Bolsover District Council

Air Quality Management Area Review – Detailed Assessment

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Executive Summary

Bureau Veritas was appointed by Bolsover District Council (BDC) to review the air quality management areas (AQMAs) declared within the borough with a view to informing the proposed revocation of the AQMAs. Air quality monitoring data from the June 2017 Annual Status Report (ASR) within the proximity of each AQMA was reviewed to evaluate the general trends in the last five years.

It is possible to revoke AQMAs through analysis of monitoring data and local development information alone, therefore a review of each AQMA has been undertaken; taking into consideration the monitored pollutant level trends, the proximity of other AQMA boundaries, any changes to land use and any potential future development.

The local authority has 3 AQMAs, two of the sites are small groups of houses close to the M1 motorway (South Normanton and Barlborough AQMA No. 2), with the third AQMA (Barlborough AQMA No.1) based on a single property close to a roundabout leading to the M1 motorway.

Following a review of local NO_2 monitoring trend data and consideration of other known proposed developments it is considered that two of the AQMAs; Barlborough AQMAs 1 & 2, should be revoked and diffusion tube monitoring reduced. Following a notable exceedance in 2017 at the AQMA at South Normanton, it is recommended that the AQMA remains. It is considered that some diffusion tube monitoring should continue at each of the three sites in order to monitor impacts from any future developments, notably the large-scale December 2017 planning application for Clowne Garden Village, as well as impacts from the M1 motorway's conversion to a smart motorway.

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1 Introduction

1.1 Project Background Scope of Assessment

Bureau Veritas has been commissioned by Bolsover District Council (BDC) to undertake a review of the three long standing Air Quality Management Areas (AQMAs) declared within the borough, with a view to informing their proposed revocation.

The AQMAs, all declared as a result of road traffic emissions in relation to annual mean Air Quality Objective (AQO) for NO_2, are located as follows:

- **South Normanton AQMA** - Located to the east of southbound M1 exit slip road at Junction 28 (South Normanton);
- **Barlborough AQMA No. 1** – a single property close to, and located north east of a roundabout leading to the Motorway and the A619 in Barlborough, near to Junction 30; and
- **Barlborough AQMA No. 2** – Located to the East of the Motorway close to Junction 30 in Barlborough.

No exceedences of the annual mean AQO have been recorded in two of the AQMAs since 2012. The South Normanton AQMA similarly reported no exceedances since 2013, however, indicative 2017 data showed mostly increased emission results compared to previous years together with one exceedance of the AQO. The BDCs 2017 Annual Status Report (ASR) recommended that the Council commences the procedure for revoking the AQMAs by undertaking a detailed assessment at the earliest opportunity, however this was concluded ahread of the 2017 exceedence data.

The delay in undertaking the detailed assessment has been for the following reasons;

- to ensure that the apparent reduction was not just because of the reported year on year variations due to meteorological factors; and,
- the M1 motorway, which is a major traffic source at all three AQMAs, has for at least 18 months prior to April 2016, been subjected to extensive road works involving 50mph speed limits and lane closures during its conversion to a 4-lane smart motorway.

It was therefore recommended that the detailed assessment decision was delayed until there was at least one year of monitoring data since the opening of the smart motorway to ensure that the road works and reduced speed limits had not artificially reduced the NO_2 concentrations for the temporary conversion period only.

Following appraisal of BDCs 2017 Annual Status Report (ASR) Defra provided the following response in relation to revocation of the AQMAs:

> *"We agree with the Council's proposal to consider revoking the three AQMA's…The Council may decide between a screening assessment using the current monitoring, or carry out a further assessment to ratify the recent results if there is reasonable doubt over the monitoring results"*

1.2 Scope of Review

This report has addressed the comments above based on the following scope:

- Summarise the AQMA history of Bolsover District Council (BDC);
- Assess the monitored pollutant trend data within each AQMA since declaration;
- Review the locations of each AQMA and proximity to other AQMA boundaries;
- Detail any land use changes within and surrounding the declared AQMAs; and,
- Provide recommendations for revoking any/all of the AQMAs.

2 Air Quality – Legislative Context

2.1 Air Quality Strategy

The importance of existing and future pollutant concentrations can be assessed in relation to the national air quality standards and objectives established by Government. The Air Quality Strategy[1] (AQS) provides the over-arching strategic framework for air quality management in the UK and contains national air quality standards and objectives established by the UK Government and Devolved Administrations to protect human health. The air quality objectives incorporated in the AQS and the UK Legislation are derived from Limit Values prescribed in the EU Directives transposed into national legislation by Member States.

The CAFE (Clean Air for Europe) programme was initiated in the late 1990s to draw together previous directives into a single EU Directive on air quality. The CAFE Directive[2] has been adopted and replaces all previous air quality Directives, except the 4th Daughter Directive[3]. The Directive introduces new obligatory standards for $PM_{2.5}$ for Government but places no statutory duty on local government to work towards achievement of these standards.

The Air Quality Standards (England) Regulations[4] 2010 came into force on 11 June 2010 in order to align and bring together in one statutory instrument the Government's obligations to fulfil the requirements of the new CAFE Directive.

The objectives for ten pollutants – benzene (C_6H_6), 1,3-butadiene (C_4H_6), carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), sulphur dioxide (SO_2), particulate matter - PM_{10} and $PM_{2.5}$, ozone (O_3) and Polycyclic Aromatic Hydrocarbons (PAHs), have been prescribed within the AQS[2].

The EU Limit Values are considered to apply everywhere with the exception of the carriageway and central reservation of roads and any location where the public do not have access (e.g. industrial sites).

The AQS objectives apply at locations outside buildings or other natural or man-made structures above or below ground, where members of the public are regularly present and might reasonably be expected to be exposed to pollutant concentrations over the relevant averaging period. Typically these include residential properties and schools/care homes for long-term (i.e. annual mean) pollutant

[1] The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007), Published by Defra in partnership with the Scottish Executive, Welsh Assembly Government and Department of the Environment Northern Ireland

[2] Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe.

[3] Directive 2004/107/EC of the European Parliament and of the Council of 15 December 2004 relating to arsenic, cadmium, mercury, nickel and polycyclic hydrocarbons in ambient air.

[4] The Air Quality Standards Regulations (England) 2010, Statutory Instrument No 1001, The Stationary Office Limited.

objectives and high streets for short-term (i.e. 1-hour) pollutant objectives. Table 1 taken from LAQM.TG(16)[1], provides an indication of those locations that may or may not be relevant for each averaging period.

This assessment focuses on the NO_2 annual mean data, as this is the pollutant of most concern within the Council's administrative area. Moreover, as a result of traffic pollution, the UK has failed to meet the EU Limit Values for NO_2 by the 2010 target date. As a result, the Government has had to submit time extension applications for compliance with the EU Limit Values. Continued failure to achieve these limits may lead to EU fines. The AQS objectives for these pollutants are presented in Table 2.

