IPSWICH BOROUGH COUNCIL

LOCAL AIR QUALITY MANAGEMENT

IPSWICH AIR QUALITY ACTION PLAN 2008

(Environment Act 1995 Part IV)

Date of Report: September 2008
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EXECUTIVE SUMMARY

Ipswich Borough Council has a statutory duty to monitor and periodically review air quality within its area. The Environment Act 1995 imposes a legal duty to declare Air Quality Management Areas where levels of specific pollutants are, or are predicted to be, above objective levels set out in national Air Quality Regulations 2000 and (Amendment) Regulations 2002.

As a result the Council has been reviewing and assessing air quality in a structured way to determine those areas of poor air quality where pollution levels have exceeded, or are likely to exceed the national targets. The results of these assessments indicated that there were areas in Ipswich where the annual average air quality objective for Nitrogen Dioxide (NO_2) would be exceeded.

As a result of this the Council declared three Air Quality Management Areas (AQMA's) in 2006 for nitrogen dioxide. These are:
Chevallier Street and Norwich Road junction;
Crown Street, St Margaret's Street and Fonnereau Road junctions; and
Star Lane gyratory system/St Helen's Street near the Wet Dock.

The source of the nitrogen dioxide pollution was traffic.

Local Authorities that have declared Air Quality Management Areas are required to carry out further detailed air quality assessments (Further Assessment) and prepare an Air Quality Action Plan. These must be subject to consultation and be made available to the public. The Further Assessment has been developed alongside this Action Plan and is available as a separate document. Implementation of the Action Plan must be to work towards reducing levels of pollution to an acceptable standard and at least below the national standards set in regulations, for the areas declared.

The Ipswich Air Quality Action Plan is a set of measures which address the poor air quality in each of the declared Air Quality Management Areas and should contribute to improving air quality throughout Ipswich.

Ipswich Borough Council will continue to monitor and assess air quality to determine progress towards reducing pollution and achieving the target for annual average nitrogen dioxide standards.

In addition to these plans, Suffolk County Council will be incorporating local air quality considerations into its transport planning processes and work towards understanding more fully the impact of transport on local air quality.

1. INTRODUCTION

1.1 Background

The most important pollutant of concern in Ipswich and its air quality, is nitrogen dioxide (NO_2), and today's levels in certain areas do not meet national health-based annual average objectives of 40 ug/m^3. In Ipswich the most significant source of NO_2 is from emissions of oxides of nitrogen (NOx) from road traffic in congested areas.

Ipswich Borough Council's Environmental Protection Service has carried out monitoring of nitrogen dioxide concentrations for many years, and more recently completed a series of progressively more detailed and focussed air quality reviews across the whole of the Borough. These have concluded that whilst most of its area has met the national air quality objectives, three areas in and around the town centre have not.

In these circumstances, the Council is required to declare these areas as Air Quality Management Areas (AQMAs) and with Government guidance adopt an Air Quality Action Plan (AQAP) to improve air quality. There is no legal duty on Councils to actually achieve the objectives but they must take action to try to meet the objectives.

During the formation of the action plan Ipswich Borough Council has recognised the importance of working in partnership with both internal and external stakeholders. In particular Suffolk County Council as Highways Authority can have a major influence on local air quality through the transport planning process by incorporating local air quality strategy and action plans into local transport plans. The AQAP therefore aims to:

- Suggest and agree measures to reduce levels of Nitrogen Dioxide within the AQMAs in an attempt to meet objective levels
- Balance costs and benefits
- Maintain public support.

1.2 Introduction to Ipswich Borough

Ipswich is the county town of Suffolk and the fastest growing regional centre in the East of England.

Ipswich is a multi-cultural centre for business, culture, entertainment and sport, with a population of more than 130,000. It is home to University Campus Suffolk and Suffolk New College.

Main routes into and out of Ipswich are congested and near to full capacity during typical rush hour times. Travel across Ipswich is restricted to certain routes by the River Orwell.

Transport and traffic management are key strategic priorities for the town as the Waterfront area and other areas of the town are undergoing significant redevelopment.

Continuing this economic prosperity is dependent on people being able to move around the town for work, shopping and leisure. At present a significant number of these journeys are made by car.

1.3 Local Air Quality Management – Ipswich Air Quality Reviews and Assessments

The Environment Act 1995 requires Local Authorities to undertake regular reviews of air quality in their areas and an assessment of whether the air quality objectives are likely to be met by the compliance date.

The first round of air quality review and assessment was completed in March 2001 and consisted of three stages, each reported on separately and progressively looking into more detailed analysis when required. The final assessment (third stage report) concluded that air quality objectives would be met. There were, however, some areas of concern where levels of nitrogen dioxide from road traffic pollution were expected to be close to reaching the objective level and the need to keep these under review was recognised.

Stages of Air Quality Review and Assessment (2001)

Stage 1 – an initial study to identify which pollutants require further investigation.

Stage 2 – estimating, modelling or measuring pollutants where this indicates national objectives will not be achieved and;

Stage 3 – using advanced modelling techniques and emissions inventories.

In 2003, all local authorities were required to complete a second round of air quality reviews and assessments. The Government issued guidance to assist with this and to direct authorities on the methodology for completing the review. The final stage of the review was an Updating and Screening Assessment (USA). This was based on a checklist to identify those matters that had changed since the first review completed in 2001 and which now required further assessment. The USAs covered new monitoring data, new sources of pollution and other changes that affected air quality.

The Councils USA, completed in December 2003, concluded that further detailed assessments of nitrogen dioxide from road traffic sources and particulate matter from an industrial source was required to determine whether air quality objectives would be exceeded in 2005. In addition to this the Department for Environment, Food and Rural Affairs (DEFRA) also requires that local authorities should submit annual air quality (Progress Reports) in between three yearly Updating and Screening Assessments. This is to provide a means of ensuring that air quality review is a continuous process and act as a timely indication of the need for measures to improve air quality, rather than delaying for three years until a full review is carried out.

