li> </ul>	2	2	0	1	Med 5	Long term	A



	Action / Option	Lead Role	Impacts	Costs/benefit				Rank	Timescale	Funding
				AQ	+ive	-ive	Cost			
<b>Improving Public Transport to Reduce Traffic Volumes</b>										
10	Increased bus lane enforcement (increase number of cameras on buses for bus lane enforcement)	Travel West Midlands	<ul style="list-style-type: none"> <li>▪ Encourage less car use by providing attractive alternative</li> <li>▪ Reduced congestion</li> </ul>	1	3	0	2	Med 6	Ongoing	S
<b>Improving the Road Network to Reduce Congestion</b>										
11	Introduction of Red Routes to ease congestion	SMBC Highways Direct (LTP commitment)	<ul style="list-style-type: none"> <li>▪ Reduced congestion</li> <li>▪ Minor improvement on air quality due to improved flow</li> <li>▪ Improved road safety</li> <li>▪ May inconvenience local residents</li> </ul>	1	2	1	2	Low 4	Ongoing	S
12	Improvement of Urban Traffic Control Systems designed to reduce congestion	SMBC West Midlands Wide Initiative (LTP commitment)	<ul style="list-style-type: none"> <li>▪ Improved road safety</li> <li>▪ Reduced congestion</li> <li>▪ Reduction in greenhouse gases and local air quality pollutants</li> </ul>	2	2	0	1	Med 5	Ongoing	S
13	Burnt Tree Island improvements	SMBC/DMBC Transportation (LTP priority)	<ul style="list-style-type: none"> <li>▪ Reduced congestion</li> <li>▪ Reduction in greenhouse gases and local air quality pollutants, although objective is not currently exceeded</li> <li>▪ Improved road safety</li> <li>▪ Improve bus journey times</li> </ul>	1	2	0	1	Low 4	2009	A
14	Owen St crossing	SMBC Transportation/ Highways Direct (LTP priority)	<ul style="list-style-type: none"> <li>▪ Reduced congestion</li> <li>▪ Reduction in greenhouse gases and local air quality pollutants, although objective is not currently exceeded</li> <li>▪ Improve safety</li> </ul>	1	2	0	1	Low 3	2009	A

	Action / Option	Lead Role	Impacts	Costs/benefit				Rank	Timescale	Funding
				AQ	+ive	-ive	Cost			
<b>Improving the Road Network to Reduce Congestion</b>										
15	Cradley Heath Bypass	SMBC Highways Direct (LTP commitment)	<ul style="list-style-type: none"> <li>▪ Reduced congestion</li> <li>▪ Reduction in greenhouse gases and local air quality pollutants, although objective is not currently exceeded</li> <li>▪ Improved road safety</li> <li>▪ Local amenity may improve in town centre but may be detriment to amenity around bypass.</li> <li>▪ Does not encourage modal shift to public transport</li> </ul>	2	3	1	1	Med 5	2007	S
<b>Using Area Planning Methods to Reduce Traffic Volumes and Exposure</b>										
16	Ensure AQ considerations are included in the new Local Development Framework Ensure policies seek to reduce the need to travel and promote the use of modes other than the car	SMBC Planning	<ul style="list-style-type: none"> <li>▪ Improve air quality</li> <li>▪ Reduce car use</li> <li>▪ Reduce exposure to poor air quality</li> <li>▪ Possible general environmental improvements</li> <li>▪ Potential social and economic impacts</li> <li>▪ Perceived reduction in development opportunities</li> <li>▪ May increase cost of development</li> </ul>	3	2	1	3	High 7	Ongoing	W

