

Blackburn with Darwen
Borough Council

Air Quality Action Plans 2007

1. Intack
2. Bastwell
3. A666 between Robert Street and
Wraith Street, Darwen
4. Witton
5. Earcroft



BLACKBURN WITH DARWEN BOROUGH COUNCIL AIR QUALITY MANAGEMENT AREAS – ACTION PLAN

Summary

In 2005 Blackburn with Darwen Borough Council declared five Air Quality Management Areas because work had shown that air quality at these locations exceeds the health based National Air Quality Objective for Nitrogen Dioxide. The raised levels of this pollutant are mainly due to road traffic emissions. This conclusion was supported by the findings of a Further Assessment completed in September 2006. The most recent monitoring results show that nitrogen dioxide concentrations at two of the five Air Quality Management Areas have just met the objective, but by a marginal amount. The improvement isn't sufficient to justify the revocation of Air Quality Management Area status at these locations. The Council therefore has an obligation under the Environment Act 1995 to devise and implement measures in pursuit of improved air quality at the five Air Quality Management Areas

This document contains the action plans for each of the five Air Quality Management Areas. It summarises the outcome of consultation exercises already undertaken and presents an evaluation of the range of air quality improvement measures that have been considered. A range of measures have been identified for inclusion in the action plans. They range from physical changes at junctions which will improve traffic flow, such as traffic light sequencing and parking restrictions, to measures that seek to promote less polluting forms of travel, such as school travel plans and awareness raising. Ten additional measures have been identified for evaluation and possible inclusion in future revisions of the action plan. Sources of funding have been identified.

Following a further period of consultation a final action plan will be determined and incorporated into the Local Transport Plan, as the reduction of road traffic pollution is considered an important aspect of sustainable transport and development policies. Important aspects of the plan will be the ongoing commitment to monitoring, and periodic reviews of the measures required to attain acceptable air quality.

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1 INTRODUCTION

1.1 Background

Over the last 100 years there have been big changes in the amount and types of air pollution affecting people living in Blackburn and Darwen. These changes have occurred for a number of reasons, such as the decline of the traditional polluting industrial activities and the introduction of smoke control areas. Pea-soup fogs and the huge belching black chimneys are a thing of the past. Today, road traffic the most significant source of outdoor air pollution within our Borough.

Our ability to measure pollution and to understand the effects of pollution has changed too. The Government has introduced a strategy to protect human health which focuses on seven key air pollutants. Under the Local Air Quality Management regime, Blackburn with Darwen Borough Council is required to assess air quality against national objectives for these seven pollutants. If the authority identifies locations where there are likely to be exceedences of the national objectives it must develop and implement measures in pursuit of acceptable air quality.

A table listing the air quality national objectives is contained in Appendix 1 of this report.

1.2 Outcomes of air quality reviews and assessments undertaken within the Borough

In Round 1 of Local Air Quality Management (1997-2003) Blackburn with Darwen Borough Council satisfied the Government that there were no air quality objectives predicted to exceed their target dates across the Borough.

In Round 2, Blackburn with Darwen submitted the following reports:

- 2003: Updating and Screening Assessment
- 2004: Detailed Assessment
- 2005: Progress Report

The Updating and Screening Assessment identified 6 areas in the borough where there was evidence to suggest that the 40 $\mu\text{g}/\text{m}^3$ annual mean objective for nitrogen dioxide was being exceeded. In the subsequent Detailed Assessment, it was considered that exceedences of the objective were likely at 5 of these locations and consequently, on 18th October 2005 Blackburn and Darwen Borough Council declared the following AQMAs (see Figure 2 and more detailed AQMA maps in Appendix 2):

- AQMA No.1 Intack - Accrington Road / Whitebirk Road junction
- AQMA No.2 Bastwell– Whalley Range / Whalley New Road junction
- AQMA No.3 Darwen Town Centre - A666 between Robert St and Wraith St
- AQMA No.4 Witton - Preston Old Road / Buncer Lane junction
- AQMA No.5 Earcroft - A666 / M65 Link Road junction

Figure 1: Air Quality Management Areas



A June 2006 Updating And Screening Assessment supported the conclusion that levels of nitrogen dioxide were unacceptably high in the AQMAs, and it also identified raised levels outside the AQMAs at Guide and at the Livesey Branch Road / Moorgate Street junction. However, subsequent monitoring has shown that the nitrogen dioxide levels at these locations do not exceed the national objective.

A Further Assessment report produced in September 2006 concluded that there were exceedences of the nitrogen dioxide objective at all of the AQMAs.

Monitoring undertaken throughout 2006 has identified a reduction in the annual average concentrations at the Intack and Bastwell AQMAs, but this improvement is marginal and concentrations remain close to the objective value. A precautionary approach is being adopted, the locations will retain their AQMA designation and an action plans will be implemented to secure continued improvement at these locations.

The monitoring results for 2005 and 2006 are included in Appendix 3.

The Council has a duty under the Environmental Protection Act 1995 to implement measures in pursuit of acceptable air quality at the five AQMAs. Blackburn with Darwen Borough Council is rated excellent under the Comprehensive Performance Assessment (CPA) and is therefore exempt

from the requirement to submit an Action Plan if they so wish. If they opt to produce an action plan they are still required to follow statutory guidance. Blackburn with Darwen Borough Council has decided to produce action plans for the five AQMAs as this represents good practice.

1.3 Sources of nitrogen dioxide in our Borough (Source apportionment)

All combustion processes in air produce oxides of nitrogen. Nitrogen dioxide is associated with adverse effects upon human health. Nitrogen dioxide (NO₂) may have both acute (short term) and chronic (long-term) effects on health, particularly in people with asthma. It causes inflammation of the airways at relatively high concentrations. It can exacerbate symptoms associated with respiratory illness. Exposure to nitrogen dioxide may put children at increased risk of respiratory infection and may lead to poorer lung function in later life. NO₂ is also an ozone precursor, and therefore involved in the formation of other pollutants.

There are many of sources of nitrogen dioxide. Some nitrogen dioxide is produced in the home, some is produced by industrial processes. However, a large proportion of air pollution today comes from road vehicles. Levels in our borough are highest at busy urban junctions where emissions from slow moving vehicles are trapped by nearby buildings and the surrounding topography. This is a particular issue for Blackburn with Darwen given the Pennine geography and tightly formed Victorian streetscape. Pollution concentrations drop rapidly as you move away from the kerbside. Even the busiest roads will have little impact on the background pollution level beyond 100 - 150 metres.

In order to develop an appropriate action plan it is necessary to identify the sources contributing to the objective exceedences at locations within the AQMAs. Table 1 and Figure 2 set out the source contributions of traffic related sources which have been apportioned to the following categories:

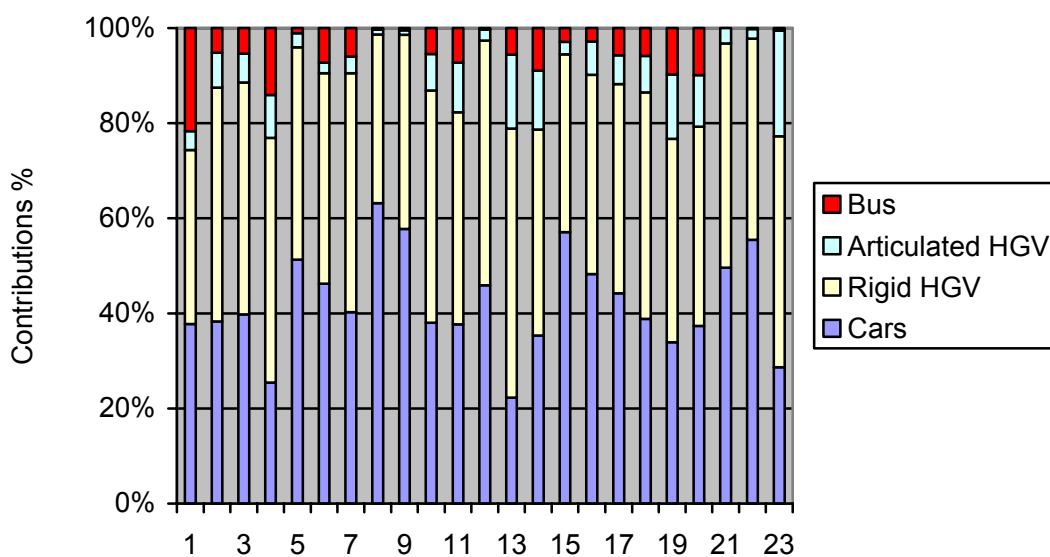
- Cars
- Light Goods Vehicles
- Rigid Heavy Goods Vehicles
- Articulated Heavy Goods Vehicles
- Buses and Coaches

Source apportionment of the local traffic emissions has been undertaken to inform the action plan. This shows greater proportions of emissions from HGVs, and in some locations buses, than might be expected from the vehicle numbers and proportions. This highlights the importance of keeping all sources under consideration when contemplating measures to include within the action plan.

Table 1: % contributions of local traffic related sources within AQMAs.

	Site	Cars	LGV	Rigid HGV	Articulated HGV	Bus
1	AQMA 1 Intack Site 15	34.0	9.9	32.9	3.6	19.5
2	AQMA 1 Intack Site 56	34.6	9.8	44.4	6.6	4.7
3	AQMA 1 Intack Site 57	35.5	10.7	43.5	5.4	4.8
4	AQMA 1 Intack Site 58	23.7	6.9	47.8	8.4	13.1
5	AQMA 2 Bastwell Site 48	43.4	15.4	37.8	2.5	0.9
6	AQMA 2 Bastwell Site 49	40.6	12.2	38.8	1.9	6.4
7	AQMA 2 Bastwell Site 50	35.7	11.4	44.5	3.1	5.3
8	AQMA 2 Bastwell Site 51	52.4	16.9	29.5	0.8	0.3
9	AQMA 3 A666 Site 63	49.3	14.8	34.8	0.8	0.4
10	AQMA 3 A666 Site 65	34.1	10.3	43.8	6.9	4.9
11	AQMA 3 A666 Site 66	33.7	10.7	39.8	9.3	6.5
12	AQMA 3 A666 Site 67	40.0	12.9	44.8	2.0	0.3
13	AQMA 3 A666 Site 68	20.8	6.8	52.7	14.5	5.2
14	AQMA 3 B666 Site 64	32.0	9.6	39.2	11.2	8.1
15	AQMA 4 Witton Site 52	49.5	13.3	32.4	2.3	2.5
16	AQMA 4 Witton Site 53	42.2	12.5	36.6	6.1	2.5
17	AQMA 4 Witton Site 54	39.4	10.8	39.2	5.4	5.1
18	AQMA 5 Earcroft Site 11	35.0	10.0	42.9	6.9	5.3
19	AQMA 5 Earcroft Site 25	30.9	8.9	38.9	12.3	8.9
20	AQMA 5 Earcroft Site 59	33.7	9.8	37.8	9.8	8.9
21	AQMA 5 Earcroft Site 60	43.3	12.7	41.2	2.8	0.0
22	AQMA 5 Earcroft Site 62	47.7	14.0	36.4	1.7	0.2
23	AQMA 5 Earcroft Site 70	26.1	9.0	44.1	20.2	0.5

Figure 2: Source apportionment of traffic related nitrogen dioxide emissions at 23 monitoring sites within the 5 AQMAs



1.4 Air quality improvements needed

The degree of improvement needed in order for the annual mean objective for nitrogen dioxide to be achieved is shown in table 2. It is based on the highest measured annual mean concentration during 2005 at a relevant receptor in each AQMA

In terms of describing the reduction in emissions that is required it is most appropriate to consider the emissions of nitrogen oxides (NO_x) from the local traffic. Even though in terms of total nitrogen dioxide, the reduction required is in the region of 1 to 14% at the sites below, locally-generated NO_x emissions affecting these receptors would need to be some 3-29% percent lower to have achieved the objective. This relatively large percentage reduction reflects the point that local background concentrations make up about half the total and because this contribution is assumed not to change, the influence of changes to the local fraction would be muted. The calculation does not take account of the point that reducing emissions from the wider road network will reduce the background concentrations and thus bring about local improvements.

Table 2: Air quality improvements required

	Highest measured NO ₂ level at receptor (2005)	Improvement in NO ₂ required to achieve the objective	Estimated background (from Netcen maps)	Road contribution to NO ₂	Equivalent NO _x contribution from roads	NO _x contribution from roads to achieve the NO ₂ objective	% NO _x reduction required to achieve objective
AQMA 1 Intack	46.4 µg/m ³	6.4 µg/m ³	24.2 µg/m ³	22.2 µg/m ³	79.2 µg/m ³	56.4 µg/m ³	29%
AQMA 2 Bastwell	43.2 µg/m ³	3.2 µg/m ³	22.2 µg/m ³	21.0 µg/m ³	72.7 µg/m ³	61.6 µg/m ³	15%
AQMA 3 A666	45.5 µg/m ³	5.5 µg/m ³	22.2 µg/m ³	23.3 µg/m ³	80.7 µg/m ³	61.6 µg/m ³	24%
AQMA 4 Witton	42.7 µg/m ³	2.7 µg/m ³	18.8 µg/m ³	23.9 µg/m ³	78.3 µg/m ³	69.5 µg/m ³	11%
AQMA 5 Earcroft	40.5 µg/m ³	0.5 µg/m ³	21.3 µg/m ³	19.2 µg/m ³	65.5 µg/m ³	63.8 µg/m ³	3%

2. Measures to be implemented

Measures to be implemented in pursuit of improved air quality have been proposed by Blackburn with Darwen Borough Council and by members of the public during consultation exercises. A brief description of the consultation undertaken and the responses received can be found in Appendix 5.