In July 2005 further detailed assessments were completed in respect of the impact of road traffic on concentrations of nitrogen dioxide in St Margaret's Street, Norwich Road/Chevallier Street junction and the Star Lane gyratory system/St Helen's Street. The assessment was completed using a dispersion model, traffic and meteorological data and an ambient real time continuous monitor to produce concentration plots for 2005 and 2010.

The results of the detailed assessments for nitrogen dioxide indicated that the annual mean objective pollution level would be exceeded along most of the roads under study. In places the exceedance of the 40ug/m^3 annual mean standard extended 50 metres from the kerb into residential areas.

1.4 Air Quality Management Areas and Defining the Problem

Local Authorities have a statutory duty to declare AQMAs, where the prescribed Air Quality Objectives are not likely to be met. This applies to those locations where members of the public might reasonably be exposed for the relevant period of time. Under Section 83(1) of the Environment Act 1995 the local authority has to designate these areas by means of an order. Statutory guidance directs local authorities to make the necessary orders within four months following recognition of the need to declare, and gain subsequent approval from DEFRA.

Where an AQMA is declared, the local authority must carry out a further assessment of existing and likely future air quality in the area. There is also a requirement to report on the assessment within twelve months of designating the AQMA, making it available to the public and statutory consultees.

The Location of the Three AQMAs

Ipswich Borough Council declared three AQMAs on the 11th April 2006 following detailed assessments of areas identified in the Air Quality Updating and Screening Assessment (see maps in Appendix A).

Ipswich Air Quality Management Order No 1, 2006: Norwich Road, Chevallier Street and Valley Road (A map of the AQMA is shown in Appendix A)

This junction is located on one of the main routes into Ipswich town centre. There are four roads leading into a double mini roundabout.

Generally, the area around this junction is open with some green space and buildings set back from the road. However, there is a public house (with flat above), and some residential flats which are both located adjacent to the junction. In addition, one road, Chevallier Street, leading from the roundabout has terraced properties facing directly onto a pavement. The predicted exceedance of the NO_2 annual mean objective levels spreads up to 25m from the kerb.

Ipswich Air Quality Management Order No 2, 2006: Junction of Crown Street with Fonnereau Road and St Margaret's Street and St Margaret's Plain (A map of the AQMA is shown in Appendix A)

This AQMA includes four roads all leading off each other. There are main traffic lights at the junction of St Margaret's Street and St Margaret's Plain, and pedestrian crossing lights just beyond the junction of Crown Street and Fonnereau Road. The area along St Margaret's Street is partially canyoned.

St Margaret's Street is flanked by flats on one side, and a vacant building on the other. Permission has been given for this to be turned into residential dwellings. There are residential buildings on all roads within the AQMA.

Ipswich Air Quality Management Order No 3 2006: Star Lane gyratory system and St Helen's Street/Grimwade Street (A map of the AQMA is shown in appendix A)

There are many residential dwellings within these areas and development of the Gyratory system and Dockside is ongoing.

Traffic flow through many of the areas of this AQMA can be congested.

2. SOURCES OF NITROGEN DIOXIDE AND REDUCTIONS REQUIRED

2.1 Source Apportionment

The Local Air Quality Management assessment process identified road traffic emissions as the main source of pollution responsible for the projected exceedence of the annual average Nitrogen Dioxide objective.

There are no significant industrial sources within the boundaries of the declared areas, nor are there any significant sources of nitrogen dioxide close enough to the AQMAs which could significantly influence the nitrogen dioxide concentrations within the AQMA.

Air pollution dispersion modelling software has been used to predict the relative contributions from different vehicle types in 2007, in relation to each AQMA. This is measured at a number of receptor point in each AQMA.

Table 1 **Source Apportionment – Junction of Norwich Road/Chevallier Street/Valley Road (Area 1)**

	% Contribution to Total NO_x			
	Buses	**Cars**	**HGVs**	**Background**
Average of 4 receptor points	7.9	20.5	23.8	47.8

Table 2 **Source Apportionment – Junction of Crown Street with Fonnereau Road & St Margaret's Street & St Margaret's Plain & St Helens Street (Area 2)**

	% Contribution to Total NO_x			
	Buses	**Cars**	**HGVs**	**Background**
Junction of Crown Street with Fonnereau Road and St Margaret's Street & St Margaret's Plain Average of 6 receptor points	40.6	7.0	6.4	45.9
St Helens St Measurement at 1 receptor point	12.0	14.5	16.1	57.3

Results for St Helens Street Receptor are presented separately as this receptor is located away from the main cluster of receptors in Area 2.

Table 3 **Source Apportionment – Star Lane Gyratory (Area 3)**

	% Contribution to Total NO_x			
	Buses	**Cars**	**HGVs**	**Background**
Average of 8 receptor points	11.2	17.2	24.4	47.2

Note: All figures are taken from Draft Ipswich Borough Council Further Assessment Revision 2, dated August 2008 by Faber Maunsell. This is still to be finally agreed by Ipswich Borough Council, Environmental Protection Services.

In Area 2, an average of 40.6% of NO_x concentrations was attributable to bus emissions. This includes buses on the road network and those idling in the bus station. This was higher than Areas 1 and 3 at 7.9% and 11.2% respectively. This can be explained by the presence of the Tower Ramparts bus station in Area 2, through which the majority of the Town's bus routes pass. In Areas 1 and 3, HGVs contributed the greatest percentage of roadside NO_x on average.