	Action / Option	Lead Role	Impacts	Costs/benefit				Rank	Timescale	Funding
				AQ	+ive	-ive	Cost			
17	Section 106 – Investigate the practicability of S106 agreements being used to secure monitoring funding and balancing measures in applications where AQ is an issue (section 106 agreements are to be replaced in the future with two new routes which together are designed to have the same effect as section 106 does now, the provisions retain the existing negotiated route while also providing for a set contribution payable by developers).	SMBC Planning	<ul style="list-style-type: none"> <li>▪ To mitigate the effects of development on air quality</li> <li>▪ To secure funding to monitor impact of developments</li> <li>▪ May increase cost of development</li> </ul>	2	2	1	3	Med 6	Ongoing	W
<b>Using Area Planning Methods to Reduce Traffic Volumes and Exposure</b>										
18	AQ guidance Provide guidance in relation to air quality for developers to follow when submitting planning applications	SMBC Environmental Protection, Planning	<ul style="list-style-type: none"> <li>▪ To adopt consistent approach to AQ assessments for developers</li> </ul>	2	2	0	3	High 7	Ongoing	W
19	Support use (reopening) of Stourbridge – Walsall line for rail freight	SMBC Transportation/ Planning	<ul style="list-style-type: none"> <li>▪ Reduction in greenhouse gases and local air quality pollutants</li> <li>▪ Reduced congestion</li> <li>▪ Reduce freight on roads</li> </ul>	2	2	1	1	Low 4	Ongoing	A
20	Congestion charging – the council will continue to monitor the implications and effectiveness of any congestion charging proposals	SMBC Transportation	<ul style="list-style-type: none"> <li>▪ Improve air quality</li> <li>▪ Raise money for transport/public transport improvements</li> <li>▪ Reduced congestion</li> <li>▪ Reduce noise</li> <li>▪ Cost to motorist</li> <li>▪ Potential equity issues</li> <li>▪ Unpopular with some motorists</li> </ul>	2	2	3	1	Low 2	2014	A

	Action / Option	Lead Role	Impacts	Costs/benefit				Rank	Timescale	Funding
				AQ	+ive	-ive	Cost			
21	Development Control – continue to consider air quality issues for new planning applications in line with the agreed planning protocol	SMBC Environmental Protection and Planning	<ul style="list-style-type: none"> <li>▪ Improve air quality</li> <li>▪ Reduce car use</li> <li>▪ Reduce exposure to poor air quality</li> <li>▪ Perceived reduction in development opportunities</li> <li>▪ May increase cost of development</li> </ul>	2	3	1	3	High 7	Ongoing	W
<b>Reducing Air Pollution from Industry, Commerce and Residential Areas</b>										
22	Continuation of Sandwell Energy Efficiency Advice Centre	Sandwell MBC Agenda 21	<ul style="list-style-type: none"> <li>▪ Improve air quality (local pollutants and greenhouse gases)</li> <li>▪ Reduce energy consumption</li> </ul>	1	2	0	3	Med 6	Ongoing	W
<b>Reducing Air Pollution from Industry, Commerce and Residential Areas</b>										
23	Improvement of the energy rating of dwellings. The Warm Zone Scheme provides general energy efficiency advice and installation of energy efficiency measures.	SMBC Housing	<ul style="list-style-type: none"> <li>▪ Reduction in the amount of energy used in residential properties</li> <li>▪ Reduced fuel bills for householders</li> <li>▪ Reduction in the amount of greenhouse gases and local air quality pollutants emitted associated with the production of electricity</li> </ul>	1	3	0	3	High 7	Ongoing	S

	Action / Option	Lead Role	Impacts	Costs/benefit				Rank	Timescale	Funding
				AQ	+ive	-ive	Cost			
<b>Changing Levels of Travel Demand / Promotion of Alternative Modes of Transport</b>										
24	Promotion of Walking	SMBC Transportation (LTP commitment)	<ul style="list-style-type: none"> <li>▪ Improved fitness, improved overall town, village and local environment</li> <li>▪ Reduced congestion</li> <li>▪ Improved choice</li> <li>▪ Increased social inclusion and accessibility</li> <li>▪ Perceived danger from traffic</li> </ul>	2	3	1	3	High 7	Ongoing	S
25	Promotion of Cycling	SMBC Transportation (LTP commitment)	<ul style="list-style-type: none"> <li>▪ Improved fitness</li> <li>▪ Improved overall town, village and local environment</li> <li>▪ Reduction in congestion</li> <li>▪ Improved choice</li> <li>▪ Increased social inclusion and accessibility</li> <li>▪ Perceived danger from traffic</li> </ul>	2	3	1	3	High 7	Ongoing	S
<b>Changing Levels of Travel Demand / Promotion of Alternative Modes of Transport</b>										
26	Encourage travel plans for employers, schools & hospitals	SMBC Transportation/ TWM/ CENTRO (LTP commitment)	<ul style="list-style-type: none"> <li>▪ Reduces parking and congestion, improve wider environment (e.g. visual amenity and noise)</li> <li>▪ Fosters improved relations between company, employees and local residents</li> <li>▪ Reduction in greenhouse gases and local air quality pollutants</li> <li>▪ Improved choice</li> </ul>	3	3	0	3	High 9	Ongoing	A