An evaluation of the measures has identified the measures listed in Table 3 that will form the action plans for each AQMA. A description of all the options that were evaluated can be found in Appendix 6.

Table 3 – Action plan measures for implementation

	AQMA 1 Intack	AQMA 2 Bastwell	AQMA 3 [1]	AQMA 4 Witton	AQMA 5 Earcroft
Maximise signal efficiency	•	•	•	•	•
Expand right turn lane				•	
Improved junction signage					•
Parking restrictions	•	•	•	•	•
Improved parking provision		•			
School travel plans	•	•	•	•	•
Mosque marshalling		•			
East Lancs Rapid Transport project	•		•		•
Bus only lane (Belgrave Mill)			•		
Bus quality partnerships	•	•	•	•	•
Relocation of bus depot	•				
Public transport information	•	•	•	•	•
Improvements to bus station			•		•
Improvements to train station			•		•
Improvements to train line and service			•		•
Car sharing	•	•	•	•	•
Advanced stop lanes for cyclists	•	•	•	•	•
Development control	•	•	•	•	•
Control of industrial emissions	•	•	•	•	•
Control of bonfire & chimney emissions	•	•	•	•	•
Number of measures	12	12	15	11	15

[1] - AQMA 3 A666 Between Robert Street and Wraith Street, Darwen

3. Measures to be evaluated for potential inclusion in future revisions of the action plan

In addition, ten potential measures have been identified that will be evaluated for possible inclusion in future revisions of the action plan.

Table 4 – Measures to be evaluated for potential inclusion in future revisions of the action plans.

1. All AQMAs	Roadside emissions testing
2. All AQMAs	Reducing emissions from taxis
3. AQMA 1	Closure of the St Ives arm of the Intack junction and re-routing St Ives traffic to Shadsworth Road or Bank Lane
4. AQMA 1	Relocation of the pedestrian refuge on Accrington Road
5. AQMA 2	Evaluate option of introducing right-turn lanes
6. AQMA 2	Evaluate option of restricting access to smaller roads in order to prevent conflicting turns and improve flows on the main arms of the Bastwell junction
7. AQMA 2 & 4	Relocation of bus stops away from the junction
8. AQMA 3	Evaluate option of prohibiting entry to the street between the Post Office and HSBC Bank from Darwen Circus junction
9. AQMA 4	Evaluate feasibility of banning right turns out of Spring Lane
10. AQMA 4	Evaluation of whether the traffic islands on the west arm of the junction can be moved or removed

4. Implementation

The action plans will be determined and incorporated into the Local Transport Plan, as the reduction of road traffic pollution is considered an important aspect of sustainable transport and development policies. Important aspects of the plan will be the ongoing commitment to monitoring, and periodic reviews of the measures required in order to ensure that the most appropriate measures are being employed.

A combination of the following sources of funding will be used to deliver the measures identified in the action plan:

- The Council's revenue funding for:
 - General traffic management solutions, enforcement and network management
 - Green travel planning, workplace travel planning and school travel planning
 - Support of national, regional and local campaigns together with provision of information and marketing generally and
 - ongoing monitoring.
- LTP 2 (Integrated transport)
- LTP 2 (Highways maintenance)
- Developer funding of schemes to mitigate adverse air quality impacts associated with new developments.

Table 4 identifies expenditure committed in the Council's Local Transport Plan 2 2006-2011 investment programme for air quality related improvements at the five AQMAs.

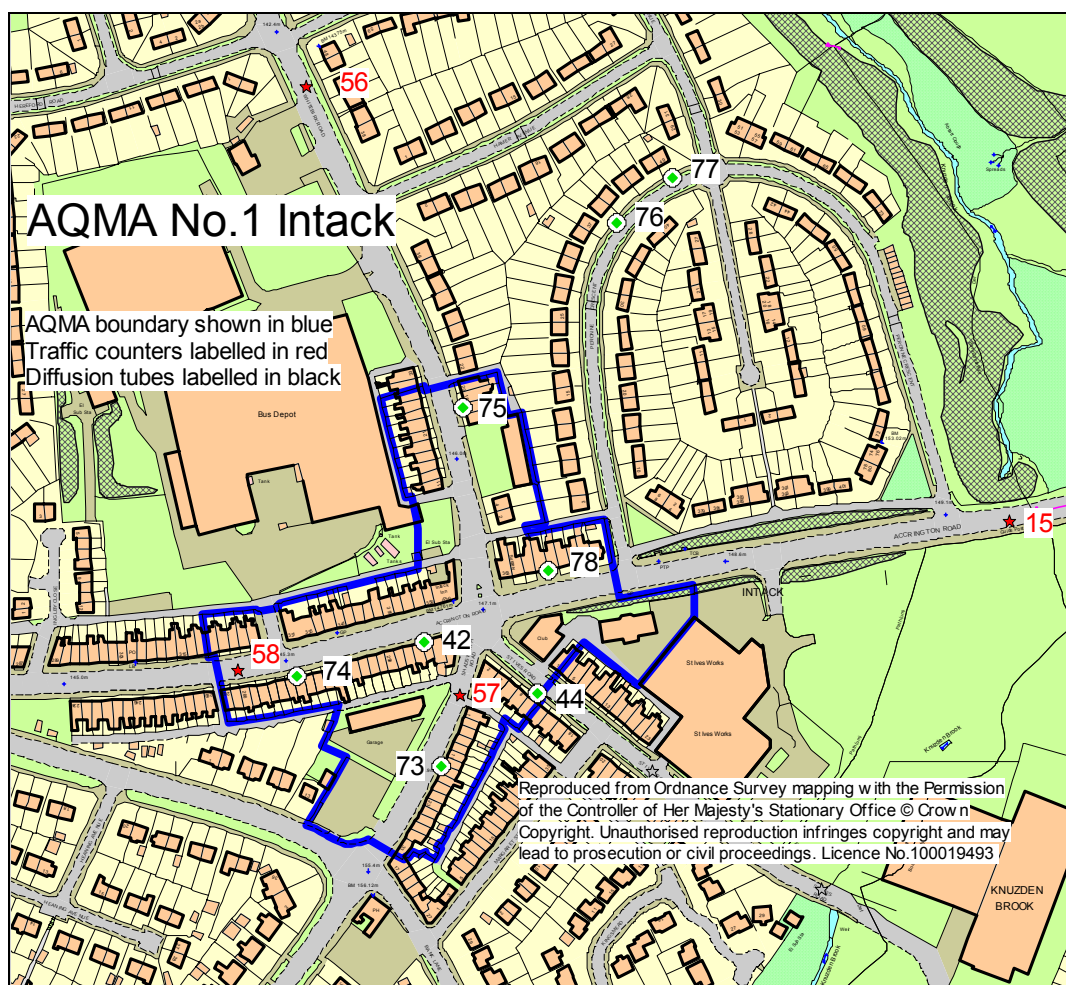
Table 4 – LTP 2 Expenditure on air quality related improvements in AQMAs

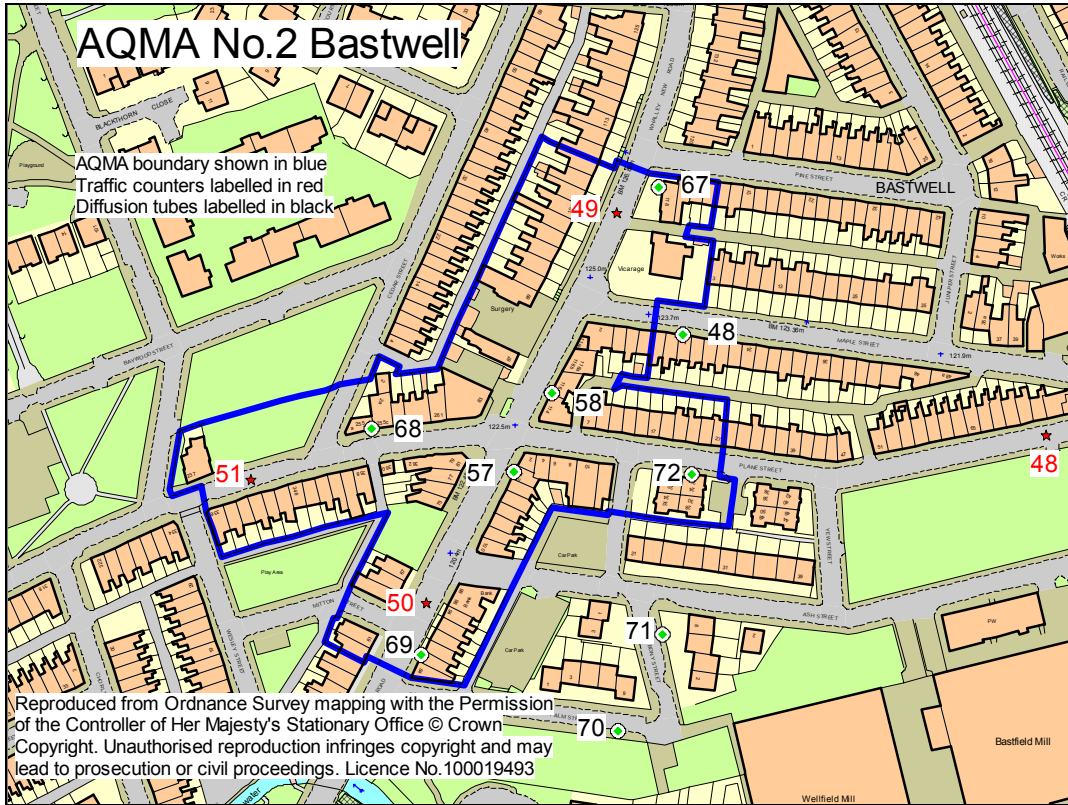
		2007-'08	2008-'09	Total Allocation
AQMA 1	Intack	£150,000	£150,000	£300,000
AQMA 2	Bastwell	£ 90,000	£210,000	£300,000
AQMA 3	A666 between Robert Street and Wraith Street (Darwen Town Centre)	£175,000	-	£175,000
AQMA 4	Witton	£240,000	£60,000	£300,000
AQMA 5-	Earcroft	<u>£100,000</u>	<u>-</u>	<u>£100,000</u>
		£755,000	£420,00	£1,175,000

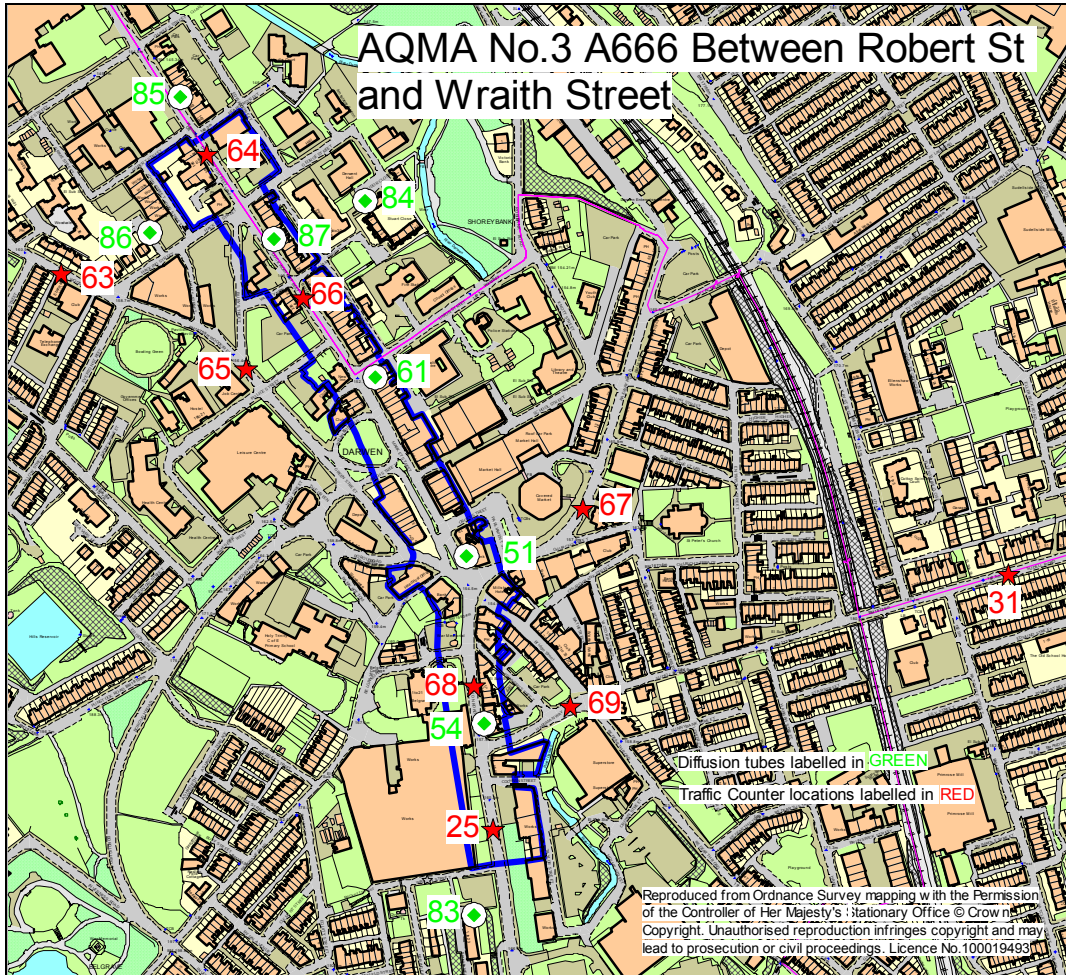
Appendix 1 – Objectives included in the Air Quality Regulations 2000 and (Amendment) Regulations 2002 for the purpose of Local Air Quality Management