The key results from the source apportionment can be summarised as follows:

- Cars were predicted to contribute between 3.1% and 21.8% of the total NO_x concentration at individual receptors
- HGVs were predicted to contribute between 2.9% and 27.4% of the total NO_x concentration at individual receptors
- Buses were predicted to contribute between 4.7% and 47.8% of the total NO_x concentration at individual receptors
- The majority of the emissions are attributable to traffic sources in all areas
- In Area 2, buses are the predominant traffic source of NO_x emissions.

2.2 Required Improvement

Table 4 **Nitrogen Oxides (NO_x) Reduction required to meet 40 μg/m³ for NO_2**

Area	NO_x Reduction Required to meet 40 μg/m³ NO_2	
	All sources (including background)	All Traffic Sources
Average Area 1 – Junction of Norwich Road/Chevallier Street/Valley Road	4.8	8.4
Average Area 2 – Junction of Crown Street with Fonnereau Road & St Margaret's Street & Plain	6.2	11.2
Average Area 3 – Star Lane Gyratory	10.2	17.9

All areas require some reduction of emissions from sources to meet NO_2 concentrations of 40 μg/m³.

2.3 Impact of Further Assessment on the AQMA Action Plan

As part of the source apportionment work, Ipswich Borough Council's air quality consultants were asked to remodel the AQMAs using 2007 traffic data, more detailed road layout information, and 2007 monitoring results for validation. Modelling was carried out for 2007 and 2010. The purpose of this was to check and 'redefine' the AQMA boundaries if necessary.

The conclusions of this modelling exercise were that the results were generally in good agreement with those from the Detailed Assessment undertaken in 2005. However, the concentrations of Nitrogen Dioxide within the designated AQMAs have decreased overall since the 2005 assessment and are likely to continue to decrease to 2010. The predictions do not show sufficient improvement to completely revoke the AQMA designations, but there is evidence to support the significant reduction in their extents.

Early indications of the 2008 monitoring data suggest that monitored levels may be higher than predicted in the above modelling study. As such, and taking into consideration advice given through the Local Air Quality Management helpline managed by consultants on behalf of Defra, a decision has been made to maintain the boundaries of the existing AQMAs as they are and review the situation in early 2009 when a full years monitoring data for 2008 is available.

This uncertainty in the AQMA designations has had an impact on the Action Plan. The actions investigated are purposely inexpensive, many are ongoing and are more general for the Ipswich Borough, rather than being specifically AQMA based. The Action Plan is a useful document in that it lists all the projects together, all of which may affect the air quality of Ipswich. Regardless of whether or not the AQMA designations change as a result of monitoring in 2008, the actions taken as a result of the Action Plan will help to ensure that future breaches of the Nitrogen Dioxide objective levels are avoided and that generally the air quality of Ipswich improves.

3. COST –BENEFIT ANALYSIS

The cost benefit analysis included in the action plan is of necessity crude. This is due to the wide-ranging nature of the actions, the cost of a number of factors which are not readily or easily measurable and the benefits of which in terms of improvements in air quality and health will not become apparent until an extended period of monitoring results are obtained and analysed. A detailed analysis of the cost-effectiveness of each proposal would take too long and be too costly. For the majority of the proposals it would therefore be impossible to undertake an assessment of their effectiveness in any scientific way. In order to provide some indication of the costs and benefits of each proposal the following criteria have been adopted:

Costs:

Low - under £5,000
Medium - £5,000 - £10,000
High - over £10,000

A costing of zero means that there is minimal additional cost to the Council due to the project being ongoing and any costs involved are already committed.

Benefits:

For benefit an estimate of the improvement to air quality has been made. This has been assessed subjectively, and for many actions the cost of undertaking an accurate assessment would outweigh the cost of undertaking the proposal. The number and scale of uncertainties involved in modeling the benefit to air quality would often render the conclusions unreliable.

Air Quality Improvement has been divided into four classifications:

Low - air quality improvement in Nitrogen Oxides under 0.5ug/m^3
Medium - air quality improvement in Nitrogen Oxides of 0.5-1 ug/m^3
High - air quality improvement in Nitrogen Oxides of over 1 ug/m^3
Negative - any deterioration in air quality

Other costs and benefits such as the effect of the proposal on climate change, any socio-economic costs or benefits, along with public perception changes have been taken into consideration and noted in full.

4. SUMMARY OF AVAILABLE ACTIONS

4.1 The table in Appendix B gives a summary of the available options and their feasibility for reducing nitrogen dioxide emissions from transport in Ipswich's AQMAs. The proposed measures to achieve the required reduction in Nitrogen Dioxide levels within the AQMAs has required joint working between various departments within Ipswich Borough Council and Suffolk County Council.

The actions considered are:

Traffic Management Actions

- Ipswich Major Scheme
- Urban Traffic Management Control
- Idling Vehicles
- Roadside Emission Testing
- Employment Zoning
- Bramford Road/Chevallier Street Pedestrian Crossing Review
- St Margaret's Street Signal Review
- Valley Road – Cycle Lane

Public Transport Action

- Bus Stop Improvements
- Bus Timetable Improvements
- Bishops Hill Bus Lane
- Train Service Improvements
- Use of Bus Subsidies
- Quality Bus Partnership Development

Smarter Travel Action

- Healthy School Status
- Park and Ride
- Raise Awareness of all Passenger Transport
- Green Travel Plans
- Smarter Travel Plans
- Smarter Travel Plan Suffolk
- Season Tickets to Students
- Electric Charging Points
- Public Air Quality Monitoring Information
- Air Quality Assessments

5. AVAILABLE ACTIONS – MORE DETAIL

5.1 Traffic Management Actions

5.1.1 Ipswich Major Scheme

These are two ongoing transport assessments/proposals for Ipswich. The Major Scheme covers the whole of Ipswich and the Buchannan Report focuses in on the Waterfront area and the gyratory system. The Ipswich Traffic Model is currently being updated and will be complete by December 2008. It is possible in the future that the air quality and traffic model will be combined.

