



2011 Air Quality Progress Report for Rushcliffe Borough Council

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

Date May 2011

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Report Reference number	2010/11 PR
Date	May 2011

Executive Summary

This report provides an update with respect to air quality issues within the borough of Rushcliffe over the year 2010 and the progress of implementation of the measures outlined in the Air Quality Action Plan (AQAP), published initially in May 2007 (updated 2009) as required by the Environment Act 1995. Part IV of the Environment Act 1995 places a statutory duty on local authorities to review and assess the air quality within their area and take account of Government Guidance when undertaking such work.

The AQAP contains a set of measures aimed at working toward ensuring the air quality in Rushcliffe meets the Air Quality Objectives set out in the National Air Quality Strategy due to excessive levels of Nitrogen Dioxide in air quality management areas (AQMA's) within the Borough.

Rushcliffe has two air quality management areas both of which have been declared due to traffic pollution and in particular due to excessive levels of the annual Nitrogen Dioxide above the air quality objective (AQO) level in certain areas. The areas covered by the AQMA's are the Trent Bridge/Radcliffe Road/Wilford lane areas and part of the A52 ring road up to the Nottingham Knight traffic island. Both of these areas are major traffic routes into/out of and around the Nottingham area and are controlled by partner organisations to Rushcliffe; namely, the Highways Agency and Nottinghamshire County Council.

This report includes consideration of new monitoring data and emissions sources assessed by Rushcliffe Borough Council over the 2010 period.

Rushcliffe has undertaken atmospheric pollution monitoring of particulate matter (PM10), NO₂/NO_x (chemi-luminescent monitoring) and NO₂ diffusion tube monitoring at 36 monitoring locations in 2010. The progress report's review of new monitoring data has shown that exceedences of Nitrogen Dioxide annual mean objective continue to occur within Rushcliffe's Air Quality Management Area 1 at certain locations that are relevant locations close to busy roads. In AQMA 2, all sites have been shown to be below the AQO for the second year running but only marginally below the annual objective of 40 micrograms. It is recommended to monitor further over 2011 before considering any steps to revoke the AQMA2 to establish that levels will not migrate above the objective again.

The exceedences in the AQMA1 relate to two sites that are consistently above the AQO for the annual mean. These two sites being the Trent House Flats and the Radcliffe Road site; both are on facades of residential premises. These two sites are only marginally above the AQO in 2010 but roadside levels are higher particularly around the Trent Bridge junction highlighted by the TBI tube. It is therefore important to ensure no new receptors are allowed to develop in this situation which may make achieving the AQO in the future more difficult or impossible without major re-design of road layouts.

The PM10 levels have been shown to be in compliance with the AQO and in this report a trend analysis has been undertaken which has shown PM10 levels falling over a 10 year period. As such the decision was taken to stop PM10 monitoring in AQMA1 and to move the monitor to a new site at Stragglethorpe Road/A52 junction which has been subject to a detailed assessment for high NO2 levels.

Due to proposed expansion of the Bingham area new monitoring sites have been established in Bingham to help determine the current NO2 levels around Kighill. This area is bottle neck for traffic crossing the railway at this point in Bingham.

The progress report concludes that no Detailed Assessment is required for benzene, 1, 3-butadiene, carbon monoxide, lead, particulates (PM₁₀), and sulphur dioxide.

Outside of the Air Quality Management Areas, there is one area of exceedences of the Nitrogen Dioxide annual mean objective at Holme House at the junction of the A52 and the Stragglethorpe Road, Radcliffe on Trent. Here a group of tubes are above or very close to the annual mean objective but below the hourly objective. Rushcliffe have completed a detailed assessment which has recommended the creation of further AQMA for the exceedence of the annual mean NO2 level. (see Detailed Assessment 2011 for further information).

The new monitoring data has not identified any exceedences of the hourly NO2 objective.