Table 1 - Examples of where the Air Quality Strategy Objectives should apply

Averaging Period	Objectives should apply at:	Objectives should generally not apply at:
Annual mean	All locations where members of the public might be regularly exposed Building facades of residential properties, schools, hospitals, care homes etc.	Building facades of offices or other places of work where members of the public do not have regular access. Hotels, unless people live there as their permanent residence. Gardens of residential properties. Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term
24-hour mean and 8-hour mean	All locations where the annual mean objectives would apply, together with hotels. Gardens or residential properties[1].	Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term.
1-hour mean	All locations where the annual mean and 24 and 8-hour mean objectives would apply. Kerbside sites (e.g. pavements of busy shopping streets). Those parts of car parks, bus stations and railway stations etc. which are not fully enclosed, where the public might reasonably be expected to spend one hour or more. Any outdoor locations at which the public may be expected to spend one hour or longer.	Kerbside sites where the public would not be expected to have regular access.
15-minute mean	All locations where members of the public might reasonably be expected to spend a period of 15 minutes or longer.	

[1] For gardens and playgrounds, such locations should represent parts of the garden where relevant public exposure is likely, for example where there is seating or play areas. It is unlikely that relevant public exposure would occur at the extremities of the garden boundary, or in front gardens, although local judgement should always be applied.

Table 2 - Relevant AQS Objectives for NO_2

Pollutant	AQS Objective	Concentration Measured as:	Date for Achievement
Nitrogen Dioxide (NO_2)	200µg/m³ not to be exceeded more than 18 times per year	1-hour mean	31st December 2005
	40µg/m³	Annual mean	31st December 2005

2.2 Local Air Quality Management (LAQM)

Part IV of the Environment Act 1995[5] places a statutory duty on local authorities to periodically Review and Assess the current and future air quality within their area, and determine whether they are likely to meet the AQS objectives set down by Government for a number of pollutants – a process known as Local Air Quality Management (LAQM). The AQS objectives that apply to LAQM are defined for seven pollutants: benzene, 1,3-butadiene, carbon monoxide, lead, nitrogen dioxide, sulphur dioxide and particulate matter.

Where the results of the Review and Assessment process highlight that problems in the attainment of health-based objectives for air quality will arise, the authority is required to declare an Air Quality Management Area (AQMA) – a geographic area defined by high concentrations of pollution and exceedances of health-based standards.

2.3 Summary of AQMAs

The Council completed all the rounds of LAQM Review and Assessment as required by Part IV of the Environment Act 1995, up to the 2017 Annual Status Report which was completed in April 2017.

Between 2004 and 2007, Bolsover District Council declared three AQMAs following assessment of air quality under the LAQM regime. The three AQMAs identified were due to the exceedences of annual mean AQO for NO_2 from road traffic emissions. A summary of the AQMAs is presented in Table 3.

Table 3 - Air Quality Management Areas in Bolsover District Council

AQMA Name	Pollutants and Air Quality Objectives	Year Declared	Description
South Normanton AQMA	NO_2 Annual Mean	2004	An area encompassing twelve properties to the east of the M1, extending 100m east of the carriageway
Barlborough AQMA No 1	NO_2 Annual Mean	2005	A single property located adjacent to the A619/616 roundabout
Barlborough AQMA No 2	NO_2 annual mean	2007	An area encompassing five properties where the boundaries border the M1 to the west

[5] Environment Act, Part IV 1995 (http://www.legislation.gov.uk/ukpga/1995/25/part/IV)

3 Review of Air Quality Management Areas

3.1 South Normanton AQMA

The South Normanton AQMA, comprising of twelve properties, was declared on 2 July 2004 in relation to exceedences of the annual mean NO_2 AQO. The boundary of the AQMA is shown in Figure 1. The diffusion tube monitoring locations are also identified.

Figure 1 - South Normanton AQMA

Table 4 - Diffusion Tube Monitoring for NO_2 within or close to South Normanton AQMA

Site ID	Site Type	NO_2 Annual Mean Concetration µg/m^3					
		2012	2013	2014	2015	2016	2017 [a]
5 26 27	Roadside	**41.1**	37.8	37.0	37.6	35.8	39.0
10	Roadside	31.0	32.3	30.6	25.9	29.1	25.2
15	Roadside	**41.0**	39.4	36.9	37.6	36.0	**41.5**
20	Roadside	41.0	36.1	36.2	36.0	35.5	37.5
21	Suburban	33.0	30.4	29.8	26.2	28.3	28.7

[a] Indicative data for 2017 using bias adjustment factor for 2016

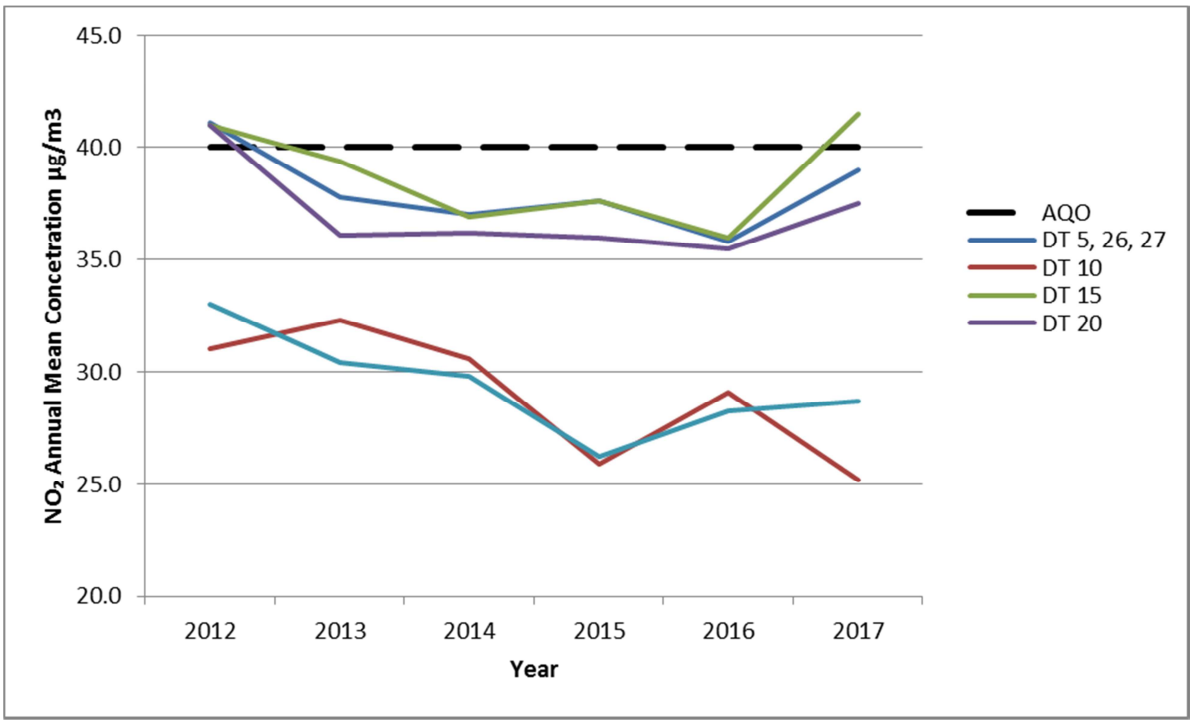
Table 4 presents the data of the diffusion tubes located either within the boundary of, or close to, the AQMA at South Normanton. The annual mean data for 2017 is indicative only as it has been calculated using a bias adjustment factor for 2016. At the time of writing a bias adjustment factor for 2017 is not available.