These two projects are ongoing but it is essential that AQ is fully considered within any proposals resulting from these studies.

The AQMA Action Plan will be given to the Major Scheme and Waterfront Working Party and Air Quality will be considered alongside the transport alteration.

Key items listed as part of the major scheme are:

- Better facilities at bus stations
- Real time passenger information
- New UTMC system
- Improved pedestrian and cycle routes in the Town Centre
- Introduction of a shuttle bus between Town Centre and Railway Station
- Working with key stakeholders to develop travel plans

Some of these items are detailed specifically in the action plan to ensure they are given priority.

5.1.2 Urban Traffic Management and Control (UTMC)

Suffolk County Council is investigating the use of the UTMC to control traffic control and reduce congestion. The aim is to 'feed' traffic through busy areas of town by holding traffic back on the outskirts and controlling movement through in an uncongested way. It can also be used to communicate with drivers via message boards, for example suggesting engines are switched off.

Congestion generally results in poor air quality and all three AQMAs have congested traffic. This is therefore likely to result in an improvement in air quality.

5.1.3 Idling Vehicles

Local Authorities have powers to request drivers of vehicles that are idling unnecessarily to switch off their engines. If the driver refuses, then a Fixed Penalty Notice can be issued.

We will carry out a publicity campaign to raise awareness, and investigate the use of enforcement patrols focussed on taxi ranks and bus stations.

Whilst this is not directly targeting air quality within the AQMAs, we believe that this is a cost-effective method of improving air quality across the Borough and raising awareness of air quality.

We will provide signage, 'Turn Engine Off' at taxi ranks/bus stations and at car waiting areas.

5.1.4 Roadside Emission Testing

Vehicles with high emissions are often not running efficiently thereby costing the driver money and increasing emissions of pollutants. The Vehicle and Operator Services Agency (VOSA) (as part of the Department of Transport) is responsible for carrying out roadside emission tests on vehicles.

We will investigate VOSAs schedule of testing for the Ipswich Borough and investigate the possibility of some joint emissions enforcement work on vehicles travelling through the AQMA areas.

5.1.5 Employment Zoning

Heavy goods vehicles contribute greatly to the concentrations of Nitrogen Dioxide in the Norwich Road/Valley Road/Chevalier Street junction area. This junction is located on one of the radial routes into town. It is suspected that these vehicles carry straight on into the town centre and service the commercial premises on the west side of town. However, it may be possible that they are servicing commercial premises located on other direct routes into town.

We will investigate the use of a camera survey to identify where the HGVs are travelling to through this junction and where possible give advice on other routes into town.

5.1.6 Bramford Road/Chevalier Street Pedestrian Crossing Review

This junction has traffic control lights and pedestrian crossing lights. Unusually the pedestrian crossing enables people to cross diagonally. This may be taking marginally longer than crossing one road.

A review of this crossing will be undertaken and an attempt at reducing congestion backing up into the Norwich Road/Chevalier Street AQMA will be undertaken.

An additional benefit of improved pedestrian safety may be achieved.

5.1.7 St Margaret's Street Traffic Signals

As part of the ongoing signal control reviews, these lights and their effectiveness will be assessed.

Traffic is frequently congested through St Margaret's Street heading east out of town. This street is canyoned and as such it is important that traffic flows easily through this junction.

Consideration of 'holding' traffic further back near to Crown Pools where there are not any 'relevant receptors' will be assessed.

5.2 **Public Transport Actions**

5.2.1 Bus Stop Improvements

Suffolk County Council is currently undertaking a programme of bus stop improvements. This includes raised kerbs to assist access onto buses, real time bus information within shelters, and all buses to be accessible by 2015.

5.2.2 Bus Timetable Improvements

At the present time each bus company has its own timetable and as such, planning routes or accessing information at a shelter can be difficult. Encouraging people onto buses has a double benefit to Air Quality in that it reduces numbers of vehicles on roads and reduces congestion, and also prevents buses running empty, thereby improving the economic viability of the bus route, resulting in more resources being put into the bus itself equalling newer engines and cleaner emissions.

SCC has agreed to investigate the possibility of consolidating timetables into one paper timetable. A real time information package is being developed.

5.2.3 Train Service Improvement Campaign

Suffolk County Council has liaison officers working with the train companies

5.2.4 Use of Bus Subsidies

There are various existing discounted multi-buy tickets. It is important that these are promoted and that people are encouraged to increase their use of buses by use of these savings schemes. The promotion will concentrate on those services travelling through AQMAs.

5.2.5 Bus Quality Partnership

Within all three AQMAs, emissions from buses are a considerable contributor to the exceedances of the objective levels.

A Bus Quality partnership scheme works towards ensuring that standards are raised and emissions reduced.

5.3 **Smarter Travel**

5.3.1 Healthy School Status

Each school in Suffolk is required to develop plans for Health School Status. This will include sustainable travel such as walking, bus routes, cycling storage.

This scheme is ongoing and led by Suffolk County Council and funded by the Department of Transport.

We will encourage and support Suffolk County Council in prioritising schools within and surrounding the AQMAs.

5.3.2 Park and Ride Schemes

Two new Park and Ride Schemes are proposed along with a bus lane along Bishops Hill, feeding from the Park and Ride. The two schemes are proposed for the A14/Nacton Road junction area and in the general locality of the A14 Wherstead Road junction.

Whilst the Park and Ride facility should result in fewer vehicles entering Ipswich there may be a negative climate change impact as people drive further to access the Park and Ride. With more facilities surrounding Ipswich, the affect of this will reduce as all major routes into town will have a Park and Ride facility, enabling and encouraging people to leave their vehicle out of town.

