

2015 Air Quality Updating and  
Screening Assessment for  
*Broxtowe Borough Council*

In fulfillment of Part IV of the  
Environment Act 1995  
Local Air Quality Management

July 2015

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## Executive Summary

This report fulfils the requirements of the Local Air Quality management process as set out in Part IV of the Environment Act 1995, the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents. All local authorities are required to regularly review and assess air quality in their areas, and to determine whether or not specified air quality objectives are likely to be achieved.

The Update and Screening Assessment has considered new monitoring results, and whether there have been significant changes in road traffic, other transport, industrial processes, and commercial and domestic sources of pollution since the last Review and Assessment report.

This report provides an update with respect to air quality issues within the Borough of Broxtowe over the year 2014. During 2014, air quality was measured using non-automatic monitoring at a number of sites, primarily monitoring emissions from vehicles utilising the M1 motorway.

The annual mean air quality objective for nitrogen dioxide is  $40\mu\text{g}/\text{m}^3$ . The Air Quality Management Area has continued to meet the requirements for air quality and all non-automatic monitoring has indicated that Broxtowe is meeting the requirements of the Air Quality Objective.

No new or newly identified local developments which may have an impact on air quality within the Local Authority area have been approved.

Monitoring in the remaining Air Quality Management Areas (AQMA 1 and AQMA 4) continues to ensure that areas with the highest concentrations and relevant exposure are assessed. This will identify whether levels continue to fall below the objective and if this is sustained for several years, whether revoking the remaining AQMA's may be appropriate.

The next report by Broxtowe will be a Progress Report in 2016.

The conclusion of this report is that the concentration levels outside of the AQMA's are, with the exception of one location which exceeded the objective due to prolonged traffic congestion caused by the on-going tram works, below the objectives at relevant locations therefore there is no need to proceed to a Detailed Assessment.

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# **1 Introduction**

## **1.1 Description of Local Authority Area**

The Borough of Broxtowe is located in the County of Nottinghamshire within the East Midlands of England. It covers an administrative area of 80Km<sup>2</sup> and in 2001 was home to a population of 108,700 persons, that represents 0.22% of that of England and 0.18% of the population of the entire United Kingdom.

The Borough of Broxtowe lies to the west of the City of Nottingham and is bounded by the River Trent on the south and the River Erewash on the west. There are four main towns Beeston, Stapleford, Kimberley and Eastwood.

There is a wide choice of employment, housing amenities and countryside which makes Broxtowe a very pleasant place to live and work. Nearly two thirds of the land in Broxtowe is open countryside with a number of areas noted for their particular charm, and preserved as conservation areas.

Housing varies from 19th century terrace cottages to modern housing schemes and purpose-built accommodation for the young and elderly. Industry offers employment ranging from large national companies such as Boots and the Royal Mail to a substantial number of industrial and commercial businesses across a wide range of services, including a large Ikea retail park near Junction 26 of the M1.

Broxtowe also has good access to the North and South of England with the M1 Motorway going through the borough.

## **1.2 Purpose of Report**

This report fulfils the requirements of the Local Air Quality Management process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents. The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where exceedences are

considered likely, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives.

The objective of this Updating and Screening Assessment is to identify any matters that have changed which may lead to risk of an air quality objective being exceeded. A checklist approach and screening tools are used to identify significant new sources or changes and whether there is a need for a Detailed Assessment. The USA report should provide an update of any outstanding information requested previously in Review and Assessment reports.

### 1.3 Air Quality Objectives

The air quality objectives applicable to LAQM in England are set out in the Air Quality (England) Regulations 2000 (SI 928), The Air Quality (England) (Amendment) Regulations 2002 (SI 3043), and are shown in Table 1.1. This table shows the objectives in units of microgrammes per cubic metre  $\mu\text{g}/\text{m}^3$  (milligrammes per cubic metre,  $\text{mg}/\text{m}^3$  for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

**Table 1.1 Air Quality Objectives included in Regulations for the purpose of LAQM in England**

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
	5.00 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
Carbon monoxide	10.0 $\text{mg}/\text{m}^3$	Running 8-hour mean	31.12.2003
Lead	0.5 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
	0.25 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2008
Nitrogen dioxide	200 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005

	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2005
<b>Particles (PM<sub>10</sub>) (gravimetric)</b>	50 $\mu\text{g}/\text{m}^3$ , not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
<b>Sulphur dioxide</b>	350 $\mu\text{g}/\text{m}^3$ , not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 $\mu\text{g}/\text{m}^3$ , not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 $\mu\text{g}/\text{m}^3$ , not to be exceeded more than 35 times a year	15-minute mean	31.12.2005