Pollutant	Measured Parameter	Objective	Deadline	Do we meet this target?
Benzene	Running annual mean	16.25 µg/m ³	31.12.03	Yes
	Annual average	5.00 µg/m ³	31.12.03	Yes
1,3-butadiene	Running annual mean	2.25 µg/m ³	31.12.03	Yes
Carbon monoxide	Max daily running 8hr mean	10.0 µg/m ³	31.12.04	Yes
Lead	Annual mean	0.5 µg/m ³	31.12.04	Yes
	Annual mean	0.25 µg/m ³	31.12.08	Yes
Nitrogen dioxide	1-hour mean	200 µg/m ³ - not more than 18 times a year	31.12.05	Yes
	Annual mean	40 µg/m ³	31.12.05	No - Not at five urban road junctions
Sulphur dioxide	1-hour mean	350 µg/m ³ - not more than 24 times a year	31.12.04	Yes
	24-hour mean	125 µg/m ³ - not more than 3 times a year	31.12.04	Yes
	15-minute mean	266 µg/m ³ - not more than 35 times a year	31.12.05	Yes
Particulates (PM ₁₀)	24-hour mean	50 µg/m ³ - not more than 35 times a year	31.12.04	Yes
	24-hour mean	50 µg/m ³ - less than 7 times a year	31.12.10	Yes
	Annual mean	40 µg/m ³	31.12.04	Yes

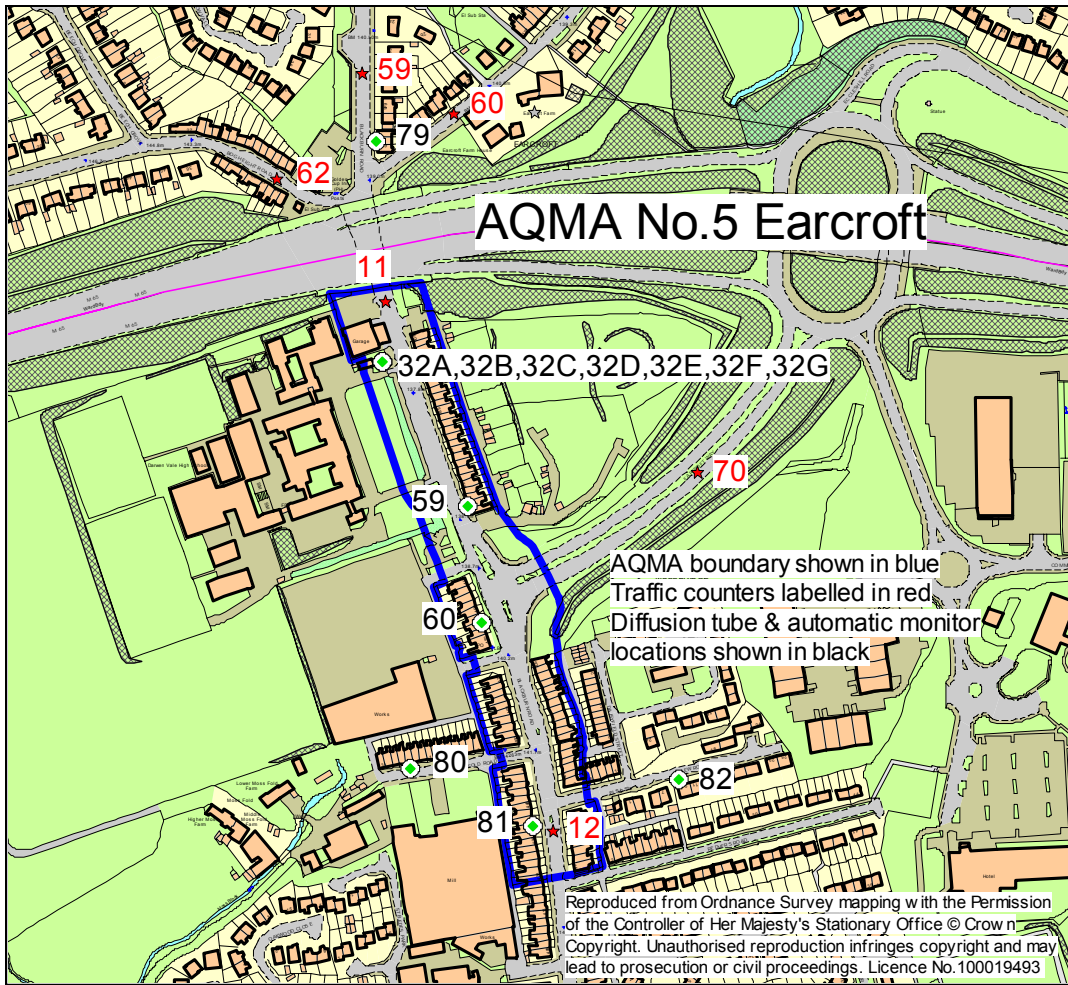
Appendix 2 - AQMA Locations











Appendix 3 - Nitrogen Dioxide Concentrations with the five AQMAs

AQMA	Site	Address	Map Reference	2005	2006
AQMA 1 - Intack	44	10 St Ives Road	370871 427996	39	32.8
	73	15 Shadsworth Road	370826 427962	33	32.3
	42	306 Accrington Road	370818 428020	24*	39.8
	74	280 Accrington Road	370758 428004	46	39.3
	75	16 Whitebirk Road	370836 428130	32	27.9
	76	39 Peronne Crescent	370908 428217	28	20.6
	77	49 Peronne Crescent	370934 428238	24*	
	78	371 Accrington Road	370876 428054	36	33.1
AQMA 2 - Bastwell	67	118 Whalley New Road	369063 429251	36	39.3
	58	114 Whalley new Road	369026 429180	43	35.6
	68	255 Whalley Range	368964 429168	31	31.8
	69	86 Whalley New Road	368981 429090	33	28.7
	70	9 Palm Street	369049 429064	27	23.2
	71	6 Ebony Street	369064 429097	25*	
	72	24 Plane Street	369074 429152	38	36.3
AQMA 3 - Darwen Centre	83	1 Springfield Flats	369250 421887	27	22.6
	54	33 Bolton Road	369259 422050	46	48.0
	51	20 Market Street (Circus)	369244 422192	30	26.5
	61	1 Market Street	369166 422345	27	25.9
	84	15 Tudor Close	369157 422494	19	20.2
	85	159 Duckworth Street	369000 422583	34	37.9
	86	10 Hacking Street	368974 422468	16*	
	87	193 Duckworth Street	369080 422462	32	39.2
AQMA 4 - Witton	4	Hawkshead Close	366879 427604	21	20.6
	63	171 Redlam	366674 427323	43	31.1
	55	183 Redlam	366652 427281	39.9	44.5
	64	171 Buncer Lane	366609 427295	26.9	31.2
	65	12 Preston Old Road	366591 427224	29.9	24.4
	66	Nanson Road	366750 427021	17.8*	
	56	5 Campbell Place	366668 427250	34.6	27.4
AQMA 5 - Earcroft	79	639 Blackburn Road	368170 424617	37.5	42.2
	32A	Groundhog	368174 424471	36	27.0
	32B	Groundhog	368174 424471	26.1	23.8
	32C	Groundhog	368174 424471	28.1	26.6
	59	555 Blackburn Road	368231 424376	35.8	34.6
	60	486 Blackburn Road	368240 424299	37.9	39.6
	80	23 Moss Fold Road	368193 424202	16.8*	
	81	442 Blackburn Road	368274 424164	40.5	40.2
	82	9 View Road	368371 424195	24.3	23.1

Notes:

Data marked in red denotes an exceedence of the air quality objective

* denotes seasonally adjusted (i.e. not enough data to determine robust annual mean)

2005 results - Sites 54, 74, 60, and 80 have had some outlying data removed

2006 results - Sites 4, 55, 72, 42, and 54 have had some outlying data removed (in each case only one outlier was removed)

Appendix 4: Traffic data (vehicle splits) used for source apportionment

	Cars (%)	LGV (%)*	Rigid HGV (%)	Articulated HGV (%)	Bus or coach (%)	Average Speed kph
AQMA 1 Intack Site 15	81.87	10.17	5.01	0.26	2.69	56
AQMA 1 Intack Site 56	81.89	10.17	6.80	0.49	0.65	59
AQMA 1 Intack Site 57	82.54	10.25	6.21	0.37	0.62	52
AQMA 1 Intack Site 58	77.28	9.60	9.84	0.84	2.45	56
AQMA 2 Bastwell Site 48	85.44	10.61	3.74	0.12	0.08	30
AQMA 2 Bastwell Site 49	83.78	10.41	4.95	0.12	0.74	53
AQMA 2 Bastwell Site 50	82.81	10.29	6.04	0.20	0.65	46
AQMA 2 Bastwell Site 51	86.39	10.73	2.82	0.04	0.03	45
AQMA 3 A666 Site 63	85.56	10.63	3.74	0.04	0.04	53
AQMA 3 A666 Site 65	82.17	10.21	6.47	0.49	0.66	52
AQMA 3 A666 Site 66	82.50	10.25	5.75	0.65	0.85	47
AQMA 3 A666 Site 67	83.96	10.43	5.45	0.12	0.03	45
AQMA 3 A666 Site 68	76.79	9.54	11.19	1.49	1.00	44
AQMA 3 B666 Site 64	81.68	10.15	6.18	0.85	1.15	53
AQMA 4 Witton Site 52	85.26	10.59	3.76	0.13	0.26	64
AQMA 4 Witton Site 53	84.32	10.48	4.55	0.37	0.28	54
AQMA 4 Witton Site 54	83.17	10.33	5.48	0.36	0.65	62
AQMA 5 Earcroft Site 11	82.10	10.20	6.47	0.50	0.72	58
AQMA 5 Earcroft Site 25	81.08	10.07	6.51	0.99	1.34	57
AQMA 5 Earcroft Site 59	82.02	10.19	5.82	0.73	1.25	56
AQMA 5 Earcroft Site 60	84.32	10.47	5.04	0.16	0.00	55
AQMA 5 Earcroft Site 62	85.22	10.59	4.08	0.09	0.02	55
AQMA 5 Earcroft Site 70	80.93	10.05	7.32	1.62	0.08	36

*NOTE. LGV numbers have been calculated from total car numbers using the national average ratio of cars to LGVs for 2005

Appendix 5 - Potential measures identified during local consultation

The action plan incorporates feedback from three phases of consultation:

- Phase 1 – AQMA Declaration (October 2005)

All residents living within each of the 5 AQMAs received a questionnaire. Borough wide notification of AQMA designation invited comments from a wider area.

- Phase 2 – Local AQMA Meetings (February 2007)

All AQMA residents were invited by letter to attend a local meeting held at each of the 5 AQMAs. A publication circulated to all homes throughout the Borough extended this invitation to non-AQMA residents.

- Phase 3 – Final Consultation Meeting (September 2007)

All AQMA residents and the consultees listed below were invited by letter to submit their comments and to attend the Phase 3 meeting. A publication circulated to all homes throughout the Borough extended this invitation to non-AQMA residents.

- | | |
|--|---|
| – Defra | – Stagecoach Northwest |
| – Blackburn with Darwen Primary Care Trust | – White Lady & New Horizons Disabled Travel |
| – Environment Agency | – The Hackney Carriage Forum |
| – Highways Agency | – Lancashire Telegraph |
| – Bolton MBC | – The Private Hire Association |
| – Bury MBC | – J & F Aspden (Blackburn) Ltd |
| – Chorley BC | – Dial-a-Ride |
| – Ribble Valley BC | – Gilbraith(TS) Ltd |
| – Rossendale BC | – Blackburn & District Chamber of Trade |
| – South Ribble BC | – SUSTRANS |
| – Hyndburn BC | – Derwent Hall |
| – East Lancashire Chamber of Industry & Commerce | – Soroptimists |
| – Greater Manchester Transport Resource Unit | – Friends of the Earth |
| – J & S Travel | – Bank Top Community Association |
| – Blackburn and Darwen Disabled Access Group | – Environment & Neighbourhood Group |
| – Darwen Civic Society | – Ewood & Fernhurst Community Association |
| – Darwen Coach Services | – Ewood Residents Association |
| – Burnley & Pendle travel | – Older People's Forum |
| | – Blackburn Rovers |

Consultation – AQMA 1 Intack

Measures proposed by residents in initial questionnaire (October 2005)

Responses to 'Are there any important issues that we should know about?'