5.3.3 Passenger Transport Awareness Campaign

It is important to encourage people onto sustainable transport. This may be walking and cycling (both of which have the additional benefits of improved fitness), but passenger transport such as trains and buses are an essential part.

www.transportdirect.info is a government provided service, giving advice on methods of travel door to door.

We will promote this site in a bid to encourage people to travel by a more sustainable method, wherever the journey.

5.3.4 Green Travel Plans

There are two ways that Green Travel Plans can be promoted – either in existing local businesses and via Development Control for new developments. IBC and SCC both have involvement on this.

5.3.5 Smarter Travel Plan Suffolk

Smarter Travel encompasses all methods of sustainable transport and actively encourages people to think and travel in a 'greener' way. This proposal is for a Suffolk Travel Plan encouraging the public onto sustainable modes of transport into and out of Ipswich. Much of the traffic within the AQMAs will be travel to and from outside of Ipswich for work and shopping purposes. It is believed that many people find identifying a sustainable method of travel into and from the more rural districts difficult. A 'one to one' advisor is also to be considered as part of this proposal.

This is a high cost proposal (estimate £30k per year) and requires further investigation. It is intended that this will be researched and considered by 2010.

5.3.6 Free Season Tickets to Students

Ipswich has a new University and greatly improved college. Student accommodation is being built in the education quarter of town and along Duke Street. Free Season Tickets will enable students to use bus services.

A free shuttle bus service runs around the town centre circular route to include Queen Street, Old Cattle Market, Bond Street, Majors Corner, Tower Ramparts, Civic Drive and Russell Road.

6. ANTICIPATED AIR QUALITY IMPROVEMENTS

Each measure identified in this action plan has been put through a crude cost benefit analysis. Three measures have proven throughout this exercise to provide an 'umbrella' to various other options, and to be key to improving air quality in the AQMAs. These are the Traffic Management Options, Smarter Travel Actions and the Public Transport Actions. These three measures encompass traffic control and reducing congestion within the town centre, promoting sustainable travel and reducing vehicle numbers on the roads..

7. CONCLUSION

This Action Plan is the first AQMA Action Plan for the AQMAs within the Ipswich district and will be periodically reviewed and updated.

For practical purposes we have decided to focus on three measures which are to be treated as 'umbrella' measures. These are Traffic Management Options, Public Transport Actions and Smarter Travel Actions. All other measures can be placed under one of these three 'umbrellas' schemes.

8. STAKEHOLDERS AND CONSULTATION

Ipswich Borough Council is under a statutory duty to consult key stakeholders on the draft air quality action plan and detailed air quality assessments.

It is intended that this consultation will take place in October and last eight weeks.

This action plan, in its first draft, contains broad proposals operating over both short and long term. Where the Council makes any significant revisions at a later date, further consultation will be carried out.

GLOSSARY

Air Quality Objective:
Policy targets generally expressed as a maximum ambient concentration to be achieved, either without exception or with a permitted number of exceedances within a specified timescale (see also Air Quality Standard)

Air Quality Standard:
The concentrations of pollutants in the atmosphere which can broadly be taken to achieve a certain level of environmental quality. The standards are bases on assessment of the effects of each pollutant on human health including the effects on sensitive sub groups (see also Air Quality Objective)

Annual Mean:
The average of the concentrations measured for each pollutant for one year. In the case of the Air Quality Objectives this is for a calendar year.

AQMA:
Air Quality Management Area, an area which a local authority has designated for action based upon predicted exceedances of Air Quality Objectives.

Concentration:
The amount of a (polluting) substance in a volume (of air), typically expressed as a mass of pollutant per unit volume of air (for example, micrograms per cubic metre, $\mu g/m^3$) or a volume of gaseous pollutant per unit volume of air (parts per million, ppm)

Exceedance:
A period of time where the concentration of a pollutant is greater than the appropriate Air Quality Objective.

Microgram (μg):
One millionth of a gram.

Micrometer (μm):
Also referred to as a micron, one millionth of a metre

mg/m^3 milligrams per cubic metre of air:
A unit for describing the concentration of air pollutants in the atmosphere, as a mass of pollutant per unit volume of clean air. This unit is one thousand times larger than the $\mu g/m^3$ unit listed below.

$\mu g/m^3$ microgram per cubic metre of air:
A measure of concentration in terms of mass per unit volume. A concentration of 1 $\mu g/m^3$ means that one cubic metre of air contains one microgram (millionth of a gram) of pollutant

