



Two Gates Air Quality Action Plan

2015

Executive Summary

In 2012 the Council commissioned a specialist firm of air quality consultants, Ricardo-AEA to undertake a detailed assessment that involved modelling the pollution concentrations [Report ref AEA/R/ED58885, 28 October 2013.]

It was concluded that the council should declare an Air Quality Management Area which was completed in May 2014. An Air Quality Management Area gives the area special status where relevant professionals are required to consider a range of actions to improve air quality in the affected area (an Air Quality Action Plan).

Contents	Page	Page
1. Introduction		4
2. The Air Quality Management Process		5
3. Why do we need an Action Plan and what must it achieve?		7
4. Where does the pollution come from?		8
5. How much do pollution levels have to be reduced by?		9
6. What's being done already?		9
7. Two Gates Air Quality Action Plan Measures		10
8. Assessment of Air Quality Actions		11
9. Conclusions		13
10. Recommendations		13
11. How to contact us		14

1. Introduction

This report outlines the actions that Tamworth Borough Council will deliver between 2015-2020 in order to reduce concentrations of air pollutants and exposure to air pollution; thereby positively impacting on the health and quality of life of residents and visitors to the Borough's administrative area.

It has been developed in recognition of the legal requirement on the local authority to work towards Air Quality Strategy (AQS) objectives under Part IV of the Environment Act 1995 and relevant regulations made under that part and to meet the requirements of the Local Air Quality Management (LAQM) statutory process. This Plan will be reviewed every five years at the latest and progress on measures set out within this Plan will be reported on annually within Tamworth Borough Council's air quality update.

The Borough of Tamworth is located in the south-eastern corner of Staffordshire, 15 miles north-east of Birmingham and covers an area of 3,095 hectares. It is situated at the confluence of two rivers, the river Tame and Anker. Tamworth is essentially urban in character, which includes a vibrant town centre and smaller centres within local districts.

Tamworth's resident population of around **76,800** makes it one of the main urban centres in Southern Staffordshire. Its central location means that the Borough has good access to regional and national transport links. The M42 is on the eastern boundary whilst the A5 passes through the Borough to the south. Tamworth is located on the Midlands Trains route and has frequent links to London, Leicester and stations to the north. Both East Midlands Airport and Birmingham Airport are within 30 miles of Tamworth.

2. The Air Quality Management Process

2.1 Tamworth Borough Council is required by the government to regularly review and assess the air quality across the entire Borough as part of the UK's 'National Air Quality Strategy' and its associated guidance.

2.2 Tamworth has therefore been monitoring pollution for many years. This has comprised of nitrogen dioxide (NO₂) diffusion tube monitoring since 2006,

2.3 Progress report 2007 and Progress Report 2008

Following recommendations made in Tamworth Borough Council's 2006 Updating and Screening assessment, measurement of NO₂ concentrations commenced in Dosthill Road near the Two Gates junction in 2007.

The Progress Report 2007 concluded that the site at Dosthill Road may exceed the AQS objective for annual mean NO₂ concentrations in 2007 based on the limited data available at that time.

The progress Report 2008 concluded that the measured NO₂ annual mean of 39µg.m⁻³ in 2007 was not in excess of the 40 µg.m⁻³ objective therefore it was not required to proceed to a Detailed Assessment at that time; however based on the measured annual mean being close to the objective, three additional diffusion tube were deployed at other sites close to the junction at the start of 2008.

2.4 2009 Updating and Screening assessment

The annual mean NO₂ concentrations measured during 2008 at some of the Two Gates crossroads exceeded the annual mean objective. These were not however at points of relevant exposure; when the annual mean concentration was calculated at the nearest receptors using the nitrogen dioxide fall off with distance calculator it was found that NO₂ annual mean objective was not exceeded. Based on the 2008 measurements it was concluded that there was no requirement to conduct a Detailed Assessment at that time.

2.5 Progress report 2010 and Progress report 2011

From the 2009 and 2010 diffusion tube measurements, Tamworth Borough Council concluded that there was no requirement at that time to conduct a Detailed Assessment.

2.6 Updating and Screening assessment 2012

Based on an annual mean NO₂ concentration in excess of the 40 µg.m⁻³ objective at the diffusion tube site on Dosthill road; and the site being is a similar distance from the road as the nearby row of residential properties; the report concluded that a Detailed Assessment of NO₂ was required at the Two Gates Crossroads.