1. Congestion
2. No pedestrian crossing at the bottom of Shadsworth Road
3. Bus depot pollution
4. Expansion of hospital and Shadsworth industrial estate will generate more traffic
5. Adverse impact of more parking controls
6. Build much needed affordable housing at site of bus station (if they relocate)

Response to 'Do you have any suggestions for improving air quality in your area?'

1. Improve traffic flow
2. Encourage motorists to use alternative routes
3. Better control of traffic
4. Buses turning engines off when they are waiting in the morning at the depot
5. Replace lights with a roundabout
6. Triple glazing for houses
7. Buses turning engines off when they are waiting at a bus stop or in the depot
8. Stop the buses from the depot parking outside near the houses on Accrington Road
9. Stop illegal parking on the double yellow lines and footpaths just before Intack traffic lights
10. Buses turning engines off when they are waiting at a bus stop
11. Cycle lanes
12. Offer incentive to get local businesses to relocate on outskirts of town
13. Move bus depot closer to town
14. Improve traffic flow at Whitebirk roundabout eg. add extra lane or lights (Shadsworth Road is used as an alternative route as roundabout congested)
15. Walking bus schemes
16. Mini-buses to transport children to school (15 kids in one bus better than 15 separate car journeys)
17. Improve bus links (from industrial estate at top of Shadsworth Road)
18. Car sharing schemes (on Shadsworth industrial estate)
19. Speed up traffic lights to keep traffic moving

Issues raised by residents at the Intack AQMA public meeting on 12th February 2007

1. There was concern that the options identified were just tweaking the current situation and they wanted to be aware of more long term solutions/plans
2. There was confusion as to whether St Ives road was still in sequence -i.e. operates when there is no car (Council fairly confident it is operational on car detection only)
3. Council raised issue of no Modem being in place at junction which links the traffic signals to the rest of the network -it was agreed that this needs fixing so cars can travel through the junctions in convoy
4. Concerns were raised over enforcement of cars illegally parked on double yellow lines. - the main issue was parked cars
5. The residents complained over the lack of traffic wardens patrolling the area
6. They were concerned over the abuse of disabled stickers with vehicles displaying the badge and cars being left for 4 -5 hours at a time
7. It was agreed that the many eating establishments/ shops contributes to problem with parked cars on road
8. Issue over motorists leaving engine running whilst they visit the shops or friends/family are in the local shops
9. It was agreed that kerbside detection would be useful to stop kids pressing traffic lights and running off or to pick up pedestrian movement prior to traffic light changes
10. The pedestrian refuge that could be re-sited further west was well used by the audience. However, they appreciated the difficulty of creating two lanes of traffic at this part of the junction especially when cars are parking on street.
11. Having a pre green priority on Shadsworth road was considered a possible option
12. They were concerned about the level of traffic on Whitebirk Road and the inability to promote safe cycling
13. Concerns were expressed about the public transport units being used by Blackburn Transport (now Transdev/Lancashire United)
14. The Intack bus depot also had workers parking their cars on Whitebirk road
15. Buses were leaving their engines to idle on Whitebirk Road for long periods at a time - could the council move bus stop further down Whitebirk road to stop idling engines chucking out fumes close to houses
16. A grassy mound near the Intack bus depot could be better used as a car park for residents and remove on street parking issue.
17. Issues were raised over the increased traffic generated as a result of the consolidation of the two hospital sites at Shadsworth (RBH)
18. They were keen to see the development of travel plans at businesses in Shadsworth and the hospital
19. The audience was pleased with the car share initiative and the hospital area guides and were happy that the Council was being proactive in encouraging sustainable transport options - but they were not optimistic on any real changes in commuting patterns.
20. Constant revving of buses parked in the Bus Depot near the backyards of the houses generates fume, odour and noise in the Bus depot (comment sent by email following meeting).

Consultation – AQMA 2 Bastwell

Measures proposed by residents in initial questionnaire (Oct 2005)

Responses to 'Are there any important issues that we should know about?'

1. More parking required
2. Existing and new car parks need to be kept clean
3. Traffic flow bad - very large wagons and buses (*over a 24 hour period for all vehicles travelling in both directions north of the junction of Maple St & Pine St only 0.13% are Arctics but medium/heavy goods are slightly higher than average at 6% (normal 4% for an urban A road). Unsurprisingly 93% of all vehicles are cars or light vans.*)
4. Parking on double yellow lines, and nothing is done about it
5. Establish what mode of transport the local people are using at the moment and what changes could be made

Response to 'Do you have any suggestions for improving air quality in your area?'

1. Zebra crossing on Whalley New Road
2. Encourage people to use public transport

Residents feedback from consultation session in Spring 2007:

1. Would it be possible to have a Roundabout at the junction to improve traffic flow?
2. The Council should better enforce parking restrictions -especially as the road has many shops, food outlets a bank and post office.
3. The religious school just passed the Kebabish restaurant also attracts a large number of vehicles. Often cars are parked outside the entrance with engines idling for a long time.
4. The Council should provide more car parking- land near the junction of Mitton St and Wesley St could be opened up for car parking.
5. Pavement on Whalley New Road near the pharmacy could be used as parking bays as the pavement is very wide at present -this would reduce illegal and poor parking issues.
6. Signage is required to inform motorists of the local car parking options i.e. car park at Ash Street.
7. The local car parks such as those on Ash St are very important to the local community and more needs to be done to promote them.
8. The local car parks need to be regularly cleaned and monitored - car parks often dirty, littered and not welcoming.
9. Cars are being dumped on Ash Street car park without tax etc. There were also issues raised about the poor lighting at car parks.
10. There was agreement by the residents that rat running into town was an issue along Whalley Range and Plane Street.
11. The idea of banning conflicting turning movements at the junction - i.e. no right turn onto Whalley Range etc was viewed as a potentially good idea.
12. Could the Council move the bus stop from outside the bank further down Whalley New Road? On street parking is causing the buses to pick up passengers in the middle of the street -resulting in a blocked road.
13. As many of the shops are food outlets this is attracting regular visits from large delivery vehicles which park on street restricting road width and causing tail backs.
14. More regular buses are required in order to promote modal shift.
15. Car share is a good idea but the Council should establish more informal arrangements for the local ethnic community. Concerns were raised about the low internet usage within the area that would restrict the usefulness of the existing online car share database.
16. Issues were raised over the cleanliness of the area. Take away food stores cartons and packaging was often dumped on the streets from cars parked along the road.
17. The Council should provide more bins along the street to discourage littering.
18. The Mosque Marshalling scheme is very effective and should be extended to local schools -i.e. walking buses should be promoted to school and effective Travel Plans should be developed.

Consultation – AQMA 3 A666 Between Robert Street and Wraith Street

Measures proposed by residents in initial questionnaire (October 2005)

Responses to 'Are there any important issues that we should know about?'

1. Town centre parking
2. No night-time toilets
3. River Darwen near Hardman way smells during the summer
4. Street drains are blocked

Response to 'Do you have any suggestions for improving air quality in your area?'

1. Improve public transport to make it a more attractive option
2. 'Change the motorway connection to Lower Darwen, since the motorway opened there's been far too much traffic through Darwen'
3. Increase awareness
4. Re-direct traffic - two way round back of Duckworth & Market Street, roundabout at Hardman Way, open bridge street to one-way traffic (moving in a Bolton direction)
5. 'Lights filters Bolton Road to Green Street & Market Street to Church Street and outward traffic on Bridge Street/Foundry Street'
6. Upgrade buses and their springs
7. Remove road humps/bumps
8. Stop vandals ripping up bus shelters
9. Remove bottle tops left during music festivals from the tar at the bus station
10. Better attention to the Railway Station, including emptying bins
11. Widen main road and re-instate two way traffic on Market Street
12. New buses are excellent, but use smaller buses when demand is low
13. Cleaner engines
14. Use alternative methods of propulsion instead of petrol/diesel
15. Better trains with more stops
16. More solar/wind/water power
17. More trees
18. Lifestyle change reducing travel
19. Lack of night-time toilets are a small cause of pollution

Feedback from the Darwen Town Centre Forum meeting 21 February 2007

1. The cycle for the pedestrian crossing near the Post Office is too long - pedestrians cross on red because of frustration with waiting time
2. As above for crossing near Police Station - will it be improved as part of the Leisure Centre development?
3. Cars travel through the bus station - need to enforce the "no access for vehicles other than buses" through this area
4. Reinstate bus conductors at peak times to reduce bus standing times.
5. Install bus laybys to avoid them waiting in the carriageway when picking up/dropping off

Consultation - AQMA 4 Witton

Measures proposed by residents in initial questionnaire (October 2005)

Responses to 'Are there any important issues that we should know about?'

1. Litter and debris
2. Pollution emissions
3. Can't open window due to bus fumes
4. Congestion
5. Preston New Road residents need access to parking.
6. Events in park generate traffic and add to pollution - PO road used as access to park.
7. People visiting doctors surgery make it difficult to park

Response to 'Do you have any suggestions for improving air quality in your area?'

1. Make all cars and vans use unleaded petrol
2. Move the bus stop (which is 20yds from Buncer Lane lights) further up the road.
3. Reduce the amount of heavy traffic
4. Clean up litter and debris on Markham Road or make works responsible for it.
5. Improve traffic flows - particularly on Spring Lane
6. Traffic reduction - particularly heavy traffic
7. Improve public transport - improve frequency, reliability and affordability
Encourage motorists to use public transport
8. Improve traffic flow
9. Re-doing Spring Lane yellow lines and stopping pavement parking near lights
10. Reduce congestion - eg. By imposing residents only parking permit scheme
11. Impose parking controls

Feedback from the public AQMA meeting at St Mark's Conservative Club, Witton on 6th February 2007

1. Congestion is caused by the right filter off Preston Old Road into Spring Lane.
2. The road markings aren't clear, so it isn't evident where there are two lanes and where there aren't.
3. Get rid of the right turn from Spring Lane onto Redlam (send traffic up Buncer lane?).
4. The re-aligning of the kerbs wasn't a welcome move.
5. Improve the bus service (which is considered to be poor).
6. Move the bus stop locations away from the junctions, especially for the bus stop outside the medical centre.
7. Develop/improve travel plans for Witton High, Wensley and Griffin schools
8. Secure bike storage facilities at schools.
9. Investigate the congestion impact of the Buncer Lane Islands and pelican crossings (there was a suggestion that these islands may contribute to pedestrian safety).
10. Cherry tree railway service is limited to an hourly service. This is a deterrent which is particularly evident during rush hour. A more frequent service would be more attractive to users (there was some discussion about the impact that increasing the number of stops would have on journey times).
11. Cherry Tree railway station - the train option will be more attractive if the station is cleaner & tidier.
12. Park & Ride and/or Park & Cycle at Witton Park.
13. Red light jumping at the junction causes frustration.
14. Car drivers often ignore double yellow lines, particularly at school drop-off/pick-up times.
15. Council staff parking takes up valuable car parking spaces in the town centre.

Consultation – AQMA 5 Earcroft

Responses to 'Are there any important issues that we should know about?'

1. M65 didn't produce the promised reduction in A666 traffic
2. Darwen Vale High School affected by pollution
3. Damage to parked cars from passing traffic
4. Lower Darwen Paper Mill development will increase traffic
5. Blackburn Rovers traffic causes chaos
6. Eccleshill Road is a rat-run
7. Altering junction 4 lights has not improved the situation
8. Cars coming past Vale School fight to get in one lane
9. Drivers miss-read or jump traffic lights
10. Pedestrians are wary of using pedestrian crossing
11. Concern for health of residents with medical problems
12. Can't open windows as too much traffic, particularly on match day
13. Vale school - litter, graffiti and noise
14. Drivers revving engines at lights
15. Residents have to fit double glazing and they don't sit at their front doors
16. Car stereo noise and vibration
17. Pollution from standing traffic is very unhealthy
18. The amount of traffic
19. The speed of traffic
20. Poor parking
21. Noise and dirt is a problem

Response to 'Do you have any suggestions for improving air quality in your area?'