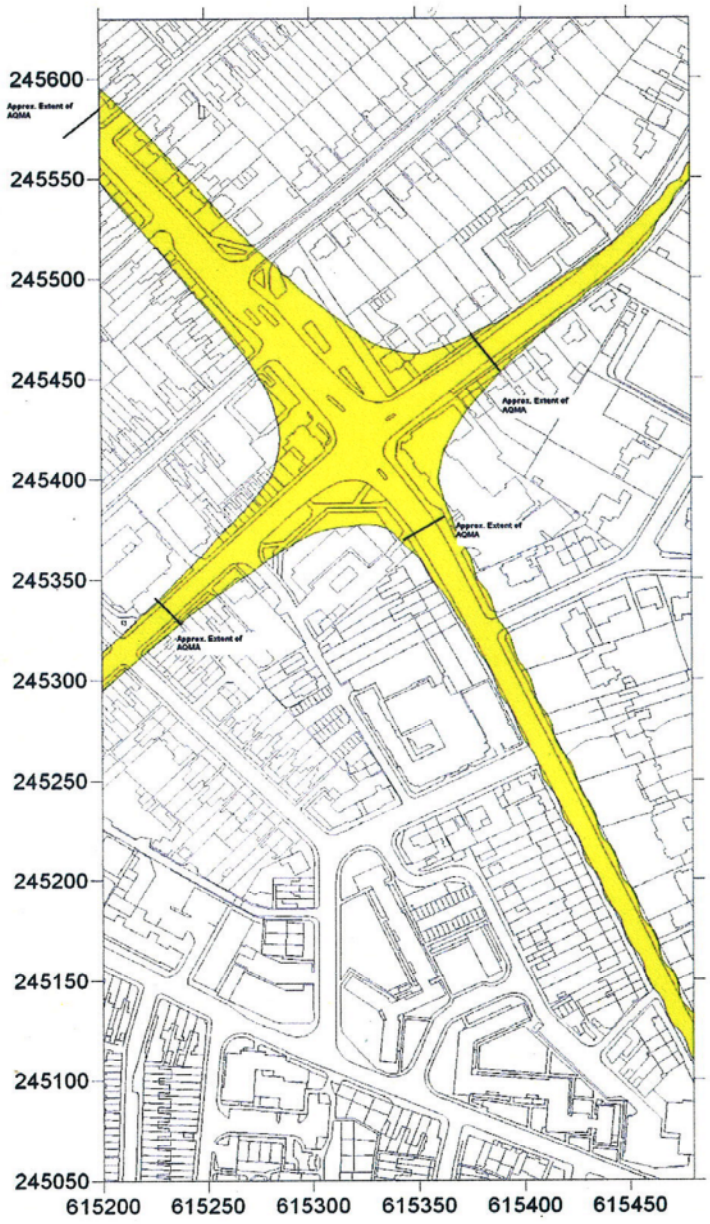
APPENDIX A

MAPS SHOWING LOCATION OF AIR QUALITY MANAGEMENT AREAS

APPENDIX A – MAPS OF THE AIR QUALITY MANAGEMENT AREAS

AREA 1 – NORWICH ROAD/CHEVALLIER STREET

Boundary of 40 μg/m^3 Annual Mean NO_2 Concentrations
at the Norwich Road/Valley Road Junction, Ipswich (2005)



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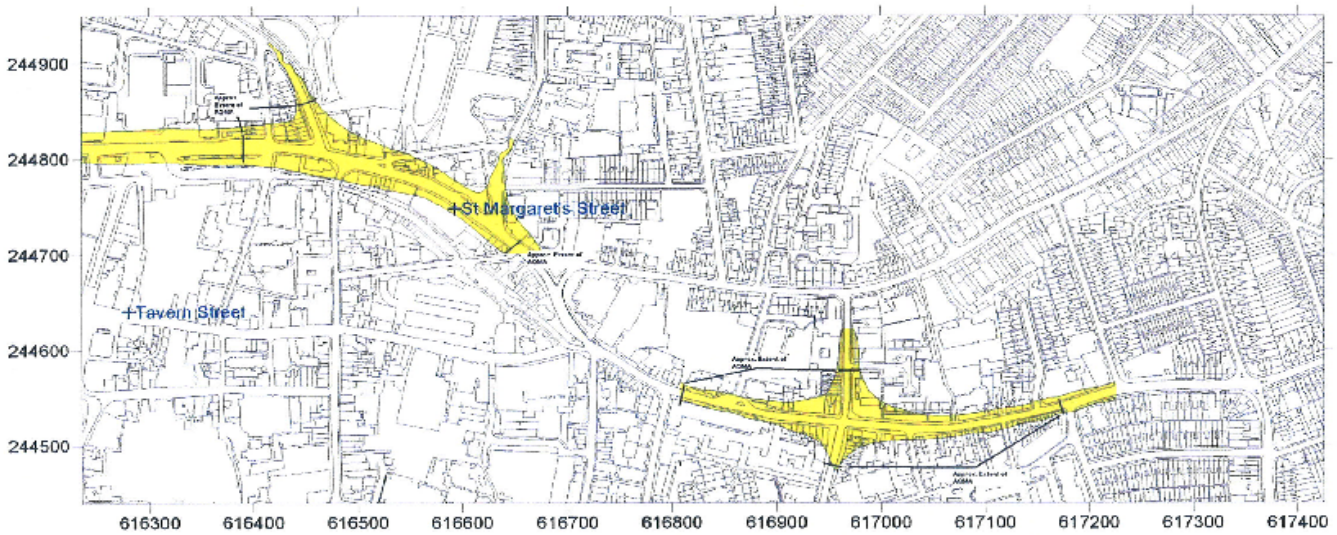
AREA 2 – ST MARGARET'S STREET/ST HELENS STREET

Annual Mean NO_2 Concentrations ($\mu g/m^3$), Crown Street, Ipswich (2005)