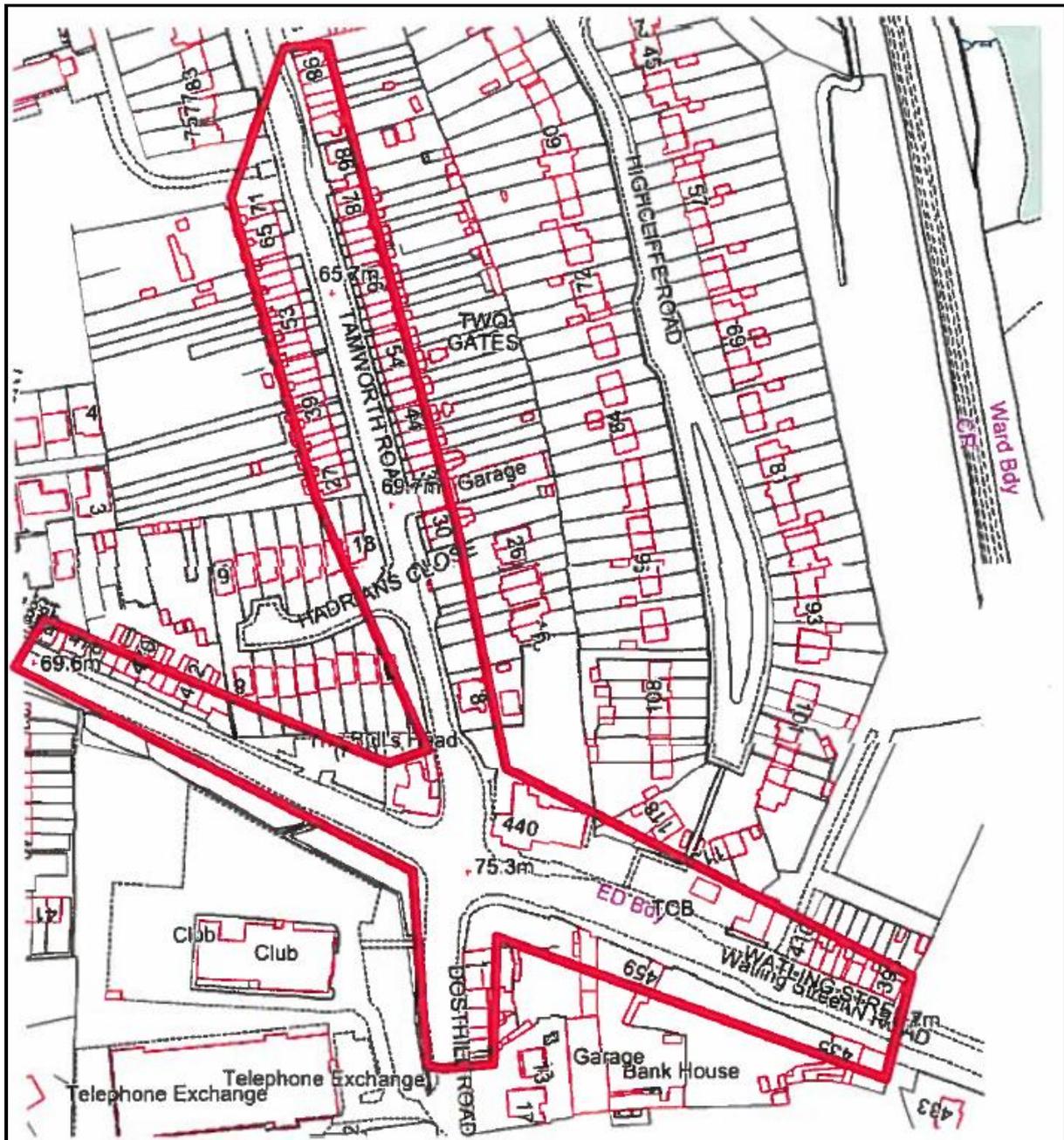
2.7 Detailed Assessment 2013

A Detailed Assessment of NO₂ concentration was conducted using dispersion modelling of road traffic emissions. The modelling study, which used traffic, monitoring and meteorological data for a calendar year of 2012 indicated that annual mean NO₂ concentrations in excess of the 40 µg.m⁻³ objective were occurring at locations where relevant human exposure is present. The exceedance area encompassed six residential properties on Dosthill Road; and one on Tamworth Road close to the Two Gates junction. [Report ref AEA/R/ED58885, 28 October 2013.]