1. Reduce traffic flow on A666 to M65 J4. Divert some traffic to other junctions (ie. J5).
2. Provide alternative route to Darwen Town Centre from J4
3. Reducing traffic, and in particular the number of heavy vehicles
4. Prohibit further housing development
5. Alter traffic lights to reduce waiting traffic
6. Tax from residents of new housing should be used to keep area cleaner
7. Provide air conditioning as residents can't open windows
8. Consider a roundabout instead of lights
9. Introduce left turn filter from A666 into Earcroft Way from Blackburn to towards Darwen (Isn't there one already?)
10. Public transport - improve service and reduce cost
11. On match day don't have all the traffic coming off the M65 at J4
12. Increase the delay on the link Rd rather than letting traffic through to congest the A666 Construct a bypass - Motorway to Whitehall, motorway to Blackburn/Darwen centres
13. Relocate bus stops away from motorway junction
14. Remove the traffic calming controls
15. More off-road parking
16. Another exit from the service area
17. More trees
18. Speed controls
19. Speed cameras, as acceleration causes pollution
20. Speed signs for drivers coming off the M65

Feedback from the Earcroft AQMA meeting held on 27th February 2007:

Members of the public identified the following issues/potential measures:

1. Re-position the bus stop
2. Install speed cameras (there was some discussion as to whether this would bring about a reduction in road safety)
3. Install 'reduce speed' signs
4. Introduce 'residents only' parking. View Road identified as an option.
5. The orientation and location of road signage was criticised. HGVs travelling to the M65 services often get it wrong.
6. Synchronise the timings of the pedestrian phases at traffic lights.
7. The road camber at the junction/link road is wrong and increases the likelihood of an accident.
8. Replace the traffic lights with a roundabout
9. Some discussion about a bypass to the east of the A666, taking M65 traffic up to Darwen via Goosehouse. This wasn't generally accepted as being a viable option.
10. 'Build outs' (restrictions in road width where kerb extended towards the crown of the road) on A666 were criticised. General opinion that these increase congestion.
11. Parking on double yellow lines is a problem which increases congestion. Problem times identified - during school drop-offs/pick-ups, and when there are weddings taking place at Darwen Vale.

Additional Comments received in writing, by telephone and email

Comments made by members of public

AQMA 4 Witton - Move the bus stop on Redlam (in bound side) 30 yards away from the junction to help avoid buses stopping traffic flow

AQMA 5 Earcroft - Page 45, option 3. No Accrington Road in Earcroft. Also asked for more details about the bus quality partnership (information provided)

Comments Made on behalf of the CTC and Living Streets – Received 9th October 2007

A: GENERAL COMMENTS

As the report points out, a proportion of the background concentrations of NO_x gases at any location are the result of combustion from industrial sources and other chimneys and fires. Any new or tighter controls upon these would obviously be welcome. However, the particularly high concentrations at the five sites in question are clearly the result of local traffic conditions and sustained traffic growth. It is just this traffic-induced pollution which will be addressed in detail here.

To reduce emissions from vehicles, there are only three viable approaches:

1. Cleaner engines
2. Smoother traffic flow with less idling
3. Less traffic.

(Locally, there may perhaps be a fourth solution, increasing the dispersal of the offending gases by some mechanical means, but this is unlikely to be a practical proposition?)

The first of these – cleaner engines – is probably largely outside the council's control, but proposals in the Action Plan to check vehicles (mainly taxis) are welcome. All council-owned vehicles should obviously be included within this and perhaps bus emissions too? Is it also possible that the cars of council employees can be checked, and inducements offered to discourage their unnecessary use of cars altogether, or at least to car share or use a smaller one.

The second method, that of smoothing the traffic flow at these sites using a traditional traffic management approach, is the one fraught with most difficulties. The trouble is it does nothing to address the basic cause of the problem –the rise in traffic levels – and risks being counterproductive in the long run. All measures designed to increase traffic flow have the effect of decreasing journey times and making car travel more attractive: more people driving and more people driving further. Although emissions might well be

slightly reduced in the immediate locality in the short term, the overall effect throughout the borough is likely to be a boost to both traffic and NOx levels. That is not to say, however, that any obvious inefficiencies in junction design should not be removed, but it can never be a sensible long-term solution.

Worse, at the redesigned sites, the increased emphasis given to reducing delay to drivers risks increasing their inconvenience and even safety to non-motorised users, namely pedestrians (especially local residents) and cyclists. In this regard, the Action Plan is to be commended for seeming to reject out of hand any roundabout options. Typically – though not inevitably – the UK approach to roundabout design and driving conventions on them are extremely hostile towards other road users (Eanam, Whitebirk.....!)

The third approach, traffic reduction, represents the only sustainable long term approach that is within the council's powers to achieve. It is very encouraging indeed that the Action Plan seeks to adopt this approach through a range of different measures and does not seek to rely only on traffic management measures.

B: SPECIFIC MEASURES

Traffic reduction:

Although welcome in principle, the approach adopted towards traffic reduction in the plan tends to be oversimplistic and to a degree formulaic. How else, for example, can the repetition of exactly the same remedies and phrases at each site be explained, right down to “local traders in Accrington Road” appearing in the details for all five sites!

It is also a fact that the traffic through these junctions, all of which are on main distributor roads, is not solely, or perhaps even significantly, immediately local in its origins. Consequently it will not be sufficient to look at just very local institutions for travel plans, car sharing etc, or the junction itself when it comes to encouraging cycling. It is travel throughout the borough that needs to be influenced too, and, for cycling, all the factors suppressing demand.

Demand management/parking controls: It is a sad truth that, despite many measures to encourage motorists out of their cars in favour of public transport, cycling, walking and car-sharing, there have been few successes outside of London. Traffic levels have continued to grow and bus use to decline. The key factor in the capital, however, has been demand management, through the difficulty and cost involved in parking a car and, of course, the congestion charge. Based on past experience, there is little reason to believe some of the positive measures outlined in the plan will be successful unless matched by a similar commitment to restricting demand for car travel. Key to this is controlling the availability of workplace parking, free parking at superstores, and parking policy in the town centre. To be relaxing town centre controls on parking at very time we are facing pollution problems in our streets is utter madness.

Cycling: The recommendation at every location for advanced stop lines is an example of the formulaic approach mentioned above, without reference to the actual factors that deter people from cycling. If the junctions themselves were indeed the main obstacles to cyclists, introducing advanced stop lines does not automatically make them any better. A more detailed examination would be necessary, perhaps involving cycle phases for example, or altering the lane details a little. In reality however, although the system at Earcroft could certainly be improved, not one of the junctions involved is particularly problematical for cyclists. *If more people are to cycle through these junctions instead of using their cars, it is the complete length of the main routes through these junctions that must be checked, and, of course, the availability of suitable cycle parking at likely destinations. There are significant hazards further along all of these main roads which need far more urgent attention than the five junctions themselves.*

C: EXTRA COMMENTS ON SPECIFIC SITES

AQMA No 1: Intack

There are obvious traffic queuing difficulties adjacent to the shops on Accrington Road. Although only one lane seems to be intended, motorists do tend to double up anyway. Either this should be regularised, or discouraged, perhaps in favour of a feeder lane for cyclists to reach the stop line past a row of waiting cars.

Clearly the local shops do rely to a significant degree on the passing trade and so some short stay car parking. The council should not just write this off as "minor loss of trade". The decline of local shops is itself one of the causes of traffic growth as shoppers have to travel further even for simple everyday items. Although parking on the kerb may offend our sensibilities, provided engines are not left running it would be difficult to make out that this is significantly contributing to emissions. It would be best of course if limited parking could be found nearby, like the little side street at the end of the row of shops but with better turning arrangements.

Regarding cycling, the main obstacle to its expansion in this area is not the junction itself but features further along on both Accrington Road and Whitebirk Drive. The addition in recent years of road narrowing features, in the form of kerb build-outs and central refuges, has made these roads far more intimidating to cyclists. There are also major roundabouts to avoid. It will not be reasonable to expect any increase in cycling levels at all until these issues are resolved. At the junction itself, however, it is ironic that the single worst feature for cyclists is the one feature that was presumably intended to assist them, the narrow cycle lane past the refuge on Accrington Lane. The effective of this ill-conceived measure is to push cyclists too far towards the kerb and encourage motorists to pass them too close and too fast. This line should be removed.

Any scheme to close the St Ives arm of the junction should take into account the needs of cyclists who will still need two-way use of the road.

Any re-design of this junction should also take into account pedestrian needs, one of which is the desire line straight along the south side of Accrington Rd without the need to divert uphill across St Ives Road too. Naturally, many people don't bother to do this.

AQMA No 2: Bastwell

This junction presents no real difficulties for cyclists at all. Adding ASL's might be appreciated by cyclists but is unlikely to have any effect on cycling levels. It is also important to realise that under current regulations, all new ASL schemes must include the provision of a feeder lane. Although these enable cyclists to get past queuing traffic, squeezing past next to the kerb alongside the first vehicle in the queue can be extremely dangerous if it turns left without noticing the presence of a cyclist, reckoned to be one of the commonest causes of cyclist fatalities. A kerbside feeder lane can also put the cyclists in the wrong position for turning right.

To encourage more people to cycle on the main routes through this junction, conditions must be improved along the entire lengths of both Whalley New Road and Whalley Range. The former requires the removal of three pernicious build-outs just north of the junction (two on the uphill side, one on the downhill side). The latter would benefit from smooth ramps for cyclists to pass over its build-outs, particularly at the traffic throttles. The new one-way section at the far end has also made conditions worse for cyclists. A cycle contraflow arrangement should have been included.

Any schemes restricting access to small roads must include exemptions for cyclists.

AQM No 3: A666 between Robert Street and Wraith Street

All measures to enhance the attractiveness of public transport are to be welcome, in principle at least. It must be realised however that while the provision of bus lanes can sometimes benefit cyclists too (as they are usually joint use), quite often an unintended consequence is to make cycling far *less* attractive and more difficult. This occurs when adding a bus lane on just one side of the road without providing extra road space overall, reduces the lane width in the opposite direction, leaving no room for vehicles to overtake cyclists.

Once again, the absence of ASL's is not the main issue affecting cycling levels through this junction. It is instead conditions along Duckworth Street and Bolton Road. The whole area really needs to be audited for cycling. It is tragic that proper provision for cyclists was not included in the recent changes to Darwen town centre. One very obvious and easy change would be to exempt cyclists from the road closure on Duckworth Street, enabling them to travel in the southerly direction direct to the junction. It would also have been sensible to provide a contraflow cycle lane along the whole of the one-way section of Duckworth Street, thus avoiding the need to negotiate the difficult

gyratory system (and cycling uphill unnecessarily). On Bolton Road, the first refuge in the middle of the road is also particularly hazardous to the uphill cyclist.

In general, cycling will be made more attractive by removing all unnecessary hazards on these routes but also by improving accessibility and convenience. Obvious nearby improvements would also include cycle access to Bridge Street, and provision of cycle parking throughout the town centre.

Problems for pedestrians at this junction have also been reported, particularly for the elderly and infirm. When crossing Church Street by the signalled crossing, few people on foot seem inclined to wait for the formal pedestrian phase, as traffic along Church Street appears to be relatively light. Unfortunately, those crossing in the southerly direction are then taken by surprise by vehicles approaching from over their shoulder down Green Street. (The same crossing has a quite unusable – and blocked – new cycle crossing: the proper place for a cycle signal would be as a proper vehicle signal – not pedestrian – on the exit from a contraflow lane on Market Street).

AQMA 4 Witton

It is difficult to see how ASL's for cyclists can be introduced at this junction if safe, properly position feeder lanes have to be installed too. Certainly a cyclists' box in front of the traffic on Spring Lane would help, but access to it is difficult given the narrowness of the street. The safest way for experienced cyclists at present is on the *outside* of the traffic queue. Poorly thought out feeder lanes can put cyclists, particularly the inexperienced, in very dangerous road positions.

The main problems for cyclists in this area have all been introduced in recent years. To the south-west of the junction along Preston Old Road, the huge central refuge introduced to help cyclists *cross* the road (something very few use) has made conditions very much worse for cyclists *along* the road, a far more important route. What was a very easy road for all categories of cyclist is now very difficult. Similarly, the new refuges along Spring Lane result in a lot of incidents of close overtaking and deter people from cycling. Only the most experienced and confident now tackle this road.

Any scheme to ban the right turn out of Spring Lane will need to make an exemption for cyclists or a simple option.

Any redesign of the junction must include provision for pedestrians to cross Redlam safely *in front* of waiting traffic, instead of weaving between cars and around a barrier. This is an important desire line along Spring Lane and Buncer Lane, and to the corner shops.

It is not obvious what is intended in Table 4 by "traffic islands on the west arm of the junction". There is no west arm, only a south-west one, and there are no traffic islands.

AQMA No 5: Earcroft

A quality bus route along the A666 which can cut through the traffic queues would be a very good thing. Clearly however there will be space problems, and this should not be achieved by squeezing cyclists into the direct line of traffic on the opposite side of the road.

A major problem for cyclists at present however, particularly the less expert, is all the road narrowings, particularly the kerb build-outs. It takes a lot of confidence and experience to negotiate these safely with traffic approaching from behind.

The junction itself is not particularly problematical for cyclists but could certainly be improved, particularly in the southerly direction. The existing pavement facility is of very poor quality and rarely used. Much better would be an ASL with a feeder lane between the two lines of traffic.

Comments made by Sustrans – received 15th August 2007

1. Whilst some junction layout changes can assist, we believe that promotion of alternatives, such as walking and cycling for short journeys can play a large part in helping to reduce pollution. We are pleased therefore to see reference in Table 3 and section 4 to School Travel Plans and work force Travel Plans.
2. Travel Planning should have targets, be monitored, and have adequate resources.
3. Infrastructure improvements may well be required in the vicinity of these junctions to help pedestrians and cyclists. There are numerous guides to good practice to enable the Borough's engineers to plan attractive routes for cyclists in particular. Small scale improvements can be funded typically through the LTP, and developer contributions.

Sustrans itself is managing the D for T/NCN School Links project which may be able to help with grants to improve routes for cyclists in the vicinity of the schools.