The AQAP through the LTP continues to implement a number of measures with the aim of reducing car usage and reducing the impact of road vehicles in and around the AQMA areas; the measures are however aimed at the commuters into and out of Nottingham as a whole and not just in and around the AQMA. The majority of the LTP targets are all rated green (Going strongly in the right direction) with three targets rated as orange (No clear trend/slowly going in the right direction, perhaps not fast enough to meet agreed targets). There are no targets shown red (going in the wrong direction).

The go ahead for the NET phase 2 is expected to have a positive effect on air quality once operational by reducing commuter traffic coming through routes used to access Trent Bridge within the Rushcliffe area. These benefits will however be a number of years away.

A comprehensive list of interventions undertaken to date and progress since the last R&A report by the Nottinghamshire County Council through The Local Transport Plan is shown in, Chapter 1.

Rushcliffe BC continues to work toward reducing its own impact on the air quality by introducing a number of measures such as remote working, good fleet management, energy efficiency measures and working toward the introduction of a travel plan for employees. Targets have now been put in place for a number of these measures within the climate change action plan and consequently this progress report has been updated with these target indicators. Also as part of Council operational changes the customer services for the Civic Centre will move from within the AQMA 1 to a shared location with the police in the West Bridgford town centre which is outside of the

AQMA. Consequently vehicle trips movements within the AQMA 1 to the civic centre will reduce as a consequence.

Only limited development has taken place in 2010 in Rushcliffe. The Sharphill development, which has been approved at planning appeal in the previous year has not seen any works started. This will see 1200 houses and other associated developments take place in Rushcliffe over a number of years. Air quality was fully considered in this application. It is not envisaged that in the short term there will be any impact on air quality. The site has mitigation measures in place for construction work and will have mitigation for air quality and climate change targets in place once complete. In addition due to changes in legislation and Government direction there is now less likely hood of larger developments being granted permissions to build.

The A46 duelling has been ongoing over 2010 with strong progress being made. The construction and operation of this road was fully considered at the consultation stage and through the public enquiry and operationally is not expected to result in poorer air quality to local residents.

The next report due by Rushcliffe will be a USA 2012 and a further assessment should the detailed assessment for Holme House in 2011 be accepted by Defra.

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1 Introduction

1.1 Description of Local Authority Area

The Borough of Rushcliffe covers 157 square miles (around 400 sq km) and has a population of 106,051 (2002). It stretches from the River Trent to the Leicestershire borders and eastwards along the Trent Valley, to within a few miles of Newark.

The largest town is West Bridgford, with a population of about 36,000. This is part of the Greater Nottingham conurbation, being separated from the City of Nottingham by the River Trent. The other major settlements within the Borough are Bingham, Cotgrave, East Leake, Keyworth, Ruddington and Radcliffe-on-Trent.

Several major roads cross the Borough, linking the Borough with both the M1 and the A1. There are also high daily traffic flows in West Bridgford, from the major arterial routes into the Nottingham city centre. Although the Borough is predominantly rural in nature, it also contains some significant industrial processes. These include Ratcliffe-on-Soar power station and the British Gypsum plasterboard factory at East Leake.

Nottingham East Midlands Airport (NEMA) lies immediately to the south west of Rushcliffe, within the district of North West Leicestershire District Council. Although the flight paths for both approaching and departing aircraft pass directly over the Borough, the air quality impacts of the airport itself do not affect Rushcliffe residents.

1.2 Purpose of Progress Report

Progress Reports are required in the intervening years between the three-yearly Updating and Screening Assessment reports. Their purpose is to maintain continuity in the Local Air Quality Management process.

They are not intended to be as detailed as Updating and Screening Assessment Reports, or to require as much effort. However, if the Progress Report identifies the risk of exceedence of an Air Quality Objective, the Local Authority (LA) should undertake a Detailed Assessment immediately, and not wait until the next round of Review and Assessment.

1.3 Air Quality Objectives

The air quality objectives applicable to Local Air Quality Management (LAQM) in **England** are set out in the Air Quality (England) Regulations 2000 (SI 928), and the Air Quality (England) (Amendment) Regulations 2002 (SI 3043). They are shown in Table 1.1. This table shows the objectives in units of microgram's per cubic metre $\mu\text{g}/\text{m}^3$ (for carbon monoxide the units used are milligram's per cubic metre, mg/m^3). Table 1.1. includes the number of permitted exceedences in any given year (where applicable).