The foremost observation from the table shows that no exceedences have been recorded at any of the monitoring sites between 2013 and 2016. In 2012 annual mean NO_2 concentrations of 41.1µg/m^3 and 41.0µg/m^3 were recorded at the triplicate site 5/26/2 and site 15 respectively. Results for the 2016 monitoring found that concentrations at all tubes were no higher than 36µg/m^3.

Site 15 was observed to show an indicative exceedences in 2017 with an annual mean NO_2 concentration of 41.5µg/m^3 recorded. In 2017 Annual mean NO_2 concentrations were found to increase at four of the five monitoring locations.

Figure 2 illustrates the NO_2 concentration trend for the monitoring undertaken in the South Normanton AQMA, demonstrating both the decline in NO_2 concentrations at most sites between 2012-2016 together with no diffusion tube monitoring exceededances of the 40µg/m^3 annual mean NO_2 AQO up to 2016. The 2017 data mostly shows an increase in NO_2 levels, with one exceedance at site 15.

Figure 2 - South Normanton AQMA 2012-2017

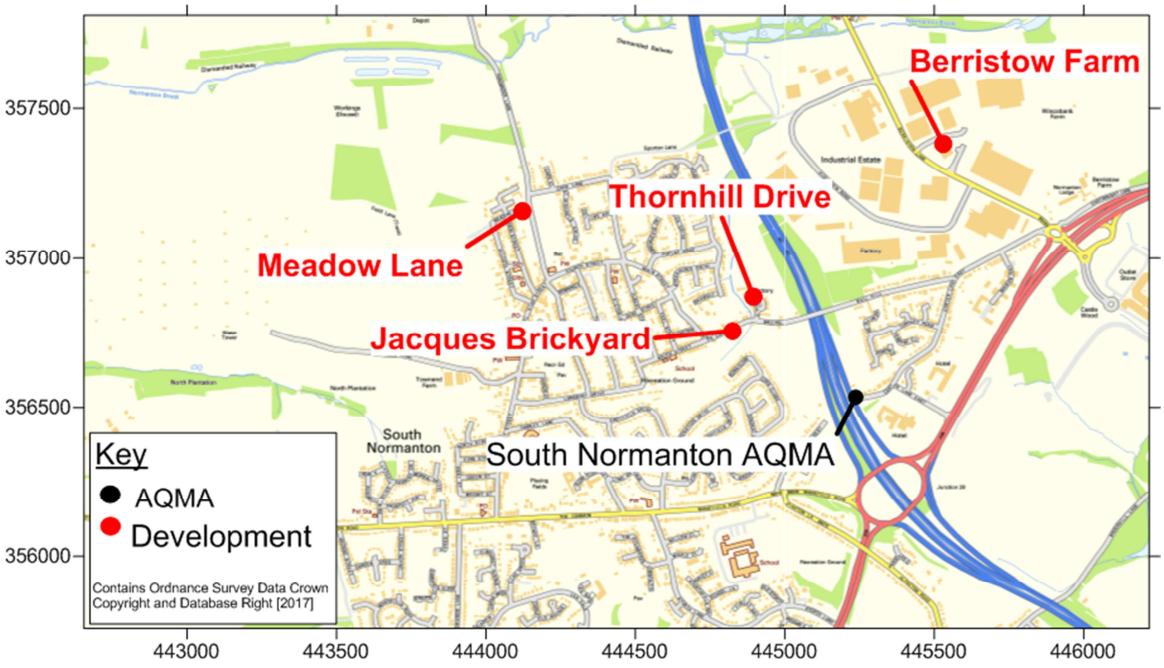


Anticipated land use changes and future development in the area are identified in Figure 3. Briefly these developments consist of the following:

- Meadow Lane, South Normanton; 10 residential dwellings;

- Thornhill Drive, South Normanton; 36 residential dwellings;
- Jacques Brickyard, South Normanton; 35 residential dwellings; and
- Land located North and West of Berristow Farm, Mansfield Road, South Normanton; 80 bed hotel.

Figure 3 - South Normanton AQMA and proposed local development sites



Although the four identified developments are likely to increase the amount of road traffic in the local area due to the size of the developments, this is not likely to impact as largely on NO_2 concentrations when considered in context of the existing traffic on the M1 motorway. It is likely that the indicative exceedence and overall increases in NO_2 concentrations reported for South Normanton AQMA in 2017 can be attributed mostly to traffic on the nearby four carriageway motorway.

3.2 Barlborough AQMA No 1

Barlborough AQMA No 1 comprises of a single property and was declared on 22 August 2005. This is shown in Figure 4.

Figure 4 - Barlborough AQMA No 1

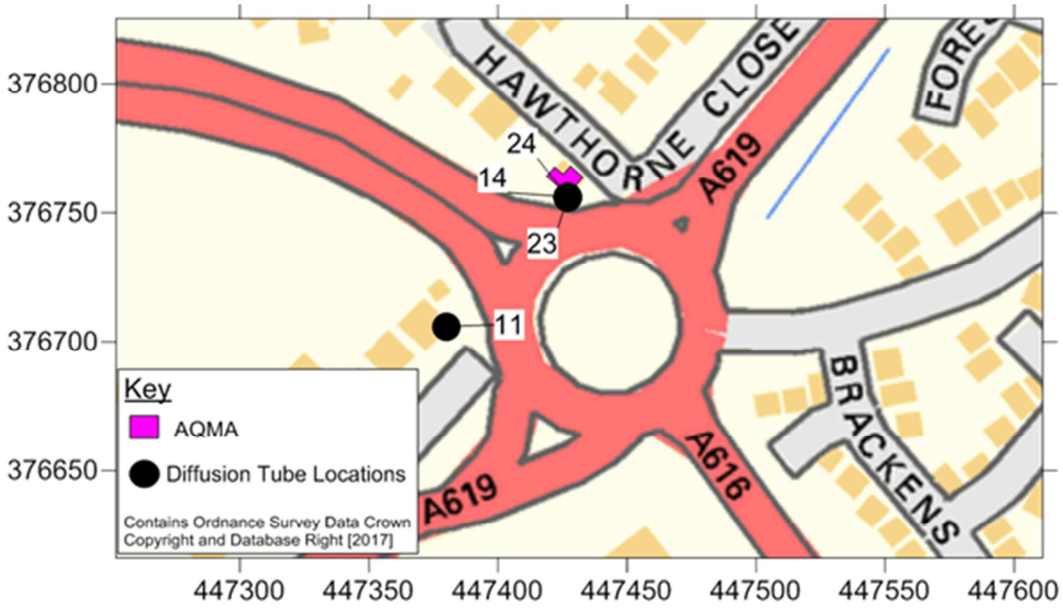


Table 5 - Diffusion Tube Monitoring for NO_2 within or close to Barlborough AQMA No 1