It was concluded that the council should declare an Air Quality Management Area (AQMA) which was completed in May 2014. An AQMA gives the area special status where relevant professionals are required to consider a range of actions to improve air quality in the affected area (an Air Quality Action Plan).

The extent of the AQMA is shown in Figure 1.

Figure 1. Map of AQMA Boundaries



3. Why do we need an Action Plan and what must it achieve?

- 3.1 Tamworth Borough Council is required by section 84(1) of the Environment Act 1995 and its statutory guidance to formulate an 'Air Quality Action Plan' to aim to reduce the air pollution within the designated Two Gates AQMA and to agree a timescale for this.
- 3.2 The Council has therefore considered potential improvements that would help reduce pollution in the vicinity of Two Gates and, in liaison with a number of stakeholders, considered a number of air quality actions and scoped these down to two.
- 3.3 In accordance with the technical guidance/best practice and the emerging Tamworth Local Plan, the action planning is explained in Table 1 below:

Table 1: Action Planning Requirements from Statutory Guidance

Statutory Requirement	How this has been or will be achieved
Quantification of the source contributions to the predicted exceedances of the NO ₂ objective so that the action plans are effectively targeted.	Further Assessment' report should be undertaken after the Action Plan to gauge it's performance.
Evidence that all available options have been considered on the grounds of cost effectiveness and feasibility	Air Quality Steering Group has scoped the three proposals. The action plan takes into account the latest Local Transport Plan, as well as the Development Plan and the emerging local plan.
How the Council will use its powers and also work in conjunction with other organisations in pursuit of the NO ₂ objective.	The majority of the actions are the responsibility of the Council and many are captured in its Local Transport Plan
Clear timescales in which the Council and other organisations propose to implement the measures within its plan.	Timescales and responsibilities are included in the 8 action plan tables in Chapter 8 of this report.
Quantification of the expected impacts of the proposed measures and, if possible, an indication as to whether these measures will be sufficient to meet the NO ₂ objective.	As well as a Further Assessment Report, future monitoring will be undertaken to gauge trends and the impact of the Action Plan.
How the Council intends to monitor and evaluate the effectiveness of the plan.	The action planning proposals and their impact will be evaluated by the continuing monitoring programme already in place and will be reported on via the Council's annual air quality progress reports

- 3.4 A Further Assessment is recommended by statutory guidance to confirm the boundaries of identified areas of exceedances.

4. Where does the pollution come from?

4.1 Two Gates junction has two lanes of traffic, Watling Street A5(B5404) running west to east; and Tamworth Road, (A51) two lanes heading into the town in the north and two lanes heading south.

4.2 Table 2 below shows the average daily flow and it can be seen that cars are the main vehicle.

Table 2: Two Gates, Tamworth - Annual Average Daily Flows

Street	%Cars	%LGV	%HGV	%Buses	%2WM	AADF 2012
Dosthill Road	80.0	12.8	5.5	0.8	0.8	9308
Watling Street	80.0	12.8	5.5	0.8	0.8	15492
Atherstone Street	80.0	12.8	5.5	0.8	0.8	15492
Tamworth Road	80.0	12.8	5.5	0.8	0.8	12650

LGV – Light Goods Vehicles

HGV – Heavy Goods Vehicles (Articulate and Rigid)

2WM – Motorcycles

4.3 The NO₂ around the A51/A5 corridor in the vicinity of the Two Gates junction is recognised as being linked to traffic emissions. Therefore, the action plan focuses only on traffic related issues and does not, for example, include those areas of pollution control work traditionally associated with environmental health departments and/or the work of the Environment Agency. In keeping with this, although the following list of environmental actions are ongoing they have not been included in the final air quality plan.

4.3.1 Regulation of industry through ‘Local Air Pollution Control’ and ‘Integrated Pollution Prevention and Control’ by Tamworth.