Appendix 6: Evaluation of potential measures

6.1 AQMA 1 – Intack

Causes of congestion:

- Inbound commuter and schools traffic (Intack Primary, St Anthony's RC Primary, Blakewater College) in the AM peak to Blackburn Town Centre (8am-9am 455 vehicles)
- Outbound commuter and schools traffic in the PM peak (5pm-6pm 499 vehicles)
- Traffic using Shadsworth Road to access the industrial estates at Shadsworth and Guide, leisure facilities at the JJB Soccer Dome and Shadsworth Leisure Centre, and to the new Royal Blackburn Hospital
- Traffic using Shadsworth Road as a cut through to M65 Junction 5

Evaluation of potential measures:

AQMA 1 Option 1 – Replace junction with roundabout / junction expansion

Objective	To improve traffic flow through the junction and reduce polluting vehicle emissions
Responsibility	BwDBC, Capita Symonds
Air quality impacts	Moderate
Non-air quality impacts	Reduced journey times for road users
Perception	Likely to be perceived as a positive measure by road users but local homes and businesses will be lost.
Timescale	Medium/long term
Cost & feasibility	Prohibitively expensive. Not considered feasible due to the associated cost and impact upon the local community

AQMA 1 Option 2 – Maximise Signal Efficiency

- Install kerbside detection (increases capacity by up to 10%)
- Adjust phasing
- Improved traffic detection
- Linking with urban traffic control system

Objective	To improve traffic flow through the junction and reduce polluting vehicle emissions
Responsibility	BwDBC, Capita Symonds
Air quality impacts	Low/Moderate
Non-air quality impacts	Reduced journey times for road users
Perception	Likely to be perceived as a positive change
Timescale	Completion 2009
Cost & feasibility	Low cost, feasible

AQMA 1 Option 3 – Parking restrictions

Objective	Provision and enforcement of traffic restrictions to reduce traffic obstruction, thereby improving traffic flow and reducing polluting vehicle exhaust emissions
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Improved road safety
Perception	Positive for road users and residents. Local traders on Accrington Rd may experience minor loss in trade.
Timescale	2007-'08
Cost & feasibility	Low, readily implemented

AQMA 1 Option 4 – School Travel Plans

The development and improvement of school travel plans at:

- Our Lady & St John Catholic Arts College
- Blakewater College
- Intack Primary School
- St Anthony's Primary School
- Shadsworth Infants School

Objective	To reduce the number of car journeys by increasing the use of more sustainable forms of transport, reduced accidents and improve health
Responsibility	BwDBC, Individual schools
Air quality impacts	Low/moderate
Non-air quality impacts	Accident reduction and improved health
Perception	Positive
Timescale	All schools to have a travel plan in place by 2010
Cost & feasibility	Low, project ongoing

AQMA 1 Option 5 – East Lancashire Rapid Transit project

A bid has been prepared for bus priority lanes to be constructed on sections of the route into Blackburn.

Objective	To reducing bus journey times in order to increase bus usage
Responsibility	BwDBC
Air quality impacts	Low/Medium
Non-air quality impacts	Reduced journey times
Perception	Likely to be perceived as a positive measure
Timescale	Medium/long term – bid to be submitted to Dft in Autumn 2008
Cost & feasibility	Target cost for scheme £45m – included within North West Regional Funding Allocation for Transport. Delivery dependent on winning bid with DfT.

AQMA 1 Option 6 – Bus quality partnerships

In addition to improving the bus service this partnership initiative will seek to resolve issues associated with the quality of bus services in general and in particular issues for this AQMA at the Intack depot (exhaust emissions whilst buses idling at the depot)

Objective	To increase bus usage by improving punctuality and improving bus quality, thereby reducing the number of car journeys made. Reducing exposure to bus emissions.
Responsibility	BwDBC, bus companies
Air quality impacts	Low
Non-air quality impacts	Improved punctuality reduces journey time, better buses
Perception	Positive
Timescale	Short/medium term
Cost & feasibility	Low, frequent service so feasible

AQMA 1 Option 7 – Public transport information

The Council seeks to promote the use of public transport by providing local companies with bus and train timetables that can be given out to staff.

Objective	To reduce the number of car journeys by increasing the use of more sustainable forms of transport.
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Increase number of bus journeys
Perception	Likely to be perceived as a positive measure
Timescale	Short term
Cost & feasibility	Low cost, feasible

AQMA 1 Option 8 – Providing bus lay-bys

A number of comments made during consultation suggested that bus stops should have dedicated lay-bys that enable them to pick-up without obstructing traffic flow. However, it is difficult for the bus to get back into the stream of traffic and this increases journey times.

Objective	To increase traffic flow and hence reduce vehicle emissions associated with congestion
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Increasing journey times on buses, reduced journey times for other road users
Perception	Likely to be perceived as a positive measure for private transport but not for bus users
Timescale	Short term
Cost & feasibility	Medium cost associated with moving the stop and constructing a lay-by. Not considered feasible due to increased bus journey times. At odds with national guidance and policy.

AQMA 1 Option 9 – Car Sharing

Objective	To reduce the number of car journeys and thereby reduce emissions
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Reduced journey times
Perception	Positive
Timescale	Short term - project ongoing
Cost & feasibility	Low cost, feasible

AQMA 1 Option 10 – Advanced stop lines for cyclists

Objective	To improve the environment for cyclists, thereby promoting a shift to more sustainable forms of transport
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Improved health, improved safety
Perception	Positive
Timescale	Short term
Cost & feasibility	Low, feasible

AQMA 1 Option 11 – Development Control

Most new buildings or significantly altered buildings need consent, referred to as planning permission. The Local authority will seek to influence development so that it doesn't have a significant adverse impact on air quality.

Objective	To ensure that the development control planning process takes account of air quality where it is a material consideration
Responsibility	BwDBC
Air quality impacts	Medium
Non-air quality impacts	Restriction of the type and design of approved development proposals
Perception	Likely to be perceived as a positive measure
Timescale	Ongoing
Cost & feasibility	Planning is statutory function of the Council. Developers may be required to finance mitigating measures

AQMA 1 Option 12 – Control of Industrial Emissions

The Council regulates nitrogen dioxide emissions from certain A2 and B processes under the IPPC and LA-IPPC regimes and has input as a consultee to the regulation of A1 activities regulated by the Environment Agency

Objective	To ensure that the best available techniques available are employed to minimise nitrogen dioxide emissions from IPPC, LA-IPPC and Part B industrial activities
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	
Perception	Likely to be perceived as a positive measure
Timescale	Short term
Cost & feasibility	Statutory function of the Council

AQMA 1 Option 13 – Control of bonfires and chimney emissions

The Council regulates emissions to air from bonfires and chimneys under the Environmental Protection Act 1990 and the Clean Air Act legislation. Increased awareness raising and enforcement can be used to increase compliance

Objective	To increase awareness and enforcement of legislation that regulates nitrogen dioxide emissions from bonfires and chimneys (domestic and non-domestic)
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Minor increase in waste collections and disposal at Household Waste Disposal Centres
Perception	Likely to be perceived as a positive measure
Timescale	Short term
Cost & feasibility	Enforcement is a statutory function of the Council, awareness raising is low cost and feasible

Options under investigation for inclusion in subsequent revisions of the action plan:

Provisional options under investigation for inclusion in subsequent revisions of the action plan:

- Closure of the St Ives arm of the Intack junction and re-routing St Ives traffic to Shasdworth Road or Bank Lane
- Roadside emissions testing
- Reducing emissions from taxis
- Relocation of the pedestrian refuge on Accrington Road

6.2 AQMA 2 Bastwell

Causes of congestion:

Commuter traffic into the town centre from north of the borough and Ribble Valley:

- inbound commuter traffic in am peak to Blackburn town centre (peak is at 8am & over 24hr period 5709 vehicles head towards town) on Whalley New Road between junction of Maple & Pine St
- outbound traffic in the pm peak (peak is at 5pm & 5836 vehicles head out of town over a 24hr average) on Whalley New Road between junction of Maple & Pine St

School traffic – 20% of all vehicles in peak times are associated with school journeys.

- Access to schools in am and pm peaks (Brookhouse & Cedars primary)
- Access to places of worship and religious centres – issues of on street parking reducing road widths unsafe for pedestrians and cyclists

Evaluation of potential measures:

AQMA 2 Option 1 – Replace junction with roundabout / junction expansion

Objective	To improve traffic flow through the junction and reduce polluting vehicle emissions
Responsibility	BwDBC, Capita Symonds
Air quality impacts	Moderate
Non-air quality impacts	Reduced journey times for road users
Perception	Likely to be perceived as a positive measure by road users but local homes and businesses will be lost.
Timescale	Medium/long term
Cost & feasibility	Prohibitively expensive. Not considered feasible due to the associated cost and impact upon the local community

AQMA 2 Option 2 – Maximise Signal Efficiency

- Install kerbside detection (increases capacity by up to 10%)
- Adjust phasing
- Improved traffic detection
- Linking with urban traffic control system

Objective	To improve traffic flow through the junction and reduce polluting vehicle emissions
Responsibility	BwDBC, Capita Symonds
Air quality impacts	Low/Moderate
Non-air quality impacts	Reduced journey times for road users
Perception	Likely to be perceived as a positive change
Timescale	Completion 2009
Cost & feasibility	Low cost, feasible

AQMA 2 Option 3 – Parking restrictions

Comments received during consultation suggested that kerbside parking on Whalley New Road obstructs traffic flow.

Objective	Provision and enforcement of traffic restrictions to reduce traffic obstruction, thereby improving traffic flow and reducing polluting vehicle exhaust emissions
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Improved road safety
Perception	Positive for road users and residents. Local traders on Accrington Rd may experience minor loss in trade.
Timescale	2007-2008
Cost & feasibility	Low, readily implemented

AQMA 2 Option 4 – Improve parking provision

Off-road parking at Ash St and Mitton Street provides an alternative to kerbside parking on Whalley New Road, but comments made during consultation suggest that it is under utilised because of poor lighting, litter and inadequate signage.

Objective	To improve the provision of off-road parking to reduce traffic obstruction, thereby improving traffic flow and reducing polluting vehicle exhaust emissions
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Improved road safety
Perception	Positive for road users and residents. Local traders on Accrington Rd may experience minor loss in trade.
Timescale	2007-'08
Cost & feasibility	Low, readily implemented

AQMA 2 Option 5 – School Travel Plans

The development and improvement of school travel plans at the following schools:

- Brookhouse Primary School
- Cedars Infant School
- Hawthorn Junior School
- Daisyfield Primary School
- St Stephens Infant School
- St Stephens Junior School
- St Mary's Sixth Form College
- Pleckgate High School

Objective	To reduce the number of car journeys by increasing the use of more sustainable forms of transport, reduced accidents and improve health.
Responsibility	BwDBC, Individual schools
Air quality impacts	Low/moderate
Non-air quality impacts	Accident reduction and improved health
Perception	Positive
Timescale	All schools to have a travel plan in place by 2010
Cost & feasibility	Low, project ongoing

AQMA 2 Option 6 – Bus quality partnerships

The Council will seek to establish a bus quality partnership on the Bolton to Clitheroe route (225 service).

Objective	To increase bus usage by improving punctuality and improving bus quality, thereby reducing the number of car journeys made. Reducing exposure to bus emissions.
Responsibility	BwDBC, bus companies
Air quality impacts	Low
Non-air quality impacts	Improved punctuality reduces journey time, better buses
Perception	Positive
Timescale	Short/medium term
Cost & feasibility	Low, frequent service so feasible

AQMA 2 Option 7 – Mosque Marshalling

A considerable number of vehicle and pedestrian movements can occur within a short period of time in the vicinity of places of worship. Mosques have developed plans to reduce the impact upon congestion and hence vehicle emission levels. The Council will investigate rolling the Mosque Marshalling scheme out to other places of worship.

Objective	To reduce road congestion and hence vehicle emissions
Responsibility	BwDBC, individual mosques
Air quality impacts	Low
Non-air quality impacts	Reduced journey times and noise
Perception	Positive
Timescale	Ongoing
Cost & feasibility	Low cost and feasible

AQMA 2 Option 8 – Public transport information

The Council seeks to promote the use of public transport by providing local companies with bus and train timetables that can be given out to staff.

Objective	To reduce the number of car journeys by increasing the use of more sustainable forms of transport.
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Increased use of public transport and improved service
Perception	Likely to be perceived as a positive measure
Timescale	Short term
Cost & feasibility	Low cost, feasible

AQMA 2 Option 9 – Providing bus lay-bys

A number of comments made during consultation suggested that bus stops should have dedicated lay-bys that enable them to pick-up without obstructing traffic flow. However, it is difficult for the bus to get back into the stream of traffic and this increases journey times.

Objective	To increase traffic flow and hence reduce vehicle emissions associated with congestion
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Increasing journey times on buses, reduced journey times for other road users
Perception	Likely to be perceived as a positive measure
Timescale	Short term
Cost & feasibility	Medium cost associated with moving the stop and constructing a lay-by. Not considered feasible due to increased bus journey times. At odds with design guidance and national policy.