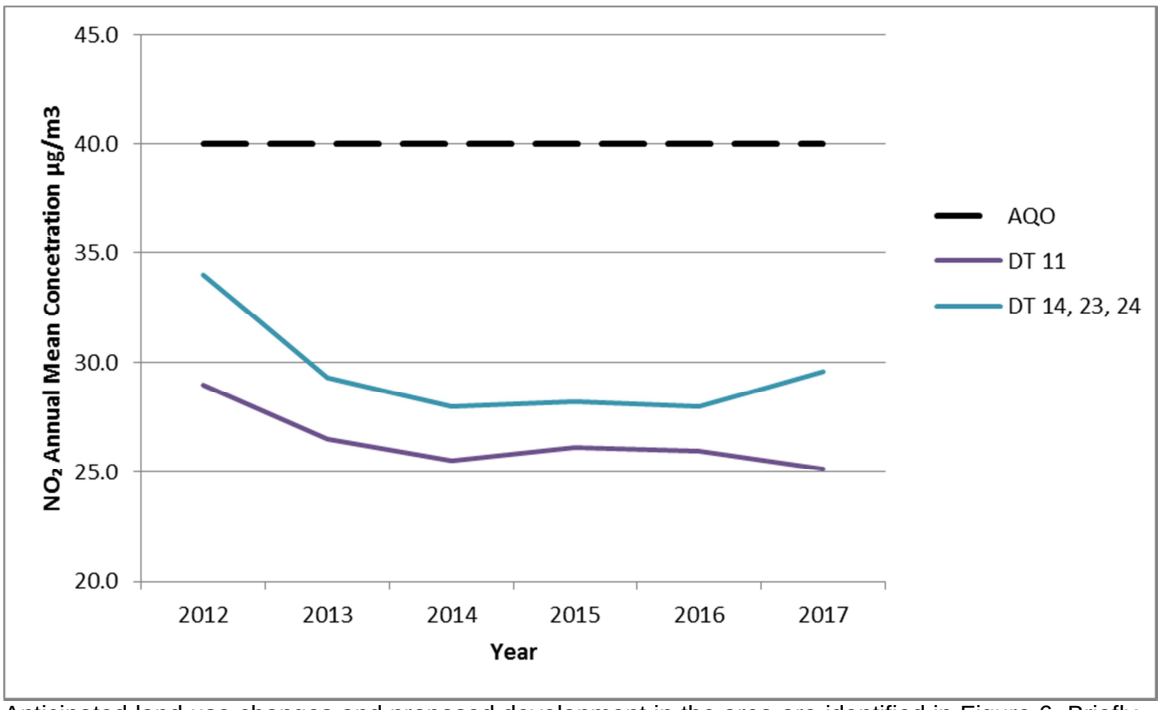
Site ID	Site Type	NO_2 Annual Mean Concetration µg/m3					
		2012	2013	2014	2015	2016	2017 [a]
11	Suburban	29.0	26.5	25.5	26.1	25.9	25.1
14 23 24	Roadside	34.0	29.3	28.0	28.2	28.0	29.6

[a] Indicative data for 2017 using bias adjustment factor for 2016

Table 5 presents the data of the diffusion tubes located within the boundary of or close to Barlborough AQMA No 1, locations of which are illustrated in Figure 4. The highest recorded annual mean NO_2 concentration at either of the sites during the years from 2012 to 2017 was 34.0µg/m^3 at the triplicate site 14/23/26, below the 40µg/m^3 annual mean AQO. In comparison to the results recorded in 2012, the NO_2 concentrations have decreased at both the triplicate site (14/23/24) and the individual tube site (11). The annual mean data for 2017 is indicative only as it has been calculated using a bias adjustment factor for 2016. At the time of writing a bias adjustment factor for 2017 is not available.

Figure 5 further illustrates the NO_2 concentration trend at the monitoring sites located within or close to Barlborough AQMA No 1 between 2012 and 2017. The annual mean NO_2 AQO of 40µg/m^3 has not been exceeded throughout the sampling period and NO_2 concentrations at both sites show a generally decreasing trend.

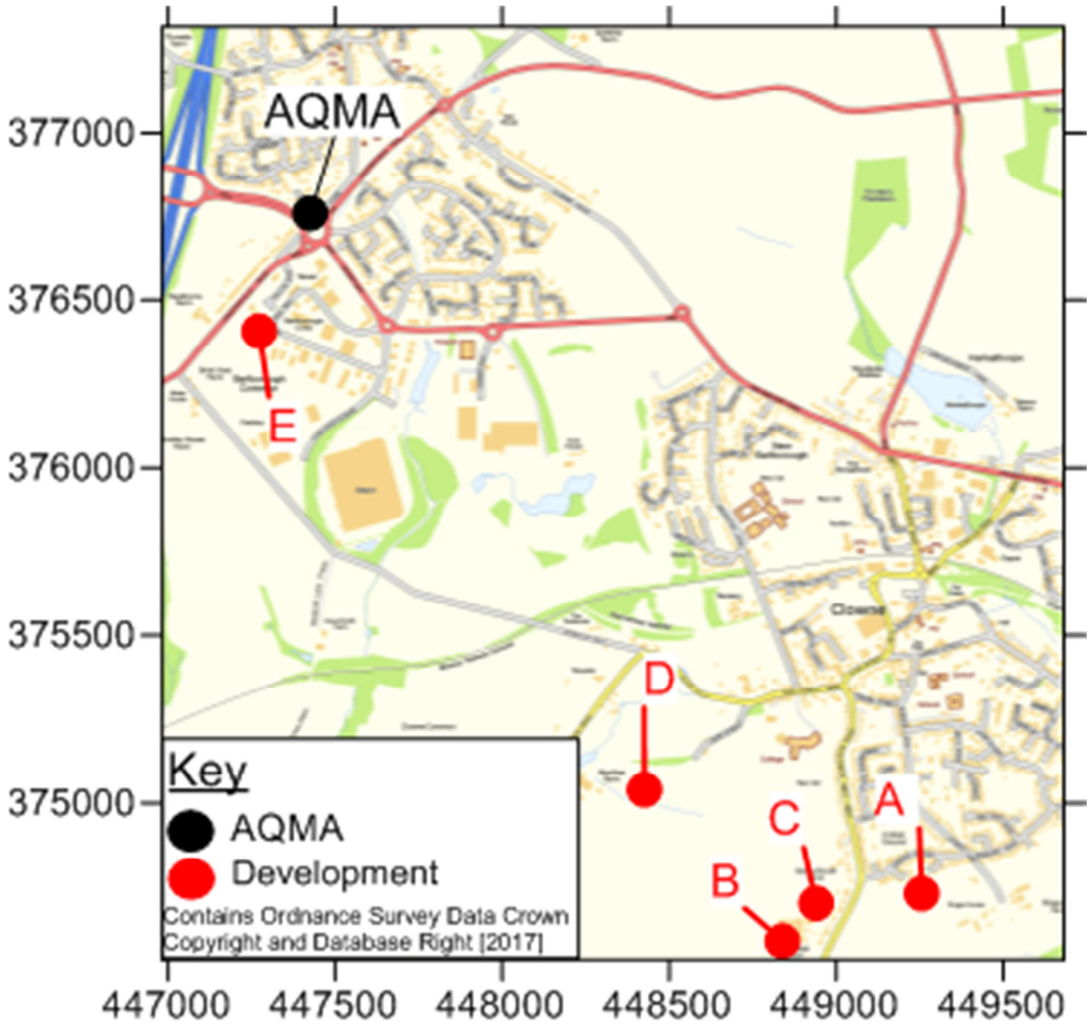
Figure 5 - Barlborough AQMA No 1, 2012 – 2017