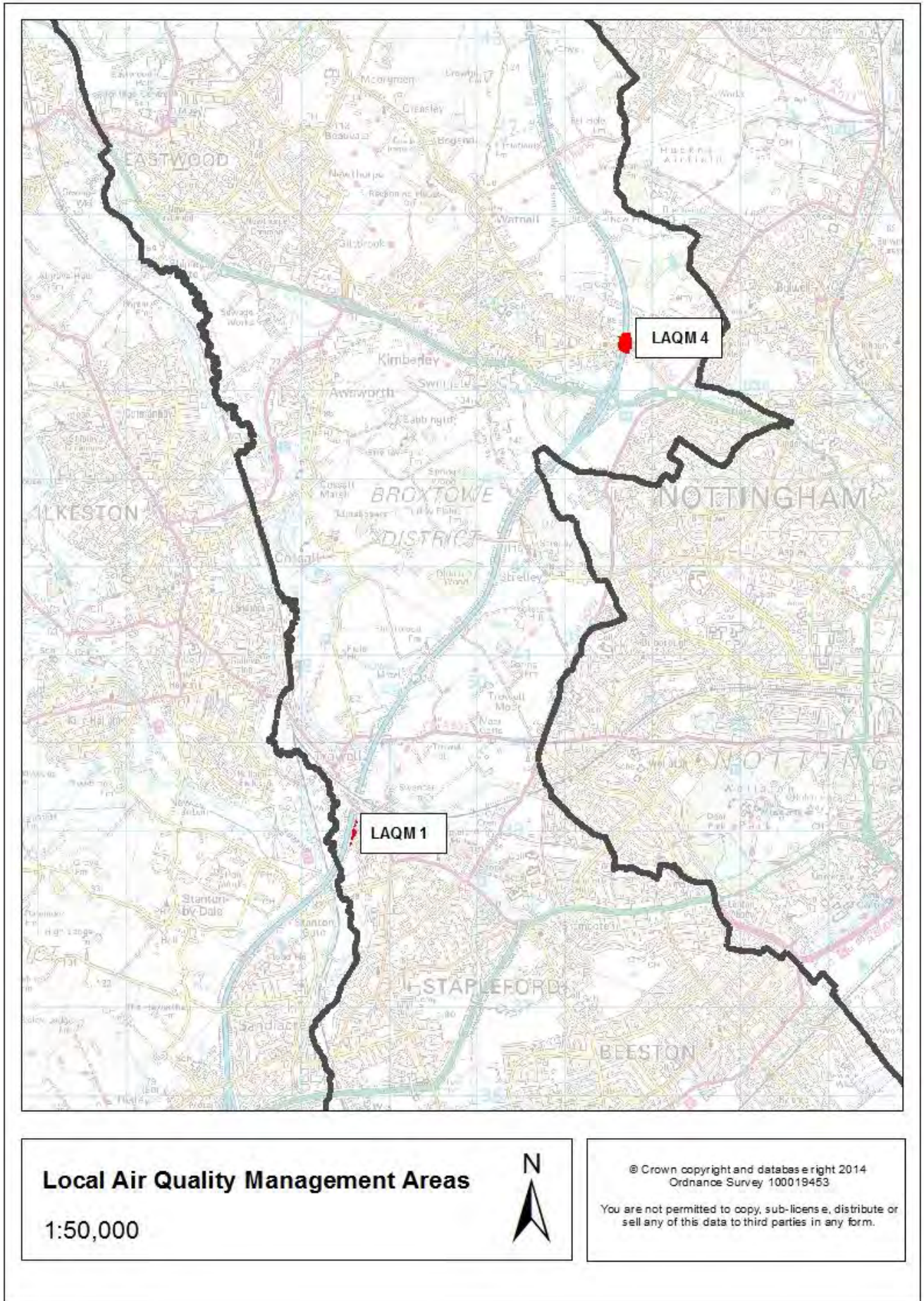
## 1.4 Summary of Previous Review and Assessments

Report	Conclusions/Actions
2003 Update and Screening Assessment	Further monitoring for NO <sub>2</sub> and PM <sub>10</sub> and modelling for NO <sub>2</sub> at locations close to the M1 and Nuthall roundabout to characterise exposure at receptors. Locations included Iona drive, Trowell, Trowell Services, Nuthall roundabout and the crossing of the M1 by A609, A6007 and B600.
2005 Detailed Assessment	The results of continuous monitoring and verified modelling of NO <sub>2</sub> identified a significant risk of exceedence of the UK annual average objective for NO <sub>2</sub> in 2005. PM <sub>10</sub> was not considered likely to be exceeded.
2006 Progress Report and Update and Screening Assessment	Ongoing Monitoring for NO <sub>2</sub> . Four Air Quality Management Areas declared.
2007 Progress Report	Continued Monitoring for NO <sub>2</sub>
2008 Progress Report	Further monitoring and Modelling for NO <sub>2</sub> .
2009 Update and Screening Assessment	Recommended Detailed Assessment to consider revocation of some of the Air Quality Management Areas for NO <sub>2</sub> due to improvements in air quality.
2010 Progress report and Detailed Assessment	Conclusion not to proceed to detailed assessment for any other pollutants and recommend Revocation of two Air Quality Management Areas for NO <sub>2</sub> .
2011 Progress Report	Continue to Monitor NO <sub>2</sub> data in the Air Quality Management Areas. Review the location of the diffusion tubes to better reflect the areas/receptors of concern.
2012 Update and Screening Assessment	Conclusion not to proceed to detailed assessment for any other pollutants. Location of several diffusion tubes

	changed to better reflect the areas/receptors of concern.
2013 Progress Report	Continued monitoring for NO <sub>2</sub> in the 2 Air Quality Management Areas (AQMAs 1 and 4) to ensure that areas with the highest concentrations and relevant exposure are assessed. Reported on concentration levels of NO <sub>2</sub> monitored at new locations within the borough. One exceedence outside of the AQMA areas due to prolonged road works which led to localised traffic congestion.
2014 Progress Report	Conclusion that the concentration levels of NO <sub>2</sub> outside of the AQMA are below the objectives at relevant locations. It was also planned to consider revoking AQMA 4 as the concentration levels of NO <sub>2</sub> have fallen below the objective for several years now (in line with the recommendations of the Detailed Assessment carried out in 2010), no need to proceed to a Detailed Assessment.