	Action / Option	Lead Role	Impacts	Costs/benefit				Rank	Timescale	Funding
				AQ	+ive	-ive	Cost			
27	Air Quality Monitoring <ul style="list-style-type: none"> <li>• Reporting of results and publicity</li> <li>• Produce annual reports and publish results</li> <li>• Regularly review suitability of monitoring</li> </ul>	SMBC Environmental Protection	<ul style="list-style-type: none"> <li>▪ Raises public awareness</li> <li>▪ Informs planning process</li> </ul>	1	3	0	3	High 7	Ongoing	W
28	Air Quality info on website <ul style="list-style-type: none"> <li>• Publish AQ action plan on web and develop other service information</li> </ul>	SMBC Environmental Protection	<ul style="list-style-type: none"> <li>▪ Raises public awareness</li> <li>▪ Easy access to relevant documentation and data</li> </ul>	1	3	0	3	High 7	Ongoing	A
<b>Changing Levels of Travel Demand / Promotion of Alternative Modes of Transport</b>										
29	Promote car sharing among residents and businesses in the area	SMBC Transportation	<ul style="list-style-type: none"> <li>▪ Improve air quality</li> <li>▪ Reduced congestion</li> <li>▪ Financial savings</li> </ul>	3	3	0	3	High 9	Ongoing	A

## **11. MONITORING AND EVALUATION**

- 11.1. To evaluate the effectiveness of the action plan the council will continue to monitor NO<sub>2</sub> in each of the AQMA's with the use of diffusion tubes and continuous analysers. This will show whether the expected and required reduction in NO<sub>2</sub> concentrations is occurring and whether the objective level is likely to be achieved.
- 11.2. Each action identified by this plan will be reviewed during the regular review and assessment process to evaluate its success and to ensure that actions are being progressed.

## **12. PUBLIC CONSULTATION**

- 12.1. The action planning process has involved many of the relevant parties through the Steering Group meetings. These stakeholders and a number of additional stakeholders that have been identified will be consulted directly; these are listed in Appendix 3. The wider stakeholders will now be consulted on this draft Action Plan through discussions at the Council's Town Teams and by making the report available through local libraries and the internet.

## **13. SUMMARY**

- 13.1 Actions to improve air quality across Sandwell have been identified and ranked according to their air quality, wider environmental, economic, and social impacts. This will provide Sandwell MBC with the information required to determine where efforts to improve air quality in Sandwell should be focused.
- 13.2 Once the consultation period has been completed it will be possible to begin the implementation of the most beneficial actions identified. Monitoring will continue to assess the efficacy of action planning once in place.
- 13.3 Actions will be subject to continual review and once a significant period of monitoring has been undertaken Sandwell MBC will be even better placed to assess the efficacy of the actions that will be implemented across the borough.

- 13.4 Any comments or suggestions concerning the contents of this plan should be referred to Sandwell's Air Quality Team:

Environmental Health & Trading Standards  
Environment House  
Lombard Street  
West Bromwich  
West Midlands  
B70 8 RU  
Fax: 0121 569 6599

[ehs\\_enquiries@sandwell.gov.uk](mailto:ehs_enquiries@sandwell.gov.uk)