Anticipated land use changes and proposed development in the area are identified in Figure 6. Briefly these consist of the following:

- (A) Erection of up to 100 dwellings on land to the South Of Ramper Avenue And Between Mansfield Road And Ringer Lane Clowne (CF- 17/00409/OUT);
- (B) Full application for the erection of 107 dwellings, on Land To The North Of Congreave House And To The South Of High Ash Farm, Mansfield Road (SP- 17/00405/FUL);
- (C) 15 dwellings on land West of Homelea and Tamarisk Mansfield Road, Clowne (PS - 17/00392/REM);
- (D) Residential development of up to 400 dwellings with the safeguarding of land for a primary school/nursery, a community hub to include a local shop, a large swathe of formal parkland, other public open space areas, associated landscaping, pedestrian/cycle links and vehicular access from Low Road and Cliff Hill on land North South And East Of Stanfree Farm, Low Road, Clowne (17/00417/OUT);
- (E) Proposed 1,950 sqm extension to the existing Xbite headquarters, including associated parking and landscaping works at Maison Court, Midland Way, Barlborough (TB - 17/00491/FUL).

Figure 6 - Barlborough AQMA No 1 and proposed local development sites



Although the developments A, B, C and D are some distance from the AQMA they are likely to result in an increase in traffic numbers close to the AQMA as traffic services the M1 motorway. Consideration should therefore be given to development traffic from the larger developments particularly A, B and D when assessing the requirement to revoke the Barlborough AQMA No 1. It is considered that the proposed Clowne Garden Village (application December 2017) could impact NO_2 concentrations in Barlborough AQMA No 1. At the time of writing the Clowne Garden Village application is yet to be approved, however should approval occur, it is recommended that some localised monitoring is commissioned to maintain a close check on the development's anticipated impact to the area.

3.3 Barlborough AQMA No 2

Barlborough AQMA No 2 comprises of five properties and was declared on 19 October 2007. This is shown in Figure 7.

Figure 7 - Barlborough AQMA No 2

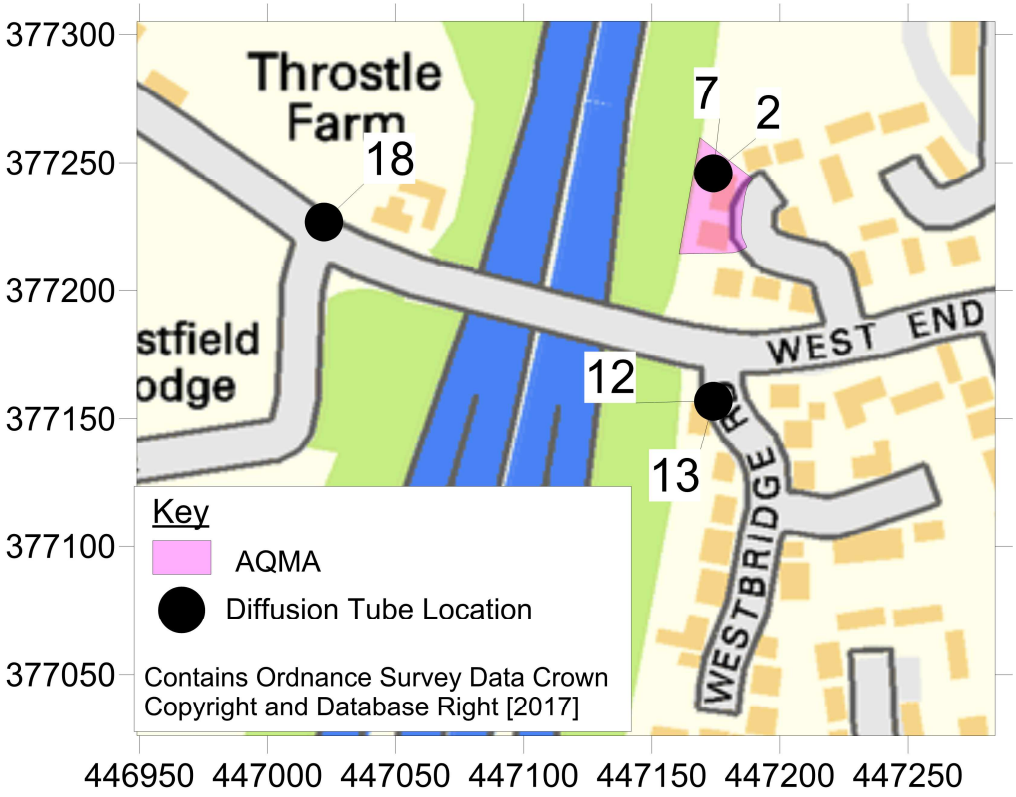


Table 6 – Diffusion Tube Monitoring for NO_2 within or close to Barlborough AQMA No 2

Site ID	Site Type	NO_2 Annual Mean Concetration µg/m3					
		2012	2013	2014	2015	2016	2017 [a]
2	Suburban	36.0	32.7	29.4	30.2	30.8	31.0
7	Suburban	36.0	34.4	30.1	30.2	-	-
12	Suburban	36.0	31.9	29.5	28.6	30.5	29.2
13	Suburban	36.0	32.6	29.3	29.2	-	-
18	Suburban	29.0	27.0	26.2	22.1	24.7	23.0

[a] Indicative data for 2017 using bias adjustment factor for 2016

Table 6 shows the NO_2 annual mean concentration data for the sites located within or close to Barlborough AQMA No 2. This AQMA comprises of five properties and is located close by the M1. The data shows a reduction in NO_2 levels across all sites since 2012.

Figure 8 further illustrates the NO_2 concentration five year trend associated with the secondary Barlborough AQMA area. All monitoring data recorded is distinctly below the AQO level, with an overall reduction in 2016, since 2012. Each of the valid diffusion tube data from 2016 signifies a slight increase in 2016 in comparison to the previous year's ASR data.