AQMA 2 Option 10 – Car Sharing

Objective	To reduce the number of car journeys and thereby reduce emissions
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Reduced journey times
Perception	Positive
Timescale	Short term - project ongoing
Cost & feasibility	Low cost, feasible

AQMA 2 Option 11 – Advanced stop lines for cyclists

Objective	To improve the environment for cyclists, thereby promoting a shift to more sustainable forms of transport
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Improved health, improved safety
Perception	Positive
Timescale	Short term
Cost & feasibility	Low, feasible

AQMA 2 Option 12 – Development Control

Most new buildings or significantly altered buildings need consent, referred to as planning permission. The Local authority will seek to influence development so that it doesn't have a significant adverse impact on air quality.

Objective	To ensure that the development control planning process takes account of air quality where it is a material consideration
Responsibility	BwDBC
Air quality impacts	Medium
Non-air quality impacts	Restriction of the type and design of approved development proposals
Perception	Likely to be perceived as a positive measure
Timescale	Ongoing
Cost & feasibility	Planning is statutory function of the Council. Developers may be required to finance mitigating measures

AQMA 2 Option 13 – Control of Industrial Emissions

The Council regulates nitrogen dioxide emissions from certain A2 and B processes under the IPPC and LA-IPPC regimes and has input as a consultee to the regulation of A1 activities regulated by the Environment Agency

Objective	To ensure that the best available techniques available are employed to minimise nitrogen dioxide emissions from IPPC, LA-IPPC and Part B industrial activities
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	
Perception	Likely to be perceived as a positive measure
Timescale	Short term
Cost & feasibility	Statutory function of the Council

AQMA 2 Option 14 – Control of emissions from bonfires and chimneys

The Council regulates emissions to air from bonfires and chimneys under the Environmental Protection Act 1990 and the Clean Air Act legislation. Increased awareness raising and enforcement can be used to increase compliance

Objective	To increase awareness and enforcement of legislation that regulates nitrogen dioxide emissions from bonfires and chimneys
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Minor increase in waste collections and disposal at Household Waste Disposal Centres
Perception	Likely to be perceived as a positive measure
Timescale	Short term
Cost & feasibility	Enforcement is a statutory function of the Council, awareness raising is low cost and feasible

Options under investigation for inclusion in subsequent revisions of the action plan:

Provisional options under investigation for inclusion in subsequent revisions of the action plan:

- Evaluate option of introducing right-turn lanes
- Evaluate option of restricting access to smaller roads in order to prevent conflicting turns and improve flows on the main arms of the Bastwell junction
- Reducing emissions from taxis
- Roadside emissions testing
- Relocation of bus stops away from the junction

6.3 AQMA 3 A666 between Robert Street and Wraith Street

Causes of congestion:

Given the topography and historical development within Blackburn with Darwen, the main road between the Borough's two main towns follows the valley floor. Consequently, traffic is funnelled down the A666 through the heart of Darwen Town Centre. 90% of the traffic travelling through Darwen Town Centre is local and therefore has little opportunity to find alternative routes.

A £2m highways scheme has been introduced in Darwen town centre the last 18 months which has resulted in significant traffic relocation away from the traditional town centre on Market Street. Changes to the road layout outside the former Belgrave Mill site are ongoing. A comprehensive evaluation of the impact of the completed scheme will be undertaken once the new traffic levels have been determined and when the results of on-going air quality monitoring are known.

However, a number of interim measures have been evaluated.

Evaluation of potential measures:

AQMA 3 Option 1 – Maximise Signal Efficiency

- Adjust phasing
- Linking to urban traffic control system
- Signage

Objective	To improve traffic flow through the junction and reduce polluting vehicle emissions
Responsibility	BwDBC, Capita Symonds
Air quality impacts	Low/Moderate
Non-air quality impacts	Reduced journey times for road users
Perception	Likely to be perceived as a positive change
Timescale	Completion 2009
Cost & feasibility	Low cost, feasible

AQMA 3 Option 2 – Parking restrictions

Objective	Provision and enforcement of traffic restrictions to reduce traffic obstruction, thereby improving traffic flow and reducing polluting vehicle exhaust emissions
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Improved road safety
Perception	Positive for road users and residents.
Timescale	2007-'08
Cost & feasibility	Low, readily implemented

AQMA 3 Option 3 – Expanding right turn lane from Green Lane to Borough Rd

Objective	To improve traffic flow and reduce vehicle emissions associated with congestion
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Reduced
Perception	Positive
Timescale	Short term by 2008
Cost & feasibility	Medium. Funding secured. Feasible

AQMA 3 Option 4 – School Travel Plans

The development and improvement of school travel plans at the following schools:

- Holly Trinity Primary School
- Darwen Vale High School
- Darwen Moorland High School

Objective	To reduce the number of car journeys by increasing the use of more sustainable forms of transport, reduced accidents and improve health.
Responsibility	BwDBC, Individual schools
Air quality impacts	Low/moderate
Non-air quality impacts	Accident reduction and improved health
Perception	Positive
Timescale	All schools to have a travel plan in place by 2010
Cost & feasibility	Low, project ongoing

AQMA 3 Option 5 – Bus quality partnerships

Objective	To increase bus usage by improving punctuality and improving bus quality, thereby reducing the number of car journeys made. Reducing exposure to bus emissions.
Responsibility	BwDBC, bus companies
Air quality impacts	Low
Non-air quality impacts	Improved punctuality reduces journey time, better buses
Perception	Positive
Timescale	Short/medium term
Cost & feasibility	Low, frequent service so feasible

AQMA 3 Option 6 – Introduction of bus only lane outside former Belgrave Mill site

Linked to AQMA3 Option 7, but listed separately as funding secured and project ongoing.

Objective	To reducing bus journey times in order to increase bus usage
Responsibility	BwDBC, individual mosques
Air quality impacts	Low/Medium
Non-air quality impacts	Reduced journey times and noise
Perception	Positive
Timescale	Project ongoing
Cost & feasibility	Funding secured and project ongoing

AQMA 3 Option 7 – East Lancashire Rapid Transit project

A bid has been prepared for bus priority lanes to be constructed on sections of the route into Blackburn.

Objective	To reducing bus journey times in order to increase bus usage
Responsibility	BwDBC
Air quality impacts	Low/Medium
Non-air quality impacts	Reduced journey times
Perception	Likely to be perceived as a positive measure
Timescale	Medium/long term – bid to be submitted to DfT in Autumn 2008
Cost & feasibility	Target cost for scheme £45m – included within North West Regional Funding Allocation for Transport. Delivery dependent on winning bid with DfT

AQMA 3 Option 8 – Improvements to Darwen Bus Station

Objective	To reduce the number of car journeys by increasing the use of more sustainable forms of transport.
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Improved personal safety (Users will feel safer in a clean well lit facility)
Perception	Likely to be perceived as a positive measure
Timescale	Short term 2008
Cost & feasibility	Low cost, feasible

AQMA 3 Option 9 – Improvements to Darwen Train Station

Objective	To reduce the number of car journeys by increasing the use of more sustainable forms of transport.
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Improved personal safety (Users will feel safer in a clean well lit facility)
Perception	Likely to be perceived as a positive measure
Timescale	Short term
Cost & feasibility	Low cost, feasible

AQMA 3 Option 10 – Improvements to Blackburn/Manchester rail line and service

A bid has been submitted to the Department for Transport to improve infrastructure and services on the Blackburn to Manchester rail line

Objective	To reduce the number of car journeys by increasing the use of more sustainable forms of transport.
Responsibility	BwDBC, Network Rail, Northern Rail, DfT Rail
Air quality impacts	Low
Non-air quality impacts	Reduced journey times
Perception	Likely to be perceived as a positive measure
Timescale	Medium/long
Cost & feasibility	The success of the bid will determine funding availability and hence feasibility

AQMA 3 Option 11 – Public transport information

The Council seeks to promote the use of public transport by providing local companies with bus and train timetables that can be given out to staff. This also includes working with Blackburn Rovers to reduce the number of fans travelling to games by car.

Objective	To reduce the number of car journeys by increasing the use of more sustainable forms of transport.
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Increased use of public transport and better service
Perception	Likely to be perceived as a positive measure
Timescale	Short term
Cost & feasibility	Low cost, feasible

AQMA 3 Option 12 – Providing bus lay-bys

A number of comments made during consultation suggested that bus stops should have dedicated lay-bys that enable them to pick-up without obstructing traffic flow. However, it is difficult for the bus to get back into the stream of traffic and this increases journey times.

Objective	To increase traffic flow and hence reduce vehicle emissions associated with congestion
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Increasing journey times on buses, reduced journey times for other road users
Perception	Likely to be perceived as a positive measure
Timescale	Short term
Cost & feasibility	Medium cost associated with moving the stop and constructing a lay-by. Not considered feasible due to increased bus journey times. At odds with design guidance and national policy.

AQMA 3 Option 13 – Car Sharing

Objective	To reduce the number of car journeys and thereby reduce emissions
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Reduced journey times
Perception	Positive
Timescale	Short term - project ongoing
Cost & feasibility	Low cost, feasible

AQMA 3 Option 14 – Development Control

Most new buildings or significantly altered buildings need consent, referred to as planning permission. The Local authority will seek to influence development so that it doesn't have a significant adverse impact on air quality.

Objective	To ensure that the development control planning process takes account of air quality where it is a material consideration
Responsibility	BwDBC
Air quality impacts	Medium
Non-air quality impacts	Restriction of the type and design of approved development proposals
Perception	Likely to be perceived as a positive measure
Timescale	Ongoing
Cost & feasibility	Planning is statutory function of the Council. Developers may be required to finance mitigating measures

AQMA 3 Option 15 – Control of Industrial Emissions

The Council regulates nitrogen dioxide emissions from certain A2 and B processes under the IPPC and LA-IPPC regimes and has input as a consultee to the regulation of A1 activities regulated by the Environment Agency

Objective	To ensure that the best available techniques available are employed to minimise nitrogen dioxide emissions from IPPC, LA-IPPC and Part B industrial activities
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	
Perception	Likely to be perceived as a positive measure
Timescale	Short term
Cost & feasibility	Statutory function of the Council

AQMA 3 Option 16 – Control of emissions from bonfires and chimneys

The Council regulates emissions to air from bonfires and chimneys under the Environmental Protection Act 1990 and the Clean Air Act legislation. Increased awareness raising and enforcement can be used to increase compliance

Objective	To increase awareness and enforcement of legislation that regulates nitrogen dioxide emissions from bonfires and chimneys
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Minor increase in waste collections and disposal at Household Waste Disposal Centres
Perception	Likely to be perceived as a positive measure
Timescale	Short term
Cost & feasibility	Enforcement is a statutory function of the Council, awareness raising is low cost and feasible

Options under investigation for inclusion in subsequent revisions of the action plan:

Provisional options under investigation for inclusion in subsequent revisions of the action plan:

- Evaluate option of prohibiting entry to the street between the Post Office and HSBC Bank from Darwen Circus junction
- Reducing emissions from taxis
- Roadside emissions testing

6.4 AQMA 4 Witton

Causes of congestion:

- Inbound traffic in the AM peak to Blackburn Town Centre
- Outbound traffic in the PM peak
- Witton Park High School – increased traffic and conflicts between vehicles and pedestrians
- Traffic using Buncer Lane as a cut through to Preston New Road
- Traffic using Spring Lane as a cut through to A666 and Ewood
- Events at Witton Park (weekends and holidays) – Football, Hockey, Netball – popularity of centre itself for visitors and the Athletic Arena.

Evaluation of potential measures:

AQMA 4 Option 1 – Replace junction with roundabout / junction expansion

Objective	To improve traffic flow through the junction and reduce polluting vehicle emissions
Responsibility	BwDBC, Capita Symonds
Air quality impacts	Moderate
Non-air quality impacts	Reduced journey times for road users
Perception	Likely to be perceived as a positive measure by road users but local homes and businesses will be lost.
Timescale	Medium/long term
Cost & feasibility	Prohibitively expensive. Not considered feasible due to the associated cost and impact upon the local community

AQMA 4 Option 2 – Maximise Signal Efficiency

- Install kerbside detection (increases capacity by up to 10%)
- Adjust phasing
- Improved traffic detection – install split loops
- Evaluate feasibility of linking with urban traffic control system

Objective	To improve traffic flow through the junction and reduce polluting vehicle emissions
Responsibility	BwDBC, Capita Symonds
Air quality impacts	Low/Moderate
Non-air quality impacts	Reduced journey times for road users
Perception	Likely to be perceived as a positive change
Timescale	Completion 2009/10
Cost & feasibility	Low cost, feasible

AQMA 4 Option 3 – Parking restrictions

Objective	Provision and enforcement of traffic restrictions to reduce traffic obstruction, thereby improving traffic flow and reducing polluting vehicle exhaust emissions
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Improved road safety
Perception	Positive for road users and residents. Local traders may experience minor loss in trade.
Timescale	2007-2008
Cost & feasibility	Low, readily implemented

AQMA 4 Option 4 – School Travel Plans

The development and improvement of school travel plans at the following schools:

- St Peters RC Primary School
- Griffin park primary School
- Wensley Fold primary School
- Witton Park Business College

Objective	To reduce the number of car journeys by increasing the use of more sustainable forms of transport, reduced accidents and improve health
Responsibility	BwDBC, Individual schools
Air quality impacts	Low/moderate
Non-air quality impacts	Accident reduction and improved health
Perception	Positive
Timescale	All schools to have a travel plan in place by 2010
Cost & feasibility	Low, project ongoing

AQMA 4 Option 5 – Bus quality partnerships

The Council will seek to establish bus quality partnership schemes on the routes between Burnley and Preston (service 152) and the Blackburn to Chorley (service 123 & 124).