**Note: Air Quality Management Areas 2 and 3 were revoked in December 2010.  
(See Figures below)**

**Figure 1.1 Location of AQMA's**



**Local Air Quality Management Areas**

1:50,000

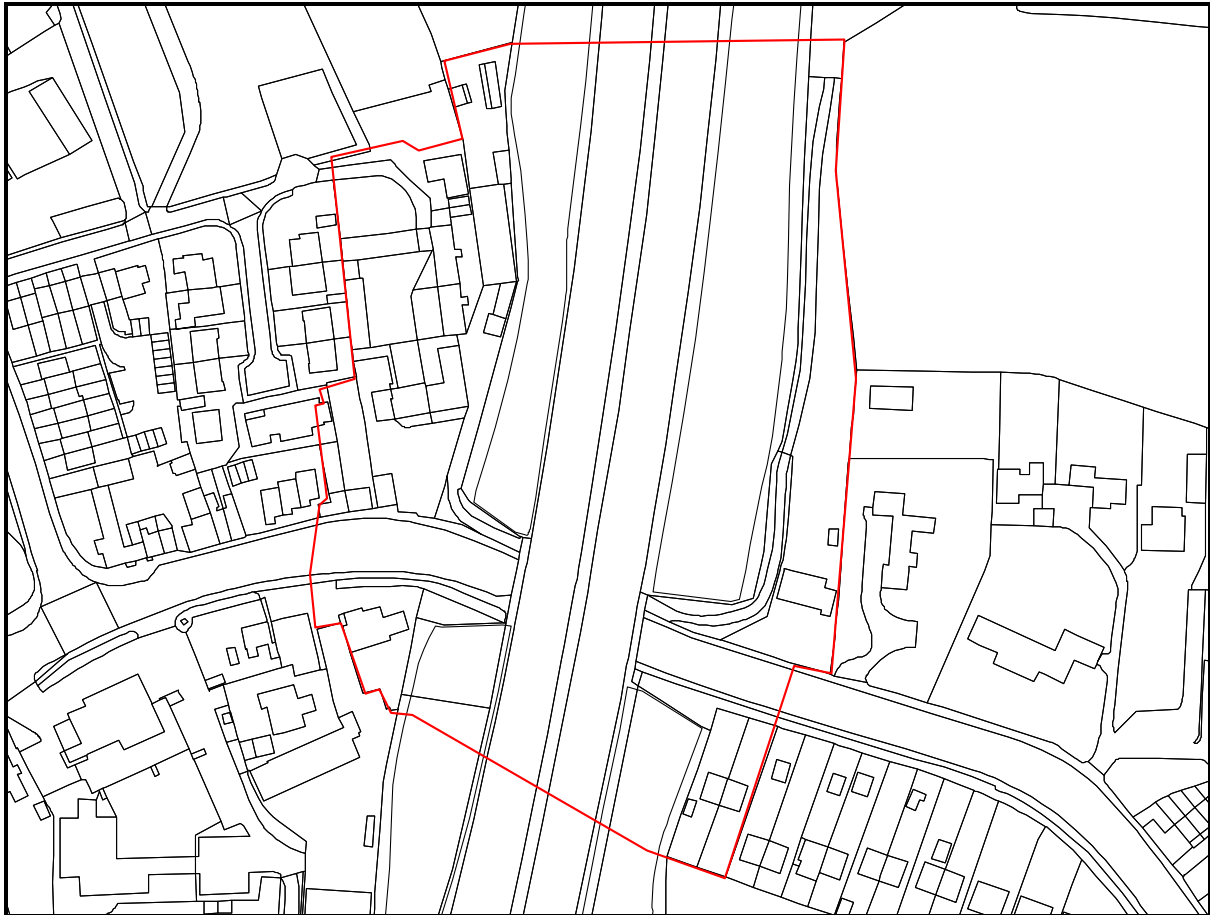


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**Figure 1.2 : AQMA 1 encompassing twenty properties on parts of Iona Drive and Tiree Close next to the M1 motorway and the Trowell Park estate (boundary marked in red)**



**Figure 1.3 : AQMA 4 encompassing fourteen properties next to the M1 motorway on parts of Nottingham Road, Nottingham, and Nottingham Road and Back Lane, Nuthall (boundary marked in red).**

## **2 New Monitoring Data**

### **2.1 Summary of Monitoring Undertaken**

#### **2.1.1 Automatic Monitoring Sites**

Broxtowe Borough Council does not utilise any automatic monitoring within the borough.

#### **2.1.2 Non-Automatic Monitoring Sites**

##### Nitrogen Dioxide (NO<sub>2</sub>) Diffusion Tube Monitoring

Broxtowe Borough Council participates in the UK NO<sub>2</sub> diffusion tube network and has diffusion tubes sited at a number of locations, primarily monitoring the M1 corridor. Tubes are exposed in and near the remain AQMA, also tubes have been continued to be located in AQMA 4 to ensure that revoking the AQMA is the correct decision.

Most of the tubes are placed on building facades of residential properties at sites mainly classified as „roadside“. The tubes are exposed for a month before being sent for laboratory analysis.

The diffusion tube location details can be found in the tables below.

See Appendix A for:

- Details of the tube type and the laboratory that supplies and analyses the tubes
- Details of the bias adjustment factor that has been applied to the annual mean NO<sub>2</sub> diffusion tube data
- 

Details of diffusion tube QA/QC  
Nitrogen Dioxide (NO<sub>2</sub>) Diffusion Tube Monitoring