The Council’s various ‘Updating and Screening Assessment’ reports have found that the regulation of Part B and A2 industrial processes within the city is not significant in terms of the apportionment of nitrogen dioxide in the Two Gates junction where the air quality management area has been declared.

4.3.2 Regulation of industry through ‘Integrated Pollution Prevention and Control’ (IPPC) by the Environment Agency. There are no Part A1 industrial processes near to the declared Two Gates AQMA for consideration in terms of contributing to any nitrogen dioxide.

4.3.3 Regulation of Smoke by the Council under the Clean Air Act 1993. The Council’s air quality reports continually find that the regulation of dark smoke from industrial chimneys in Tamworth is not significant in terms of the nitrogen dioxide apportionment in the vicinity of the Two Gates AQMA.

4.3.4 Domestic Smoke Control via the Council’s enforcement of the Clean Air Act 1993. The Council’s air quality reports do not find the absence of smoke control areas in Tamworth relevant for the NO₂ objective in the vicinity of the Two Gates AQMA.

4.3.5 Statutory nuisance via the Council’s enforcement of part III of the Environmental Protection Act 1990. This is essentially a reactive power to be invoked in the case of smoke, dust, fume and smell nuisance complaints.

The Council does not consider these to be significant for the purposes of the action plan.

5. How much do pollution levels have to be reduced by?

- 5.1 The purpose of an air quality action plan is to help bring down air pollution in hot spot areas.
- 5.2 It is not just the occasional 'high pollution' day that can damage health, as it is thought that long term exposure to lower levels of pollution can also be harmful to health. This is relevant to Tamworth as it is the annual $40\mu\text{g}/\text{m}^3$ average NO_2 target that is being exceeded and not the hourly objective.
- 5.3 There have been four monitoring sites within the close vicinity of the Two Gates junction, shown in Table 3:

Table 3: Annual mean NO2 diffusion tube measurements 2012 to 2014 ($\mu\text{g}\cdot\text{m}^{-3}$)

Site	2012	2013	2014
Q6S Dosthill Rd. Two Gates	42.6	38.3	39.3
Q6W Watling St. Two Gates Club	39.8	37.4	37.0
Q6N Tamworth Rd. Two Gates	40.6	33.3	33.2
Q6E 440 Watling St.	45.7	36.3	40.6

Exceedances of the annual mean objective are highlighted in bold

Of these, sites Q6E 440 Watling Street have been identified as continuing to breach the government's objective level.

6. What's being done already?

- 6.1 National policies that might reduce NO_2 in Tamworth include vehicle and fuel taxation, which attempt to reduce the emissions by reducing the rate of traffic growth. There are also national promotions of less polluting vehicle technology, including LPG and electric cars.
- 6.2 Locally, through its Local Transport Plan, is committed to developing an integrated, sustainable transport system for Tamworth. Staffordshire, recognising that our present car culture is unsustainable, damaging to the quality of life in the county and costly to business. The Council is therefore committed to delivering a general shift towards more sustainable and healthy modes of travel, such as walking, cycling and public transport. It also seeks to dissuade single occupancy car use.
- 6.3 Local measures already completed are:
- A new cycle way has been completed in 2011 and schemes to promote health and fitness are being added throughout the Borough.

- Vehicle emission testing. This has been carried out near to the Two Gates AQMA to randomly test vehicle emissions in conjunction with the Vehicle & Operator Services Agency (VOSA).

6.4 The Air Quality, Two Gates Steering Group was set up and comprised of representatives from:

- Environmental Health, Tamworth Borough Council
- Planning, Regeneration & Economic Development, Tamworth Borough Council
- Transport & Highways, Staffordshire County Council
- Public Health Staffordshire County Council
- Environment Agency

It met at Staffordshire Air Quality Forum to discuss the current levels and trends associated with pollution within Tamworth, Staffordshire and to agree the proposed action planning work within this report. The existence of an Air Quality Steering Group is considered to be 'best practice' by the technical guidance note LAQM TG(09).