Figure 8 - Barlborough AQMA No 2, 2012 – 2017

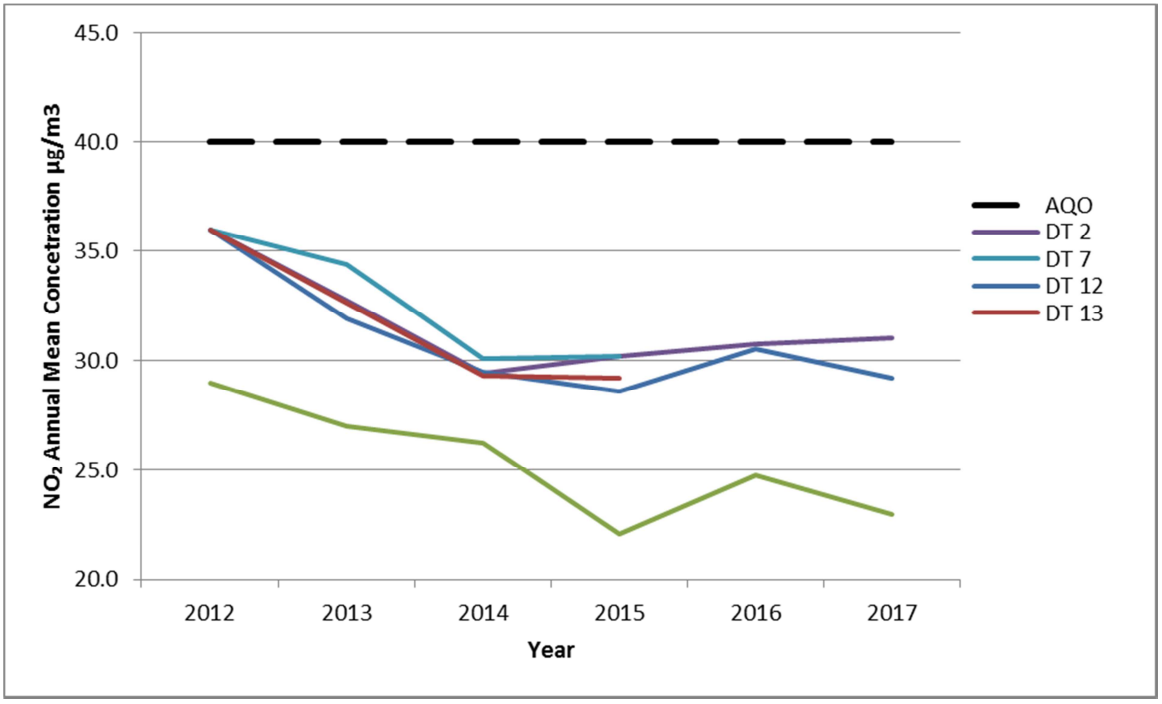
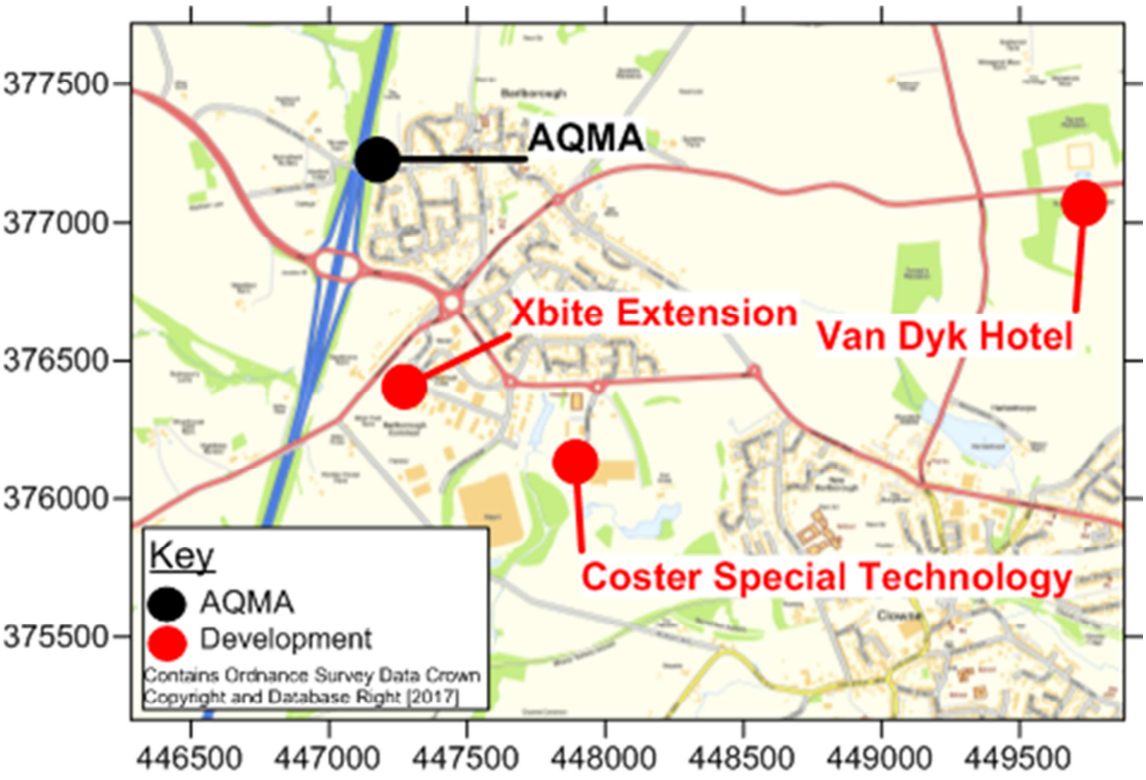


Figure 9 identifies a number of proposed developments which could impact NO_2 concentrations in the AQMA, details of which are as follows;

- Proposed 1,950 sqm extension to the existing Xbite headquarters, including associated parking and landscaping works at Maison Court, Midland Way, Barlborough (TB - 17/00491/FUL);
- Approval of Reserved Matters for Hotel Extension (Phase 1A – 54 beds plus function rooms) Van Dyk Hotel, Worksop Road, Clowne (TB - 17/00310/REM);
- Approval of reserved matters for the appearance of 52 dwellings at Hotel Van Dyk, Clowne (TB - 16/00623/REM);
- Extension to existing building (c.4500m²) granted permission for Coster Special Technology on Lindrick Way, Barlborough (TB - 17/00176/FUL).

Although the four identified developments are likely to increase the amount of road traffic in the local area, due to the size of the developments, this is not likely to impact NO_2 concentrations when considered in context of the existing traffic on the M1 motorway.

Figure 9 - Barlborough AQMA No 2 and proposed local development sites



3.4 M1 motorway conversion to smart motorway

In 2015 the M1 motorway was converted into a 4-lane smart motorway, which could lead to a reduction in NO_2 concentrations levels close to the motorway in the long term. The smart motorway conversion was completed in April 2016 and the conclusion from the 2017 Annual Status Report Appraisal[6] recognises that the NO_2 reductions at all three AQMAs were not due to temporary restriction during the smart motorway conversion but longer term trends which continued to be observed following the motorway conversion. Table A1 details the 12 month diffusion tube data covering the smart motorway introduction from April 2016 – March 2017, which maintains a steady trend across the data following the previous years as identified in Table 4, Table 5 and Table 6.

The reported 2017 exceedance and increases in NO_2 levels at the South Normanton AQMA, is likely due to the traffic dense location of the four carriageway M1 location. This suggests that this AQMA must remain in order to observe any future exceedences.

[6] ASR17-003, Bolsover District Council ASR Appraisal (June 2017)

4 Conclusion

Bureau Veritas was appointed by Bolsover District Council (BDC) to undertake analysis of monitoring data and local development information surrounding the three long standing Air Quality Management Areas (AQMAs) declared within the borough, with a view to informing the proposed revocation of the AQMAs. Defra has further supported the recommendation to consider revocation within the appraisal of the 2017 ASR.