Table 2.1 Details of Non-Automatic Monitoring Sites

Site Name	Site Type	OS Grid Ref	Pollutants Monitored	In AQMA?	Relevant Exposure?	Distance to kerb of nearest road	Worst-case Location?
BX01*	R	SK 516445	NO <sub>2</sub>	N	Y (1m)	40m	Y
BX02	R	SK 485452	NO <sub>2</sub>	N	Y (1m)	5m <sup>^</sup>	Y
BX03	UB	SK 518353	NO <sub>2</sub>	N	Y (1m)	100m <sup>^</sup>	N
BX04	R	SK 505379	NO <sub>2</sub>	N	Y (1m)	1m <sup>^</sup>	Y
BX05*	R	SK 516445	NO <sub>2</sub>	N	Y (1m)	40m	Y
BX07	R	SK 507343	NO <sub>2</sub>	N	Y (1m)	5m <sup>^</sup>	Y
BX08	R	SK 484396	NO <sub>2</sub>	N	Y (1m)	5m	Y
BX09	R	SK 519443	NO <sub>2</sub>	N	N (40m)	1m <sup>^</sup>	Y
BX10	R	SK 458467	NO <sub>2</sub>	N	Y (1m)	5m <sup>^</sup>	Y
BX11	R	SK 485390	NO <sub>2</sub>	Y	Y (1m)	176m	Y
BX12	R	SK 488401	NO <sub>2</sub>	N	Y (1m)	85m	Y
BX13	R	SK 517444	NO <sub>2</sub>	Y	Y (1m)	25m	Y
BX14	R	SK 482443	NO <sub>2</sub>	N	Y(1m)	5m	Y
BX15	R	SK 504377	NO <sub>2</sub>	N	Y (1m)	5m	Y
BX16	R	SK 486386	NO <sub>2</sub>	N	Y (1m)	210m	Y
BX17	R	SK 488449	NO <sub>2</sub>	N	Y (1m)	5m <sup>^</sup>	Y
BX18	R	SK 499447	NO <sub>2</sub>	N	Y (1M)	5m <sup>^</sup>	Y
BX20	R	SK 504379	NO <sub>2</sub>	N	Y (1m)	1m <sup>^</sup>	Y
BX22	R	SK 522440	NO <sub>2</sub>	N	N (25m)	1m <sup>^</sup>	Y
BX23	UB	SK 526369	NO <sub>2</sub>	N	Y (1m)	20m <sup>^</sup>	N
BX24	R	SK 525372	NO <sub>2</sub>	N	Y (1m)	1m <sup>^</sup>	Y
BX25	R	SK 536375	NO <sub>2</sub>	N	Y (1m)	1m <sup>^</sup>	Y
BX29	R	SK 463469	NO <sub>2</sub>	N	N (10)	1m <sup>^</sup>	Y
BX30	R	SK 515445	NO <sub>2</sub>	N	Y (5m)	1m <sup>^</sup>	Y
BX31	R	SK 520381	NO <sub>2</sub>	N	Y (1m)	35m	Y
BX32	R	SK 487397	NO <sub>2</sub>	N	Y (1m)	40m	Y
BX33	R	SK 488401	NO <sub>2</sub>	N	Y (1m)	35m	Y



**NOTE:**

Broxtowe Borough Council has 2 co-located tubes throughout its network. Tubes that are co-located with another tube have been given a symbol next to the site name, using \*.

R = Roadside, UB = Urban Background

All distance to kerb to nearest road relate to the M1 which is the primary source of NO<sub>2</sub> throughout the borough unless indicated using ^ symbol.

## 2.2 Comparison of Monitoring Results with AQ Objectives

The 2014 results of the non-automatic monitoring undertaken by Broxtowe Borough Council are shown in Table 2.2. Comparison with the Air Quality Objective has been made and where the relevant Air Quality Objective has been exceeded, the figure is highlighted in bold.

### 2.2.1 Nitrogen Dioxide

#### Diffusion Tube Monitoring Data

**Table 2.2 Results of Nitrogen Dioxide Diffusion Tubes (Adjusted for bias)**

Site ID	Location	Within AQMA?	Data Capture 2014 % ^	Annual mean concentrations (µg/m <sup>3</sup> )		
				2012	2013	2014
BX01*	19 Nottm. Road, Nuthall	Y	100	31	33	29
BX02	560 Nottingham Road, Eastwood	N	100	31	28	27
BX03	Chilwell Olympia, Bypass Rd.	N	100	22	22	21
BX04	167 Derby Road, Bramcote	N	100	42	38	42
BX05*	19 Nottm. Road, Nuthall	Y	100	31	32	32
BX07	31 Hickton Drive Chilwell	N	100	25	27	26
BX08	Village Hall, Stapleford Road, Trowell	N	100	24	25	25
BX09	Nuthall Methodist Church, Nottingham Road	N	100	26	27	27
BX10	14 Great Northern Drive, Eastwood	N	100	22	24	21
BX11	15 Iona Drive, Trowell Park	Y	100	42	39	38

## Broxtowe Borough Council - England

BX12	71 Nottingham Road, Trowell	N	33.3	26	27	33
BX13	20 Nottm Road, Nuthall	Y	100	35	33	34
BX14	49 Main Street, Awsworth	N	100	20	21	21
BX15	9 Bembridge Court, Stapleford	N	100	31	32	32
BX16	18 Roehampton Drive Trowell Park Est.	N	100	24	25	22
BX17	15 Hayley Close, Kimberley	N	100	27	30	32
BX18	3 Newdigate Road, Kimberley	N	-	25	-	-
BX20	Opp. Sherwin Arms Derby Rd Bramcote	N	100	31	33	34
BX22	A610/B600 Island Nuthall	N	100	42	41	39
BX23	Broxtowe Council Offices, Beeston	N	100	22	22	23
BX24	113 Wollaton Road, Beeston	N	100	34	32	32
BX25	4 Lower Road, Beeston	N	-	33	39	-
BX29	15 Derby Road, Eastwood	N	-	44	-	-
BX30	Hama Medical Centre, Kimberley	N	-	37	-	-
BX31	170 Derby Road, Beeston	N	100	37	39	37
BX32	30 Derbyshire Ave, Trowell	N	100	29	33	30
BX33	81 Nottingham Road, Trowell	N	100	27	30	30

\* Co-located

**Broxtowe Borough Council's diffusion tube network shows only 1 exceedence of the annual mean objective of 40µg/m<sup>3</sup> during 2014:**