## **APPENDICES**

Appendix 1 – National Air Quality Objectives

Appendix 2 – Source Apportionment and Reductions Required

Appendix 3 – List of Stakeholder Consultations

## Appendix 1 National Air Quality Objectives

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31 December 2003
	5 $\mu\text{g}/\text{m}^3$	Annual mean	31 December 2010
1,3 butadiene	2.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31 December 2003
Carbon monoxide	10 $\text{mg}/\text{m}^3$	Maximum daily running 8 hour mean	31 December 2003
Lead	0.5 $\mu\text{g}/\text{m}^3$	Annual mean	31 December 2004
	0.25 $\mu\text{g}/\text{m}^3$	Annual mean	31 December 2008
Nitrogen dioxide	200 $\mu\text{g}/\text{m}^3$ (not to be exceeded more than 18 times a year)	1 hour mean	31 December 2005
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31 December 2005
Particles (PM <sub>10</sub> )	50 $\mu\text{g}/\text{m}^3$ (not to be exceeded more than 35 times a year)	24 hour mean	31 December 2004
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31 December 2004
Sulphur dioxide	266 $\mu\text{g}/\text{m}^3$ (not to be exceeded more than 35 times a year)	15 minute	31 December 2005
	350 $\mu\text{g}/\text{m}^3$ (not to be exceeded more than 24 times a year)	1 hour mean	31 December 2004
	125 $\mu\text{g}/\text{m}^3$ (not to be exceeded more than 3 times a year)	24 hour mean	31 December 2004

## Appendix 2      Source Apportionment and Reductions Required

Source apportionment work was carried out using the existing West Midlands emissions database for 2005. This emissions database is currently under review and once all input data has been updated it will be possible to reissue our source apportionment work with increased confidence in its accuracy.

Initially all roads and all vehicle types within an area are selected to elicit the total amount of NO<sub>x</sub> emitted by road traffic in that area.

Then separate vehicle types are selected one by one in order to estimate the amount of NO<sub>x</sub> generated by each vehicle type. The amount generated by each vehicle type in an area is divided by the total amount for the area in order to give the proportion generated by each vehicle type.

No estimate of industrial and domestic emissions has been made as traffic is considered to be the main pollutant source of concern.

NO<sub>x</sub> reductions required were calculated using the highest monitored NO<sub>2</sub> concentrations. For each exceedance area the diffusion tube recording the highest annual mean concentration in 2005 was identified. These highest monitored NO<sub>2</sub> concentrations were entered into the NO<sub>x</sub> from NO<sub>2</sub> calculator spreadsheet produced by Bureau Veritas which is available on the Air Quality Archive website at the following address [http://www.airquality.co.uk/archive/laqm/tools/nox\\_from\\_no2\\_calculatorv2.xls](http://www.airquality.co.uk/archive/laqm/tools/nox_from_no2_calculatorv2.xls).

Background NO<sub>x</sub> concentrations were also entered (these were drawn from the air quality archive [http://www.airquality.co.uk/archive/laqm/tools/222\\_2004.csv](http://www.airquality.co.uk/archive/laqm/tools/222_2004.csv)). The calculator then generated a total annual mean NO<sub>x</sub> concentration and an annual mean road increment of NO<sub>x</sub>.

It was calculated that a NO<sub>x</sub> concentration of 106µg/m<sup>3</sup> is approximately equivalent to the NO<sub>2</sub> annual mean objective concentration of 40µg/m<sup>3</sup>.

This allowed a target concentration for the roadside NO<sub>x</sub> increment to be calculated by subtracting the background NO<sub>x</sub> concentration from 106µg/m<sup>3</sup>. This target roadside NO<sub>x</sub> increment was then divided by the roadside increment generated by the calculator in order to discern the roadside NO<sub>x</sub> reduction required.

### **Appendix 3      List of Stakeholder Consultations**

- Highways Agency
- Sandwell MBC Transportation
- Sandwell MBC Strategic Planning
- Sandwell MBC Environmental Protection
- Chief Engineers and Planning Officers Group
- Black Country Study Group
- Sandwell Primary Care Trust
- CENTRO
- The Road Haulage Association
- Travel West Midlands
- Sandwell Agenda 21 Team
- Cycling in Sandwell Group
- Environment Agency
- Walsall MBC
- Birmingham CC
- Dudley MBC
- Solihull MBC
- Coventry MBC
- Wolverhampton MBC