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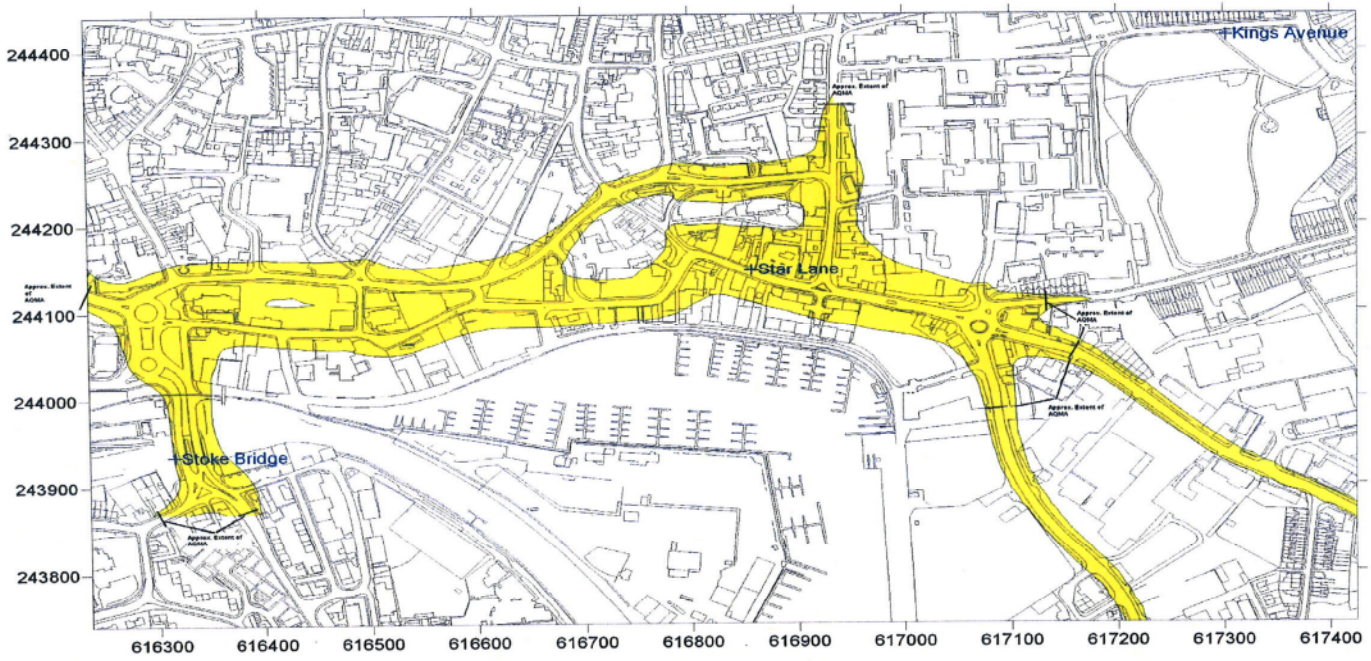
AREA 3 - STAR LANE GYRATORY

Annual Mean NO_2 Concentrations ($\mu g/m^3$), Ipswich (2005)



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APPENDIX B

AIR QUALITY ACTIONS

CRITERIA AND KEY

In the following tables the following criteria and key has been used.

Lead Organisation

SCC – Suffolk County Council
IBC – Ipswich Borough Council

Other Partners

SCC – Suffolk County Council
IBC – Ipswich Borough Council
VOSA – Vehicle and Operator Services Agency
DfT – Department for Transport

AQ Impact

Low air quality improvement in nitrogen oxides under 0.5 ug/m^3
Medium air quality improvement in nitrogen oxides of 0.5 – 1.0ug/m^3
High air quality improvement in nitrogen oxides of over 1.0ug/m^3
Negative – any deterioration in air quality

Timescales

Ongoing – happening at the present time
Short-term – up to 1 year
Medium-term – 1 – 3 years
Long-term – 3 years +

Cost

Low – under £5,000
Medium - £5 - £10,000
High – over £10,000

Air Quality Actions

Traffic Management Actions

Action	Description	Lead Organisation	Other Parties	AQ Impact	Timescale	Cost	Non-AQ impact	Actions Required
Ipswich Major Scheme	Ensure AQ is fully considered within Major Scheme and Waterside/Gyratory road network alterations	SCC	IBC	MED – HIGH Reduced congestion and promotion of sustainable travel	ONGOING	ZERO	Comprehensive project to support sustainable travel. Developed by end 2008. These improve fitness, encourage sustainable transport which in turn reduces impact on climate change	Take draft Action Plan to Major Scheme working party. Have Environmental Services presence on Working Party
Urban Traffic Management Control (UTMC)	Reduce congestion by use of UTMC which rationalises flows	SCC	IBC	MED Traffic would be controlled to reduce congestion & reduce idling	LONG TERM – to be trialled elsewhere and then considered for Ipswich	ZERO Funding available, or committed	Positive climate change through signage and suggestion to turn engines off if queuing	

Action	**Description**	**Lead Organisation**	**Other Parties**	**AQ Impact**	**Timescale**	**Cost**	**Non-AQ impact**	**Actions Required**
Idling Vehicles	Service of penalty notices on idling vehicles	IBC		LOW Raise awareness of importance of car emissions to air quality	MEDIUM	HIGH	Positive climate change impact	Investigate feasibility of information campaign followed by enforcement campaign
Roadside Emission Testing	General roadside and bus emission campaign to ensure minimum standards are adhered to	IBC	VOSA	LOW Raise awareness of importance of car emissions to air quality Stop those vehicles with high emissions from being on road	LONG	MEDIUM		To investigate viability of this campaign
Employment zoning	Identify where the HGVs are headed through the roundabout by camera surveys. Identify more appropriate less polluting routes	IBC SCC		MED – HIGH Rerouting HGVs reduces the emissions at this junction	LONG	HIGH		Investigate actual costs and implement if practical. Liaise with SCC Lorry Management Officer

Action	**Description**	**Lead Organisation**	**Other Parties**	**AQ Impact**	**Timescale**	**Cost**	**Non-AQ impact**	**Actions Required**
Bramford Road/Chev. Street pedestrian crossing review	Pedestrian crossing may be impacting on congestion in AQMA	IBC	SCC	LOW Should reduce congestion of traffic at lights	MED	LOW	May be less user friendly. But may be safer	Investigate alternative timings and methods of crossing
St Margaret's Street Signal Review	Signals in St Margaret's Street may be impacting on congestion	IBC		LOW – MED Reduce congestion in AQMA	SHORT	LOW		Investigate alternative timings at traffic signals
Valley Road – cycle lane	Cycle lane leading into mini roundabout	IBC		LOW Encourage cycling	SHORT	LOW		Ongoing Project Plan