It is advised by Bureau Veritas that, following the 2016 update of the LAQM technical and policy guidance, it is possible to apply for revocation of the AQMAs through analysis of existing monitoring data and local development information alone.

4.1 South Normanton AQMA

Since two reported exceedences in 2012, NO_2 concentrations at all sites in or near to the South Normanton AQMA have demonstrated a decline in NO_2 concentrations until 2017, when one exceedance and three increases were observed.

Four proposed local developments were identified which could impact road traffic within the AQMA but these were all developments of less than 50 residential units, apart from an 80 bed hotel. These developments are not likely to cause a significant change in traffic figures at or near to the AQMA when considered alongside the present traffic volume on the M1 motorway. It is therefore considered that the South Normanton AQMA should be maintained, as an indicative exceedence of the annual mean AQO was evident in 2017, together with increases in NO_2 annual mean concentrations at most of the diffustion tube locations within the AQMA. The continued monitoring would furthermore provide long term data from the smart motorway conversion.

4.2 Barlborough AQMA No 1

Since 2012 the maximum annual mean NO_2 concentration recorded within, or near to, the Barlborough AQMA No 1 is 34.0µg/m^3. Indicative results for the 2017 monitoring found that concentrations at all tubes were no higher than 29.6µg/m^3. Since 2012 NO_2 concentrations at all sites within, or near to, the Barlborough AQMA No 1 have demonstrated a general decline in NO_2 concentrations.

Five proposed local developments were identified which could impact road traffic within the AQMA, several of these developments were of a substantial size and could cause an increase in NO_2 concentrations within the AQMA. This is particularly true for development D comprising of 400 residential units. The application is currently only an outline application and it is suggested an air quality assessment is undertaken when the full application is submitted for the development.

It is therefore considered that the Barlborough AQMA No 1 should be revoked as no exceedences of the annual mean AQO have been observed since 2012, and in 2017 indicative annual mean NO_2

concentrations were observed to be less than 75% of the AQO at diffusion tube sites both located within and close to the AQMA. Upon revocation consideration should be given to reducing the amount of diffusion tube monitoring which is undertaken, particularly decommissioning at site 11. Despite the indicative 2017 annual mean NO_2 concentration being recorded at less than 75% of the AQO within the AQMA it is advised that diffusion tube monitoring is continued at triplicate site 14/23/24 in order to monitor any impacts from the identified proposed developments (particularly application D for the development of 400 dwellings) or the M1 motorway's conversion to a smart motorway.

4.3 Barlborough AQMA No 2

Since 2012 the maximum annual mean NO_2 concentration recorded within, or near to, the Barlborough AQMA No 2 is 36.0µg/m^3. Indicative results for the 2017 monitoring found that concentrations at all tubes were no higher than 31.0µg/m^3. Since 2012 NO_2 concentrations at all sites within, or near to, the Barlborough AQMA No 2 have demonstrated a decline in NO_2 concentrations.

Four proposed local developments were identified which could impact road traffic within the AQMA. These developments are not likely to cause a significant change in traffic figures at or near to the AQMA due to their size when considered in comparison to present traffic flows on the M1 motorway.

It is therefore considered that the Barlborough AQMA No 2 should be revoked as no exceedences of the annual mean AQO have been observed between 2012 and 2017. Upon revocation consideration should be given to reducing the amount of diffusion tube monitoring which is undertaken, particularly decommissioning tubes at site 18. Despite the indicative 2017 annual mean being recorded at no more than 31.0µg/m^3 within the AQMA, it is advised that diffusion tube monitoring is continued at duplicate site 2/7 in order to monitor any impacts from the identified proposed or the M1 motorway's conversion to a smart motorway.

Appendix A: Diffusion Tube Data

Table A1 - NO_2 Diffusion Tube Data following conversion of M1 motorway to a smart motorway

Location	Site ID	2016									2017												
		A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	Mean
Market Place, Bolsover	1	25.8	N	33.6	N	N	27.7	N	N	N	42.5	34.6	34.8	28.2	22.8	22.7	23.2	25.5	25.2	29.2	33.3	33.4	29.5
25 Orchard Close, Barlborough	2	23.8	27.4	27.8	33.3	25.7	29.7	26.9	N	36.9	39.1	30.7	29.5	28.7	22.3	27.2	29.4	33.6	23.3	33.5	38.3	32.6	30.0
Discontinued	7																						
Thomas College House, Bolsover	3	6.3	9.6	9.6	7.5	7.4	N	N	18.8	23.6	24.4	18.2	14.9	9.3	9.6	7.9	9.3	10.3	11.4	13.9	15.5	17.3	12.9
27 West Street, Doe Lea	4	13.7	15.4	14.6	12.8	12.3	16.7	17.6	24.7	30.3	31.2	21.6	17.9	15.5	11.9	12.4	13.6	16.2	16.5	18.1	24.3	22.7	18.1
1 Carter Lane East, South Normanton	5	30.0	30.6	30.2	39.0	30.1	34.1	27.8	39.3	43.0	47.9	42.9	38.3	35.3	29.2	33.8	32.4	40.2	35.1	39.1	45.7	39.3	
1 Carter Lane East, South Normanton	26	31.7	31.7	28.2	38.5	30.1	35.3	29.7	38.4	44.2	45.9	41.0	37.6	38.9	27.7	32.7	34.2	37.3	37.3	43.2	47.4	40.3	36.6
1 Carter Lane East, South normanton	27	34.0	30.1	28.7	35.0	31.5	35.5	28.2	41.7	45.9	50.3	37.3	33.3	41.5	29.5	33.9	33.9	36.4	36.9	40.8	45.3	40.7	
29 Brookhill Lane, Pinxton	6	31.8	28.4	35.6	15.8	20.2	28.7	40.7	37.2	N	39.9		32.7	28.0	31.0	21.7	27.8	23.0	27.4	24.9	35.7	31.0	29.5
2 Paddocks Close, Pinxton	8	26.6	28.6	32.2	16.6	18.3	27.1	38.3	37.1	31.8	33.3	29.4	27.9	22.5	24.9	19.2	21.0	21.6	24.2	22.2	27.5	26.9	26.5
Queens Close, Hodthorpe	9	13.0	10.3	9.0	8.3	6.5	11.7	13.3	18.6	22.2	23.9	17.2	11.9	10.1	9.0	7.8		8.9	11.8	13.1	15.3	17.1	12.9
57 Carter Lane West, South Normanton	10	22.8	30.5	32.1	15.6	18.3	24.0	38.2	33.3	44.3	36.2	37.8	27.0	17.5	30.3	22.7	20.1	17.9	21.6	20.1	22.8	25.0	26.6
16 Chesterfield Rd, Barlborough	11	20.9	21.0	23.8	18.7	21.2	23.5	30.5	32.2	35.2	40.1	30.4	28.5	20.8	23.5	18.3	19.3	21.3	21.4	21.9	25.0	27.9	25.0
2A Westbridge Rd, Barlborough	12	30.0	23.7	25.7	24.7	21.2	27.4	28.3	37.1	41.3	37.1	38.1	32.9	27.1	19.0	23.5	22.9	26.6	27.0	30.8	38.5	24.0	28.9
Discontinued	13																						
14 Chesterfield Rd, Barlborough	14	22.9	21.4	21.0	26.4	N	27.9	23.6	33.1	38.1	39.0	31.2	32.3	23.7	20.4	21.6	23.0	27.1	26.7	27.3	33.2	29.5	
14 Chesterfield Rd, Barlborough	23	22.6	23.8	22.5	26.4	23.2	N	25.2	35.3	41.1	40.5	34.3	31.1	27.2	22.1	24.7	22.7	28.4	28.8	29.2	36.5	33.8	28.4
14 Chesterfield Rd, Barlborough	24	22.0	21.1	22.5	27.0	25.2	26.3	25.0	32.0	41.5	44.2	33.0	29.3	26.6	23.1	26.3	25.1	28.6	26.0	32.1	34.9	30.1	
3 Carter Lane East South Normanton	15	31.2	31.8	28.8	35.7	33.5	35.5	29.7	37.6	34.7	47.3	39.9	43.9	47.5	28.4	32.9	35.7	38.6	37.4	41.5	54.9	44.4	37.7
Woodland Grove, Barlborough	16	19.5	22.3	21.7	21.7	18.4	26.2	23.6	35.2	39.2	37.9	30.0	26.1	21.0	19.9	21.1		24.1	22.6	28.0	32.0	30.9	26.1
36 Bowdon Avenue, Barlborough	17	23.1	25.5	19.5	26.7	18.3	27.1	22.8	35.7	41.0	42.6	30.4	29.6	24.1	19.6	24.9	23.5	27.2	25.6	28.3	35.7	30.9	27.7
Sheffield Road, Barlborough	18	17.7	19.4	20.0	N	15.1	24.6	25.9	30.0	37.3	33.9	32.0	28.2	15.1		14.8	15.8		20.0	20.8		24.1	23.2
California Lane, Barlborough	19	17.5	17.3	16.5	16.3	12.9	21.7	20.7	29.3	34.4	33.5	22.9	20.8	18.0	14.2	15.5	15.1	16.8	17.0	20.1	26.1	26.2	20.6
o/s 17 Carter Lane East, South Normanton	20	33.2	29.1	26.2	34.2	29.9	33.6	30.0	41.2	44.4	47.7	40.6	37.9	38.6	25.1	34.3	32.5	36.5	35.2	39.3	39.2	38.7	35.6