7. Two Gates' Air Quality Action Plan Measures

7.1 The Council has scoped two air quality actions in liaison with partners. These actions are listed below:

Number	Action	Target Date
1	Improvements to the traffic light sequencing at the A5/A51 junction at Two Gates	Completion due in 2015
2	Information and awareness raising	Ongoing

8. Assessment of Air Quality Actions

Action Number 1:	Improvements to the traffic light sequencing at the A5/A51 junction at Two Gates
Action	Alterations to the traffic light sequence to minimise queuing at the traffic lights.
Responsibility	Transport & Highways, Staffordshire County Council
Other Environmental Effects	May reduce noise at junction.
Council's Corporate Plan	Should help preserve and enhance the environment
Cost to Implement	Low; planned before AQMA declared
Time Needed to Implement	To be completed 2014 – 2015
Possible Public Perceptions	Quicker sequencing likely to be welcomed, although this will be to the detriment of traffic heading east.
Practicality and Applicability	Practical and applicable to all traffic
Action to Reduce Negative Perceptions	Need to emphasise overall environmental and congestion gain.
Is it Included in LTP?	Yes
Impact to be modelled?	Possibly via a further assessment.
Evaluation of Action?	Yes, by using long term /trend Two Gates diffusion tube data and via future traffic flows (AADT) compared with AADTs prior to this action.

Action Number 2:	Information and Awareness Raising & Behavioural Change
Action	Improve the web site on air quality; Further promote 'school travel plans'
Responsibility	Environmental Health Liaison with Public Health n.b. there are existing schemes. i.e getting INTO school promoted by Staffordshire County Council
Other Environmental Effects	Reduces peak hour congestion; Reduces traffic on roads Reduces parking and congestion pressures; Improves wider environment by reduced noise levels and visual quality
Council's Corporate Plan	Should help preserve and enhance the environment
Cost to Implement	Low;
Time Needed to Implement	Website, complete by 2014-15; Behavioural change - Ongoing
Possible Public Perceptions	Encourages healthier and fitter adults and children May not be flexible for work, college and school needs of family Personal and road safety concerns, particularly for schools Commuters feel they are doing something positive and saving money Possible resistance to change
Practicality and Applicability	Applicable in cases where adults, students and children Needs to be linked to other strategies such as cycling etc.
Action to Reduce Negative Perceptions	Highlight positive health benefits through information Overcome negative concerns of personal and road safety
Is it Included in LTP?	Yes
Impact to be modelled?	No
Evaluation of Action?	Web hits? Reduction in Two Gates diffusion tube data and via future traffic flows (AADT) compared with AADTs prior to this action

9. Conclusions

- 9.1 Since the declaration of an AQMA in Tamworth in 2014, there have been few exceedances of the government's NO₂ objective around the Two Gates junction. These will continue in the future at numerous monitoring locations. To some extent air quality arising from vehicle exhausts has been reducing due to improved engine efficiency and other technical advances such as the requirement for catalytic converters. In addition, Staffordshire County Council Highways Department, which is responsible for traffic management at this junction, made alterations to the sequence of the traffic lights at the junction.
- 9.2 Although no new exceedance areas outside the AQMA are expected, further monitoring has continued by Tamworth Borough Council to keep this under review.
- 9.3 Tamworth Borough Council has scoped two air quality actions and these make up the proposed air quality action plan.
- 9.4 All actions are likely to have an impact on traffic pollution levels either directly or indirectly.
- 9.5 Tamworth Borough Council therefore concludes that the actions proposed will significantly help to reduce the number of houses in Tamworth which are currently affected by pollution. This conclusion is reached, despite year on year annual increases in vehicle ownership and the inevitable increases in traffic movements.
- 9.6 The next chapter makes recommendations based on the above and also proposes that the actions are reviewed to ensure that these projections remain accurate.
- 9.7 When any areas of the AQMA become no longer relevant, then the boundary should be altered and ultimately undeclared.

10. Recommendations

- 10.1 Tamworth Borough Council recommends that the actions in this plan are, where appropriate, considered for modelling via a 'Further Assessment' report, yet to be commissioned from a suitable consultancy.
- 10.2 Thereafter the performance of these actions should be regularly evaluated and reviewed via annual air quality reports.
- 10.3 Tamworth Borough Council will maintain the air quality management area in Two Gates until satisfied that no houses are at risk of exceeding the annual mean $40\mu\text{g}/\text{m}^3$ nitrogen dioxide objective. In the interim, the boundary will be reviewed and if necessary formally amended to take into account changes in pollution levels.

11. How to contact us

If you have any comments on this AQAP please send them to Steve Lewis at:

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