### **BX04 – 167 Derby Road, Bramcote**

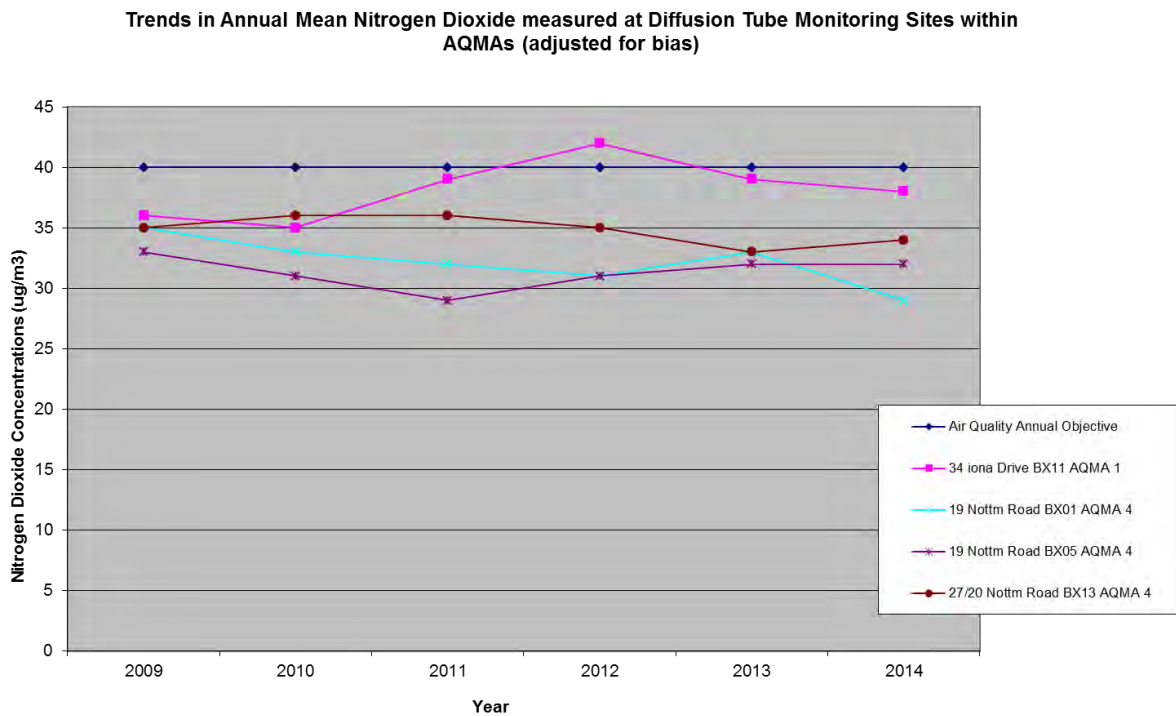
This site is a relatively new location for Broxtowe Borough Council, in use since 2012 when several of the diffusion tubes in the borough were relocated. The site was chosen to monitor NO<sub>2</sub> from vehicle emissions at the Bramcote roundabout on the A52 on one of the main routes through the borough to the M1 motorway. The annual average is only slightly in excess of the Air Quality Annual Objective for NO<sub>2</sub> of 40µg/m<sup>3</sup> and further monitoring in the current calendar year is predicting that the Annual objective will be met at this location. It is proposed to wait on the outcome of the current years monitoring before considering proceeding to a detailed assessment at this location. Particularly as the exceedence is so slight. Also it is worth noting that for several months during 2014 along the stretch of the A52 between the Bramcote and Priory roundabouts traffic has been periodically congested due to the on going tramworks in the area, whilst the tram network out of Nottingham is extended, which may also account for the exceedence.

**Table 2.3 Results of Nitrogen Dioxide Diffusion Tubes within all AQMA's (Adjusted for bias)**

Site ID	Location	Annual mean concentrations ( $\mu\text{g}/\text{m}^3$ )					
		2009	2010	2011	2012	2013	2014
BX11	AQMA 1	33	32	38	37	39	38
BX01	AQMA 4	35	33	32	31	33	29
BX05	AQMA 4	33	31	29	31	32	32
BX13	AQMA 4	36	35	36	35	33	34

All diffusion tubes within Air Quality Management Areas meet the requirements for the Air Quality Annual Objective for  $\text{NO}_2$  of  $40\mu\text{g}/\text{m}^3$ . Each Air Quality Management Area will now be considered in the chart below to show the trend over the previous 5 years.

**Figure 2.1 Trends in Annual Mean Nitrogen Dioxide Concentrations measured at Diffusion Tube Monitoring Sites.**



### **2.2.2 PM<sub>10</sub>**

Previous Update and Screening Assessments has shown there are no relevant sources of PM<sub>10</sub> within the borough. Subsequently, the Council does not monitor for this pollutant.

### **2.2.3 Sulphur Dioxide**

Previous Update and Screening Assessments has shown there are no relevant sources of Sulphur Dioxide within the borough. Subsequently, the Council does not monitor for this pollutant.

### **2.2.4 Benzene**

Previous Update and Screening Assessments has shown there are no relevant sources of Benzene within the borough. Subsequently, the Council does not monitor for this pollutant.

### **2.2.5 Other pollutants monitored**

There are no other pollutants monitored by Broxtowe Borough Council.

### **2.2.6 Summary of Compliance with Air Quality Strategy Objectives**

Broxtowe Borough Council has examined the results from monitoring in the borough. Concentrations outside of the AQMA are all below the objectives at relevant locations, with the exception of one result which it is thought is down to traffic congestion caused by works being carried out to extend the tram route, therefore there is no need to proceed to a Detailed Assessment.

### **3 Road Traffic Sources**

#### **3.1 Narrow Congested Streets with Residential Properties Close to the Kerb**

Broxtowe Borough Council confirms that there are no new/newly identified congested streets with a flow above 5,000 vehicles per day and residential properties close to the kerb, that have not been adequately considered in previous rounds of Review and Assessment.