Location	Site ID	2016									2017												
		A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	Mean
31 Carter Lane East, South Normanton	**21**	24.0	22.1	24.0	25.3	19.4	26.9	22.3	35.7	38.7	37.7	33.1	30.0	28.0	22.0	23.2	24.1	26.1	25.9	28.9	31.7	29.9	27.6
37 Berristow Place, South Normanton	**22**	18.2	20.0	20.2	24.3	21.9	24.5	23.6	33.2	39.8	41.4	33.0	26.4	20.1	19.2	20.0	20.4	24.3	23.9	29.9	29.2	33.3	26.0
o/s Travellers Site, Blackwell	**25**	29.6	26.6	28.8	28.2	22.8	31.3	29.2	36.3	43.1		32.4	32.2	30.5	22.0	24.2	27.4	32.1	29.6	33.0	41.5	34.4	30.8
2 The Hill Glapwell	**28**	22.6	23.0	22.7	18.7	18.3	23.0	29.8	34.5	35.1	39.1	27.6	24.4	20.9	2.8	19.6		16.1	16.8	18.5	23.3	23.3	23.0
198 The Hill, Glapwell	**29**	17.0	14.1	14.6	16.2	14.5	18.4	17.7	25.4	31.6	36.1	27.7	21.7	16.3	14.9	16.3	14.9	16.5	15.0	20.2	20.8	25.3	19.8
4A Barlborough Rd, Clowne	**30**	36.0	31.7	39.7	29.0	27.8	37.8	42.2	49.1	45.0	52.1	39.3	34.0	35.3	34.9	29.4	29.9	31.5	37.0	36.7	39.2	41.4	37.1

Appendix B: Planning Application Data

Table B1 - Planning applications considered

Planning Application Reference	AQMA	Description
17/00114/FUL	South Normanton	Residential development for 10 two storey dwellings with associated parking spaces and landscaping, Council Depot at South Normanton
17/00148/OUT	South Normanton	Residential development of up to 36 dwellings at Thornhill Drive, South Normanton
16/00510/FUL	South Normanton	Residential development comprising 30no 2-bedroom dwellings and 5no 3-bedroom dwellings Jacques Brickyard, South Normanton
17/00499/OUT & 17/00498/FUL	South Normanton	80 bed hotel; 7,000 square feet of A3 restaurant/cafe; c.150,000 square feet of A1 retail; c.350,000 square feet of industrial buildings on Land To The North And West Of Berristow Farm, Mansfield Road, South Normanton
17/00409/OUT	Barlborough No 1	Erection of up to 100 dwellings on land to the South Of Ramper Avenue And Between Mansfield Road And Ringer Lane Clowne
17/00405/FUL	Barlborough No 1	Full application for the erection of 107 dwellings, on Land To The North Of Congreave House And To The South Of High Ash Farm, Mansfield Road
17/00392/REM	Barlborough No 1	15 dwellings on land West of Homelea and Tamarisk Mansfield Road, Clowne
17/00417/OUT	Barlborough No 1	Residential development of up to 400 dwellings with the safeguarding of land for a primary school/nursery, a community hub to include a local shop, a large swathe of formal parkland, other public open space areas, associated landscaping, pedestrian/cycle links and vehicular access from Low Road and Cliff Hill on land North South And East Of Stanfree Farm, Low Road, Clowne
09/00370/OUTMAJ	Barlborough No 1	December 2017 application of Clowne Garden village; over 1800 houses on the north side of Clowne/Barlborough. Former Barlborough landfill and associated land
17/00491/FUL	Barlborough No 1 & No 2	Proposed 1,950 sqm extension to the existing Xbite headquarters, including associated parking and landscaping works at Maison Court, Midland Way, Barlborough
17/00310/REM	Barlborough No 2	Approval of Reserved Matters for Hotel Extension (Phase 1A – 54 beds plus function rooms) Van Dyk Hotel, Worksop Road, Clowne
16/00623/REM	Barlborough No 2	Approval of reserved matters for the appearance of 52 dwellings at Hotel Van Dyk, Clowne
17/00176/FUL	Barlborough No 2	Extension to existing building (c.4500m²) granted permission for Coster Special Technology on Lindrick Way, Barlborough

Planning Application Reference	AQMA	Description
17/00279/SCREEN	All three AQMAs	Proposed residential-led mixed-use development of circa 450 dwellings, up to 6 hectares of employment, convenience retail store, railway station parking and access improvements, new local public open space, drainage and landscaping, Whitwell Tip And Surrounding Land, Southfield Lane, Whitwell