Air Quality Actions

Public Transport Actions

Action	Description	Lead Organisation	Other Parties	AQ Impact	Timescale	Cost	Non-AQ impact	Actions Required
Bus Stop improvements	All buses used on local stage carriage works must be accessible	SCC		LOW-MED (depending on uptake) Encourages bus use and reduces car use	ONGOING 2015	ZERO - Ongoing	Improves Accessibility. Encourages sustainable travel therefore positive climate change impact	As per ongoing project plan
Bus Timetable Improvements	To consolidate all timetables into one and real Time information	SCC	Bus companies	LOW Encourages bus use and reduces car use by more customer friendly time-table information	LONG	LOW	Encourages sustainable travel via ease of information. Positive climate change	Investigate progress with this project
Bishops Hill Bus Lane	New bus lane to prioritise bus movement into town centre	SCC		NEG – LOW Will make bus journey faster & encourage bus use	ONGOING	ZERO	Positive impact on climate change if buses used. (Possible negative effect if car congestion increases)	None required Ongoing project

Action	**Description**	**Lead Organisation**	**Other Parties**	**AQ Impact**	**Timescale**	**Cost**	**Non-AQ impact**	**Actions Required**
Train Service improvements	Signalling changes to improve Ipswich – Lowestoft service	SCC/ Rail Companies		LOW Prioritise train use therefore reducing car use	ONGOING	ZERO - Ongoing	Positive on climate change if more travel on trains therefore reducing car miles	Continued liaison with the train companies. Continue to encourage improvements on railway line
Use of Bus subsidies	Promotion of existing discounted multi-buy tickets. Concentrate spend on services in AQMAs	SCC IBC		LOW Promotes bus use therefore reducing car use	MED	MED	Use of public transport is positive impact on climate change and health via walking to bus stops. Prevents social exclusion	Feasibility Study
Quality Bus Partnership development	Bus Quality Partnerships to ensure new engines used	SCC IBC	Bus companies	MED Would reduce emissions from buses	LONG	To be confirmed		To investigate the benefits of a partnership approach

Air Quality Actions

Smarter Travel Actions

Action	Description	Lead Organisation	Other Parties	AQ Impact	Timescale	Cost	Non-AQ impact	Actions Required
Healthy School Status	Each school in Suffolk develops plan to include sustainable travel such as walking bus by March 2009	SCC	Funded by DfT	LOW: Reduced car use leading to reduced congestion	ONGOING	LOW	Positive impact on climate change Positive in improving health and fitness Positive for noise if removing vehicles from roads	Contribute to ongoing project of taking Air Quality into Schools in Ipswich
Park and Ride x 2	Two new park and ride sites proposed around Ipswich	SCC		NEGATIVE – MEDIUM Reduces car trips through AQMAs	ONGOING	HIGH	Generally positive for climate change. (Possible negative climate change impact as a result of further car travel to access P&R. Possible negative impact of buses running empty)	Ongoing

Action	Description	Lead Organisation	Other Parties	AQ Impact	Timescale	Cost	Non-AQ impact	Actions Required
Raise awareness of all passenger transport	Include raising awareness of www.traveline.info www.transportdirect.info - to give advice re how to travel door to door sustainably	SCC	IBC	LOW Encourages reduced car usage & therefore reduces emissions	ONGOING	LOW		Investigate promotion activities
Green Travel Plans	Green Travel Plans to be encouraged and promoted in local businesses. IBC Development Control require these for new developments	IBC – development control through Planning SCC – have 2 officers tasked with persuading businesses to have travel plans.		LOW – MED Encourages people to use other methods of travel therefore reducing car use and congestion	ONGOING	LOW – additional resources required for enforcement.	Positive Climate Change Impact Positive AQ and Climate Change with reduced congestion. Health improvements if walking/cycling. Slight risk of negative on AQ and Climate change if people travel further to identify free parking. This can impact negatively on resident parking	As existing programme
Smarter Travel Plan Suffolk	Travel Plan throughout Suffolk encouraging people onto sustainable modes of transport in and out of Ipswich. To include one to one advice by a travel plan advisor	SCC IBC support		LOW -MED Encourages reduced car usage & therefore reduces emissions	LONG	HIGH	Positive health and fitness. Positive Climate change impact	To investigate the feasibility of this project

Action	**Description**	**Lead Organisation**	**Other Parties**	**AQ Impact**	**Timescale**	**Cost**	**Non-AQ impact**	**Actions Required**
Season tickets to students	University Campus Suffolk to offer free season tickets to students	University Campus Suffolk		LOW Some extra use of bus.			Positive impact on climate change if buses used and car usage reduced	Ongoing
Electric Charging Points	There is a shortage of electric vehicle charging points in Ipswich	IBC		LOW Will ensure that people using electric vehicles can easily recharge. May encourage use of electric vehicles locally	LONG	HIGH		Investigate the possibility of electric vehicle charging point placements throughout Ipswich

Action	**Description**	**Lead Organisation**	**Other Parties**	**AQ Impact**	**Timescale**	**Cost**	**Non-AQ impact**	**Actions Required**
Public Air Quality Monitoring Information	Make the continuous NO_2 monitoring results available to the public in real time via a Website link	IBC		LOW The continuous monitors are all situated in the AQMAs, enabling access to real-time monitoring may raise awareness of the poor air quality and contribute to behaviour changes	MED	HIGH		Investigate cost of the Website link
Air Quality Assessments	Developers required to assess the air quality impact of developments in and around the AQMAs	IBC SCC		LOW – MED Development detrimental to AQMAs controlled	ONGOING	ZERO		To agree clear guidelines for developers and planners in the form of a guidance document