Objective	To increase bus usage by improving punctuality and improving bus quality, thereby reducing the number of car journeys made. Reducing exposure to bus emissions.
Responsibility	BwDBC, bus companies
Air quality impacts	Low
Non-air quality impacts	Improved punctuality reduces journey time, better buses
Perception	Positive
Timescale	Short/medium term
Cost & feasibility	Low, frequent service so feasible

AQMA 4 Option 6 – Public transport information

The Council seeks to promote the use of public transport by providing local companies with bus and train timetables that can be given out to staff.

Objective	To reduce the number of car journeys by increasing the use of more sustainable forms of transport.
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Increased use of buses and better service
Perception	Likely to be perceived as a positive measure
Timescale	Short term
Cost & feasibility	Low cost, feasible

AQMA 4 Option 7 – Providing bus lay-bys

A number of comments made during consultation suggested that bus stops should have dedicated lay-bys that enable them to pick-up without obstructing traffic flow. However, it is difficult for the bus to get back into the stream of traffic and this increases journey times.

Objective	To increase traffic flow and hence reduce vehicle emissions associated with congestion
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Increasing journey times on buses, reduced journey times for other road users
Perception	Likely to be perceived as a positive measure
Timescale	Short term
Cost & feasibility	Medium cost associated with moving the stop and constructing a lay-by. Not considered feasible due to increased bus journey times. At odds with design guidance and national policy.

AQMA 4 Option 8 – Improvements to Cherry Tree Train Station

Objective	To reduce the number of car journeys by increasing the use of more sustainable forms of transport.
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Improved personal safety (Users will feel safer in a clean well lit facility)
Perception	Likely to be perceived as a positive measure
Timescale	Short term
Cost & feasibility	Low cost, feasible – funding available in LPT2

AQMA 4 Option 9 – Car Sharing

Objective	To reduce the number of car journeys and thereby reduce emissions
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Reduced journey times
Perception	Positive
Timescale	Short term - project ongoing
Cost & feasibility	Low cost, feasible

AQMA 4 Option 10 – Advanced stop lines for cyclists

Objective	To improve the environment for cyclists, thereby promoting a shift to more sustainable forms of transport
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Improved health, improved safety
Perception	Positive
Timescale	Short term
Cost & feasibility	Low, feasible

AQMA 4 Option 11 – Development Control

Most new buildings or significantly altered buildings need consent, referred to as planning permission. The Local authority will seek to influence development so that it doesn't have a significant adverse impact on air quality.

Objective	To ensure that the development control planning process takes account of air quality where it is a material consideration
Responsibility	BwDBC
Air quality impacts	Medium
Non-air quality impacts	Restriction of the type and design of approved development proposals
Perception	Likely to be perceived as a positive measure
Timescale	Ongoing
Cost & feasibility	Planning is statutory function of the Council. Developers may be required to finance mitigating measures

AQMA 4 Option 12 – Control of Industrial Emissions

The Council regulates nitrogen dioxide emissions from certain A2 and B processes under the IPPC and LA-IPPC regimes and has input as a consultee to the regulation of A1 activities regulated by the Environment Agency

Objective	To ensure that the best available techniques available are employed to minimise nitrogen dioxide emissions from IPPC, LA-IPPC and Part B industrial activities
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	
Perception	Likely to be perceived as a positive measure
Timescale	Short term
Cost & feasibility	Statutory function of the Council

AQMA 4 Option 13 – Control of emissions from bonfires and chimneys

The Council regulates emissions to air from bonfires and chimneys under the Environmental Protection Act 1990 and the Clean Air Act legislation. Increased awareness raising and enforcement can be used to increase compliance

Objective	To increase awareness and enforcement of legislation that regulates nitrogen dioxide emissions from bonfires and chimneys
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Minor increase in waste collections and disposal at Household Waste Disposal Centres
Perception	Likely to be perceived as a positive measure
Timescale	Short term
Cost & feasibility	Enforcement is a statutory function of the Council, awareness raising is low cost and feasible

Options under investigation for inclusion in subsequent revisions of the action plan:

Provisional options under investigation for inclusion in subsequent revisions of the action plan:

- Evaluate feasibility of banning right turns out of Spring Lane
- Evaluate feasibility of moving bus stop to reduce obstruction
- Roadside emissions testing
- Reducing emissions from taxis
- Evaluation of whether the traffic islands on the west arm of the junction can be moved or removed

6.5 AQMA 5 Earcroft

Causes of congestion:

- Inbound (towards Blackburn) commuter and schools traffic (Darwen Vale, St Edwards, St Cuthberts) in the AM peak and additional traffic towards Darwen and the M65
- Outbound (towards Darwen) commuter and schools traffic in the PM peak
- Blackburn Rovers matchday traffic
- Traffic using Sandy Lane / Stopes Brow as a cut through between Darwen and Blackburn, and also to access the industrial estates at Shadsworth and Guide, to the new Royal Blackburn Hospital, and to JJB soccerdome leisure facilities
- Eccleshill Road/Goose House Lane also used as a cut through

Evaluation of potential measures:

AQMA 5 Option 1 – Replace junction with roundabout / junction expansion

Objective	To improve traffic flow through the junction and reduce polluting vehicle emissions
Responsibility	BwDBC, Capita Symonds
Air quality impacts	Moderate
Non-air quality impacts	Reduced journey times for road users
Perception	Likely to be perceived as a positive measure by road users but more homes will be lost.
Timescale	Medium/long term
Cost & feasibility	Prohibitively expensive.

AQMA 5 Option 2 – Maximise Signal Efficiency

- Install kerbside detection (increases capacity by up to 10%)
- Adjust phasing
- Evaluate feasibility of linking with urban traffic control system

Objective	To improve traffic flow through the junction and reduce polluting vehicle emissions
Responsibility	BwDBC, Capita Symonds
Air quality impacts	Low/Moderate
Non-air quality impacts	Reduced journey times for road users
Perception	Likely to be perceived as a positive change
Timescale	Completion 2009
Cost & feasibility	Low cost, feasible

AQMA 5 Option 3 – Parking restrictions

Objective	Provision and enforcement of traffic restrictions to reduce traffic obstruction, thereby improving traffic flow and reducing polluting vehicle exhaust emissions
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Improved road safety
Perception	Positive for road users and residents. Local traders may experience minor loss in trade.
Timescale	2007-2008
Cost & feasibility	Low, readily implemented

AQMA 5 Option 4 – School Travel Plans

The development and improvement of school travel plans at the following schools:

- St Edwards Primary School
- Lower Darwen Primary School
- Darwen Vale High School

Objective	To reduce the number of car journeys by increasing the use of more sustainable forms of transport, reduced accidents and improve health
Responsibility	BwDBC, Individual schools
Air quality impacts	Low/moderate
Non-air quality impacts	Accident reduction and improved health
Perception	Positive
Timescale	All schools to have a travel plan in place by 2010
Cost & feasibility	Low, project ongoing

AQMA 5 Option 5 – Bus quality partnerships

In addition to improving the bus service this partnership initiative will seek to resolve issues associated with the bus depot (exhaust emissions whilst buses idling at the depot).

Objective	To increase bus usage by improving punctuality and improving bus quality, thereby reducing the number of car journeys made. Reducing exposure to bus emissions.
Responsibility	BwDBC, bus companies
Air quality impacts	Low
Non-air quality impacts	Improved punctuality reduces journey time, better buses
Perception	Positive
Timescale	Short/medium term
Cost & feasibility	Low, frequent service so feasible

AQMA 5 Option 6 – East Lancashire Rapid Transit project

A bid has been prepared for bus priority lanes to be constructed on sections of the route into Blackburn.

Objective	To reducing bus journey times in order to increase bus usage
Responsibility	BwDBC
Air quality impacts	Low/Medium
Non-air quality impacts	Reduced journey times
Perception	Likely to be perceived as a positive measure
Timescale	Medium/long term – bid to be submitted to DfT Autumn 2008
Cost & feasibility	Target cost for scheme £45m – included within the North West Regional Funding Allocation for Transport. Delivery dependent on winning bid with DfT

AQMA 5 Option 7 – Public transport information

The Council seeks to promote the use of public transport by providing local companies with bus and train timetables that can be given out to staff. This also includes working with Blackburn Rovers to reduce the number of fans travelling to games by car.

Objective	To reduce the number of car journeys by increasing the use of more sustainable forms of transport.
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Increased use of public transport and better service
Perception	Likely to be perceived as a positive measure
Timescale	Short term
Cost & feasibility	Low cost, feasible

AQMA 5 Option 8 – Improvements to Blackburn/Manchester rail line and service

A bid has been submitted to the Blackburn to Manchester rail line

Objective	To reduce the number of car journeys by increasing the use of more sustainable forms of transport.
Responsibility	BwDBC, Network Rail, Northern Rail, DfT Rail
Air quality impacts	Low
Non-air quality impacts	Reduced journey times
Perception	Likely to be perceived as a positive measure
Timescale	Medium/long
Cost & feasibility	The success of the bid will determine funding availability and hence feasibility

AQMA 5 Option 9 – Providing bus lay-bys

A number of comments made during consultation suggested that bus stops should have dedicated lay-bys that enable them to pick-up without obstructing traffic flow. However, it is difficult for the bus to get back into the stream of traffic and this increases journey times.

Objective	To increase traffic flow and hence reduce vehicle emissions associated with congestion
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Increasing journey times on buses, reduced journey times for other road users
Perception	Likely to be perceived as a positive measure
Timescale	Short term
Cost & feasibility	Medium cost associated with moving the stop and constructing a lay-by. Not considered feasible due to increased bus journey times.

AQMA 5 Option 10 – Remove build-outs

Residents state that the build-outs interfere with traffic flow (Build-outs are small sections of the kerb which are extended into the road to provide a refuge for pedestrians crossing the road, for people getting on or off a bus, and to moderate vehicle speed)

Objective	To reduce congestion and associated vehicle emissions
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Reduced pedestrian safety
Perception	Positive
Timescale	Short term
Cost & feasibility	Low cost, not considered feasible due to reductions in pedestrian safety

AQMA 5 Option 11 – Improved junction signage

Residents commented that the signage at the junction is poor and that HGVs often go down the wrong arm of the junction and then have to turn round. This causes congestion and associated vehicle emissions.

Objective	To reduce congestion and associated vehicle emissions
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Reduced journey times
Perception	Positive
Timescale	Short term
Cost & feasibility	Low cost, feasible

AQMA 5 Option 12 – Advanced stop lines for cyclists

Objective	To improve the environment for cyclists, thereby promoting a shift to more sustainable forms of transport
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Improved health, improved safety
Perception	Positive
Timescale	Short term
Cost & feasibility	Low, feasible

AQMA 5 Option 13 – Car Sharing

Objective	To reduce the number of car journeys and thereby reduce emissions
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Reduced journey times
Perception	Positive
Timescale	Short term - project ongoing
Cost & feasibility	Low cost, feasible

AQMA 5 Option 14 – Development Control

Most new buildings or significantly altered buildings need consent, referred to as planning permission. The Local authority will seek to influence development so that it doesn't have a significant adverse impact on air quality.

Objective	To ensure that the development control planning process takes account of air quality where it is a material consideration
Responsibility	BwDBC
Air quality impacts	Medium
Non-air quality impacts	Restriction of the type and design of approved development proposals
Perception	Likely to be perceived as a positive measure
Timescale	Ongoing
Cost & feasibility	Planning is statutory function of the Council. Developers may be required to finance mitigating measures

AQMA 5 Option 15 – Control of Industrial Emissions

The Council regulates nitrogen dioxide emissions from certain A2 and B processes under the IPPC and LA-IPPC regimes and has input as a consultee to the regulation of A1 activities regulated by the Environment Agency

Objective	To ensure that the best available techniques available are employed to minimise nitrogen dioxide emissions from IPPC, LA-IPPC and Part B industrial activities
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	
Perception	Likely to be perceived as a positive measure
Timescale	Short term
Cost & feasibility	Statutory function of the Council

AQMA 5 Option 16 – Control of emissions from bonfires and chimneys

The Council regulates emissions to air from bonfires and chimneys under the Environmental Protection Act 1990 and the Clean Air Act legislation. Increased awareness raising and enforcement can be used to increase compliance

Objective	To increase awareness and enforcement of legislation that regulates nitrogen dioxide emissions from bonfires and chimneys
Responsibility	BwDBC
Air quality impacts	Low
Non-air quality impacts	Minor increase in waste collections and disposal at Household Waste Disposal Centres
Perception	Likely to be perceived as a positive measure
Timescale	Short term
Cost & feasibility	Enforcement is a statutory function of the Council, awareness raising is low cost and feasible

Options under investigation for inclusion in subsequent revisions of the action plan:

Provisional options under investigation for inclusion in subsequent revisions of the action plan:

- Roadside emissions testing
- Reducing emissions from taxis

Blackburn with Darwen Borough Council

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