#### **3.2 Busy Streets Where People May Spend 1-hour or More Close to Traffic**

In previous Review and Assessments busy street locations where people may regularly be for an hour or more were considered in detail. No new exposure in existing areas or exposure in new areas has been identified.

Broxtowe Borough Council confirms that there are no new/newly identified busy streets where people may spend 1 hour or more close to traffic.

#### **3.3 Roads with a High Flow of Buses and/or HGVs.**

Roads with high flow of buses / HGV"s have been considered in previous rounds of review and assessment. There are no roads with an increase greater than 20% buses / HGV"s in excess of 2,500 vehicles per day, where there is relevant exposure.

Broxtowe Borough Council confirms that there are no new/newly identified roads with high flows of buses/HDVs.

### **3.4 Junctions**

There are no new / newly identified busy junctions / roads as defined in LAQM.TG.(09).

Broxtowe Borough Council confirms that there are no new/newly identified busy junctions/busy roads.

### **3.5 New Roads Constructed or Proposed Since the Last Round of Review and Assessment**

Broxtowe Borough Council confirms that there are no new/proposed roads.

### **3.6 Roads with Significantly Changed Traffic Flows**

Broxtowe Borough Council confirms that there are no new/newly identified roads with significantly changed traffic flows.

### **3.7 Bus and Coach Stations**

Broxtowe Borough Council confirms that there are no relevant bus stations in the Local Authority area.

## 4 Other Transport Sources

### 4.1 Airports

Broxtowe Borough Council confirms that there are no airports in the Local Authority area.

### 4.2 Railways (Diesel and Steam Trains)

#### 4.2.1 Stationary Trains

Authorities are only required to undertake the assessment of railways in accordance with Section B.2 of Box 5.4 of LAQM.TG(09). There are no locations within Broxtowe that are regularly stationary for periods of 15 minutes or more where a relevant exposure exists.

Broxtowe Borough Council confirms that there are no locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.

#### 4.2.2 Moving Trains

Authorities are required to undertake an assessment if it is identified that sections of the track have a large number of movements of diesel locomotives. Whilst large number of movements is not defined by the guidance, DEFRA does provide a list of lines which is considered having a substantial number of diesel passenger trains per day. These lines do not travel through Broxtowe and no further assessment will be undertaken.

Broxtowe Borough Council confirms that there are no locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m.

### **4.3 Ports (Shipping)**

Broxtowe Borough Council confirms that there are no ports or shipping that meet the specified criteria within the Local Authority area.



## **5 Industrial Sources**

### **5.1 Industrial Installations**

#### **5.1.1 New or Proposed Installations for which an Air Quality Assessment has been Carried Out**

DEFRA guidance LAQM.TG(09) advises that authorities are only required to undertake an assessment if it is identified new or proposed installations for which an air quality assessment has been carried out. There have been no new or proposed installations for which an air quality assessment has been necessary since the previous Update and Screening Assessment (2009).

Broxtowe Borough Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

#### **5.1.2 Existing Installations where Emissions have Increased Substantially or New Relevant Exposure has been Introduced**

The guidance advised local authorities to consider any newly sources identified during previous rounds of Review and Assessment have experienced substantially increased emissions or received new relevant exposure in their vicinity. Substantial increase is considered to be more than 30%.

Broxtowe Borough Council confirms that there are no industrial installations with substantially increased emissions or new relevant exposure in their vicinity within its area or nearby in a neighbouring authority.

#### **5.1.3 New or Significantly Changed Installations with No Previous Air Quality Assessment**

Broxtowe Borough Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

## 5.2 Major Fuel (Petrol) Storage Depots

There are no major fuel (petrol) storage depots within the Local Authority area.

## 5.3 Petrol Stations

Petrol Stations were assessed in previous rounds of Review and Assessment and there are no new petrol stations that have an annual throughput greater than 2000m<sup>3</sup>.

Broxtowe Borough Council confirms that there are no petrol stations meeting the specified criteria.

## 5.4 Poultry Farms

DEFRA guidance LAQM.TG(09) advises local authorities to identify farms housing in excess of

- 400,000 birds if mechanically ventilated
- 200,000 birds if naturally ventilated
- 100,000 birds for any turkey unit

And whether there is relevant exposure within 100m of the poultry units.

Broxtowe Borough Council confirms that there are no poultry farms meeting the specified criteria.

## **6 Commercial and Domestic Sources**

### **6.1 Biomass Combustion – Individual Installations**

DEFRA guidance LAQM.TG(09) advises local authorities to identify plant burning biomass in 50kW to 20MW units. There are no biomass combustion plants within the area that meets this requirement.

Broxtowe Borough Council confirms that there are no biomass combustion plant in the Local Authority area.

### **6.2 Biomass Combustion – Combined Impacts**

Very limited information is available on small combustion installations, including domestic use of wood burners and solid fuel. Broxtowe Borough Council is of the opinion that the current level of biomass combustion is so low that it can be considered that there is no significant impact on air quality.

Broxtowe Borough Council has assessed the biomass combustion plant, and concluded that it will not be necessary to proceed to a Detailed Assessment.

### **6.3 Domestic Solid-Fuel Burning**

Domestic solid fuel use has been considered in previous Update and Screening Assessments. No areas with significant burning of solid fuel were identified and the majority of the Borough is a designated Smoke Control Area.

Broxtowe Borough Council confirms that there are no areas of significant domestic fuel use in the Local Authority area.

## **7 Fugitive or Uncontrolled Sources**

No locations where there are or are potential significant fugitive / uncontrolled dust/particulate matter sources have been identified.

Broxtowe Borough Council confirms that there are no potential sources of fugitive particulate matter emissions in the Local Authority area.

## **8 Conclusions and Proposed Actions**

### **8.1 Conclusions from New Monitoring Data**

The new Air Quality monitoring data details that during 2014, 1 incident of the prescribed standard for the annual mean of NO<sub>2</sub> was exceeded. This location is outside of the AQMA and there are sensitive receptors at this location, however the current (2015) years monitoring is indicating that the Air Quality Objective standard will be met. Also it is worth noting that for several months during 2014 along the stretch of the A52 between the Bramcote and Priory roundabouts traffic has been periodically congested due to the on going tramworks in the area, whilst the tram network out of Nottingham is extended, which may also account for the exceedence.

The air quality within the AQMA"s has been found to meet the prescribed standard.

Monitoring in the AQMA"s will continue to ensure compliance with AQ Standard.

The levels of NO<sub>2</sub> recorded in AQMA 1 has not dropped significantly enough for consideration to be given to revoking the AQMA in this area. Review of monitoring in AQMA 4 will be undertaken to identify if the reduction of NO<sub>2</sub> recorded is significant or sustained enough to revoke the AQMA for this area.

### **8.2 Conclusions from Assessment of Sources**

There have been no further new local developments which are likely to pose a significant risk to air quality.

### **8.3 Proposed Actions**

Broxtowe Borough Council proposes no further action as a result of the Updating and Screening Assessment. However the Authority will:

- continue to monitor in the AQMA.
- continue to monitor throughout the borough for trends in diffusion tube data.
- continue to focus on the actions identified within the Air Quality Action Plan.
- Submit a 2016 Air Quality Progress Report.

The Updating and Screening Assessment has not identified the need to proceed to a Detailed Assessment for any pollutants.



## 9 References

AEA Energy & Environment (Feb 2008). **Diffusion Tubes for Ambient NO<sub>2</sub> Monitoring : Practical Guidance for Laboratories and Users Issue 1a**

**Air Quality (England) Regulations 2008 (SI 928)**

Department for the Environment, Food and Rural Affairs (Feb 2009). **Local Air Quality Management Technical Guidance LAQM.TG(09).**

Department for the Environment, Food and Rural Affairs (2007). **The Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007**

**The Air Quality (England)(Amendment) Regulations 2002 (SI 3043)**

**The Pollution Prevention and Control Act 1999**

***Air Quality Reports; Broxtowe Borough Council***

Detailed Assessment (2005)

Detailed Assessment (2010)

Progress Report (2007)

Progress Report (2008)

Progress Report (2010)

Progress Report (2011)

Progress Report (2013)

Progress Report (2014)

Update and Screening Assessment (2003)

Update and Screening Assessment (2006)

Update and Screening Assessment (2009)

Updating and Screen Assessment (2012)

## Appendices

### Appendix A- Nitrogen Dioxide Diffusion Tube Adjustment Information

Broxtowe Borough Council's diffusion tubes are supplied and analysed by Gradko International, Hampshire. The tubes are prepared using a 20% solution of triethanolamine (TEA) in de-ionised water. The tubes are exposed for one month before being returned for laboratory analysis.

#### Diffusion Tube Bias Adjustment Factors

##### **2014 Figures**

The R&A Helpdesk Database 2014 bias adjustment factor for Gradko 20% TEA in water tubes = 0.91. This figure is the average of 16 studies and was taken from Spreadsheet Version Number: 03/15.

Diffusion tube precision was good for all 16 of the studies used to derive the national bias adjustment factor. Tube precision is categorised as "good" where the coefficient of variation (CV) of triplicate diffusion tubes for eight or more periods during the year is less than 20%, and the average CV of all monitoring periods is less than 10% (LAQM.TG(09)).

##### **2013 Figures**

The R&A Helpdesk Database 2013 bias adjustment factor for Gradko 20% TEA in water tubes = 0.95. This figure is the average of 24 studies and was taken from Spreadsheet Version Number: 03/14.

Diffusion tube precision was good for 23 of the 24 studies used to derive the national bias adjustment factor. Tube precision is categorised as "good" where the coefficient of variation (CV) of triplicate diffusion tubes for eight or more periods during the year is less than 20%, and the average CV of all monitoring periods is less than 10% (LAQM.TG(09)).

##### **2012 Figures**

The R&A Helpdesk Database 2012 bias adjustment factor for Gradko 20% TEA in water tubes = 0.94. This figure is the average of 40 studies and was taken from Spreadsheet Version Number: 06/13.

Diffusion tube precision was good for 37 of the 40 studies used to derive the national bias adjustment factor. Tube precision is categorised as "good" where the coefficient of variation (CV) of triplicate diffusion tubes for eight or more periods during the year



is less than 20%, and the average CV of all monitoring periods is less than 10% (LAQM.TG(09)).

### **2011 Figures**

The R&A Helpdesk Database 2011 bias adjustment factor for Gradko 20% TEA in water tubes = 0.89. This figure is the average of 26 studies and was taken from Spreadsheet Version Number: 03/12.

Diffusion tube precision was good for 22 of the 26 studies used to derive the national bias adjustment factor. Tube precision is categorised as “good” where the coefficient of variation (CV) of triplicate diffusion tubes for eight or more periods during the year is less than 20%, and the average CV of all monitoring periods is less than 10% (LAQM.TG(09)).

### **2010 Figures**

The R&A Helpdesk Database 2010 bias adjustment factor for Gradko 20% TEA in water tubes = 0.92. This figure is the average of 42 studies and was taken from Spreadsheet Version Number: 09/11.

Diffusion tube precision was good for 34 of the 42 studies used to derive the national bias adjustment factor. Tube precision is categorised as “good” where the coefficient of variation (CV) of triplicate diffusion tubes for eight or more periods during the year is less than 20%, and the average CV of all monitoring periods is less than 10% (LAQM.TG(09)).

### **2009 Figures**

The R&A Helpdesk Database 2008 bias adjustment factor for Gradko 20% TEA in water tubes = 0.90. This figure is the average of 33 studies and was taken from Spreadsheet Version Number: 03/10.

Diffusion tube precision was good for 25 of the 33 studies used to derive the national bias adjustment factor. Tube precision is categorised as “good” where the coefficient of variation (CV) of triplicate diffusion tubes for eight or more periods during the year is less than 20%, and the average CV of all monitoring periods is less than 10% (LAQM.TG(09)).

## **QA/QC Data for Non-Automatic Sites**

Gradko International (diffusion tube supplier and analyst) is UKAS accredited; is assessed annually for compliance to ISO 17025 and participates in other proficiency schemes.

Gradko International confirms that:

- Their procedures have been amended to follow the guidance issued on behalf of DEFRA (AWA Energy & Environment, Feb 2008) relating to the preparation,

extraction, analysis and calculation procedures for passive NO<sub>2</sub> diffusion tubes. And

- That most of these procedures were in force before the guidance was introduced and any amendments necessary in achieving compliance were minimal

Gradko International also participates in a number of QA/QC monitoring systems to demonstrate satisfactory performance:

- The Workplace Analysis Scheme for Proficiency (WASP) programme to ensure uniformity of data throughout the year. Only laboratories that are in the WASP scheme are used for analysing tubes from the National Nitrogen Dioxide Diffusion Tube Network.
- The monthly field inter-comparison exercise with other laboratories to enable assessment of bias and precision undertaken by AEA Energy & Environment

#### **An external QC scheme to check solutions run by AEA Energy & Environment**

#### **Choice of Tube Bias Adjustment Factors**

Only national Bias Adjustment Factors are available and these were the factors applied.

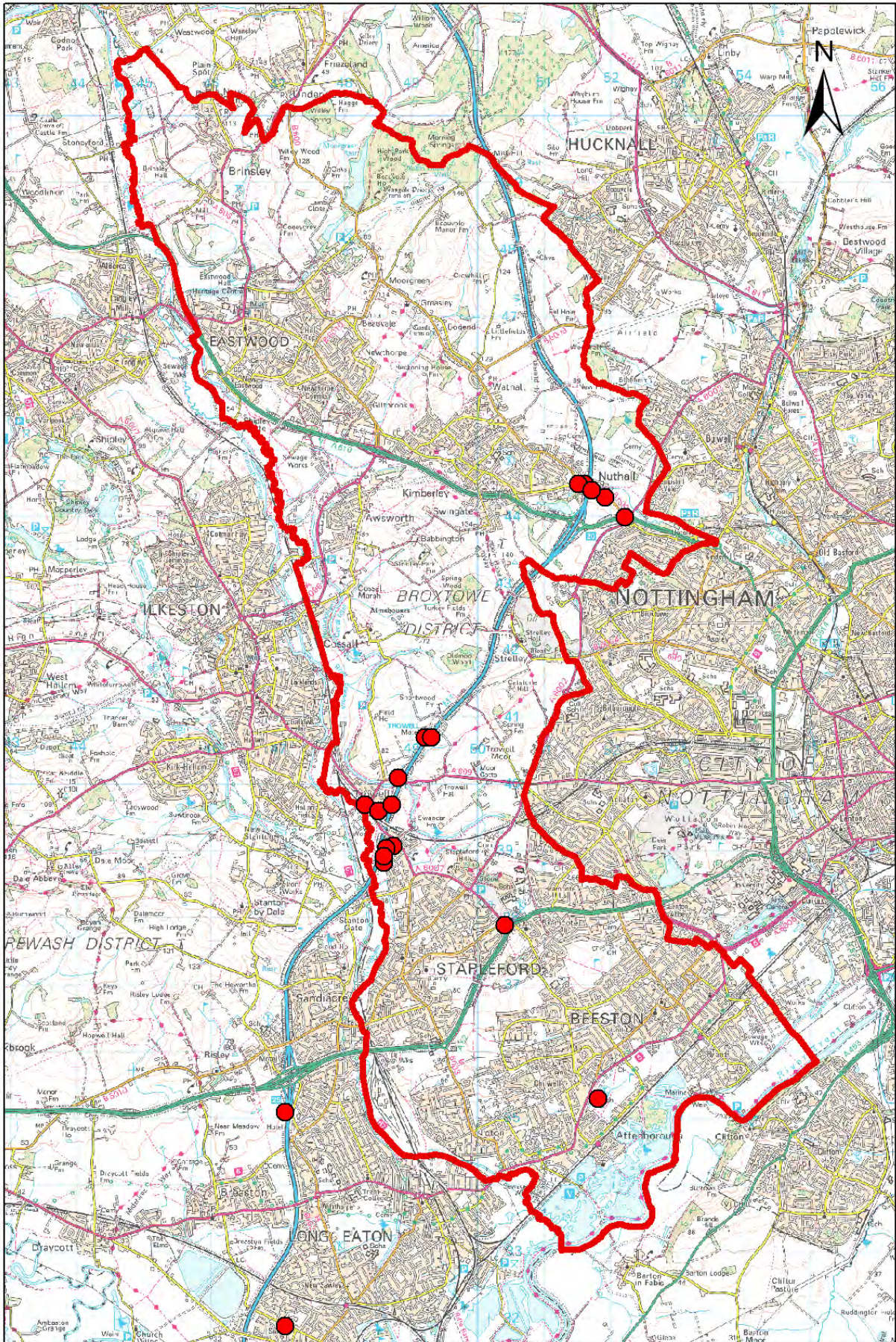


Figure A1 – Diffusion Tube Locations (Crown Copyright 2005 BROXTOWE BOROUGH COUNCIL LA100019453)