Table 1.1 Air Quality Objectives included in Regulations for the purpose of Local Air Quality Management in England.

Pollutant	Concentration	Measured as	Date to be achieved by
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 mg/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
Particles (PM₁₀) (gravimetric)	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
Sulphur dioxide	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

In 2000, Rushcliffe Borough Council reported the findings of its original review and assessment of local air quality. This was a 3-stage process, concluding that with the exception of particulates, there was no need to proceed beyond Stages 1 and 2.

A more detailed Stage 3 assessment was carried out for particulate matter (PM10), due to both potential inaccuracies in the atmospheric dispersion modelling and the predicted concentrations being close to the objective. Monitoring data was used to validate the computer modelling. It determined that the objective would be unlikely to be exceeded. It was therefore concluded that there was no need to declare an AQMA.

The first phase of the second round of review and assessment (the USA), was completed in 2003 and this provided an update with respect to air quality issues within Rushcliffe. The USA concluded that the annual mean NO₂ objective might not be met at Wilford Lane, Trent Bridge, Lady Bay and A52/Botany Close and it was required to undertake a detailed assessment. The 24-hour, 1-hour and 15-minute mean objectives for SO₂ were predicted to be exceeded in the vicinity of the coal-fired kiln at the Lafarge UK Ltd. cement plant at Barnstone and it was required to undertake a Detailed Assessment.

The Detailed Assessment undertaken in 2005 concluded that the annual mean objective for NO₂ would be exceeded. As a result, two AQMA's were declared on 1st September 2005. AQMA1 included the areas around Wilford Lane, Trent Bridge and Lady Bay (see Map 1.1 Map 1.2). AQMA2 included the area around A52/Botany Close (Map 1.1). The AQS objectives were also found to have been exceeded in respect of SO₂ in the vicinity of Lafarge UK Ltd. cement plant at Barnstone and as a result, AQMA 3 was declared on 1st September 2005.

The 2006 USA determined that there were no exceedences of the AQS objectives identified within their local authority area outside the AQMA's and therefore a Detailed Assessment was not required.

Due to the closure of the Lafarge UK Ltd. cement plant at Barnstone, SO₂ concentrations reduced in the local vicinity of AQMA 3 to below their AQS objectives. AQMA 3 was subsequently revoked on 27th April 2007

In 2008, the progress report concluded that NO₂ had not improved in 2007 with some sites experiencing higher than previous years results including outside of AQMA's. The results indicated that NO₂ at certain receptor locations continued to exceed the NO₂ AQS objectives and that the AQMA's should remain in place. NO₂ in general increased over 2007 rather than decreased and the report predicted that it would be unlikely that the predicted reductions in NO₂ will see an improvement in NO₂ levels such that, all sites will be below the objective level by 2010 as predicted in the USA.

The diffusion tube site on the A46 (East Bridgford site) indicated that 2007 levels were above the objective levels at the façade to a domestic dwelling close to the road. However, the major road improvements to be undertaken and the relocation of the trunk road in the near future were expected to see an improvement in NO₂ exposure at this site.

The 2008 report concluded that there were no plans to declare a further AQMA at this site or to extend the AQMA's already declared but sites close to exceeding or outside of the AQMA's would be increased in tube numbers and each monitoring position reviewed to determine compliance with published guidelines. This led to a general review of existing monitoring sites with some changes over 2008. The response from Defra indicated despite the imminent road building at the East Bridgford site, that the site should be closely monitored and proceed to a DA if necessary. The data acquired so far could be used as the preliminary for a DA.

In 2009 a separate USA and AQAP progress reports were produced. The USA being undertaken by consultants Bureau Veritas. The USA 2009 concluded that over 2008 the sites identified in the previous round had fallen below the objectives and there was no need to undertake detailed assessments at these sites. The A46 bypass at East Bridgford had also begun construction.

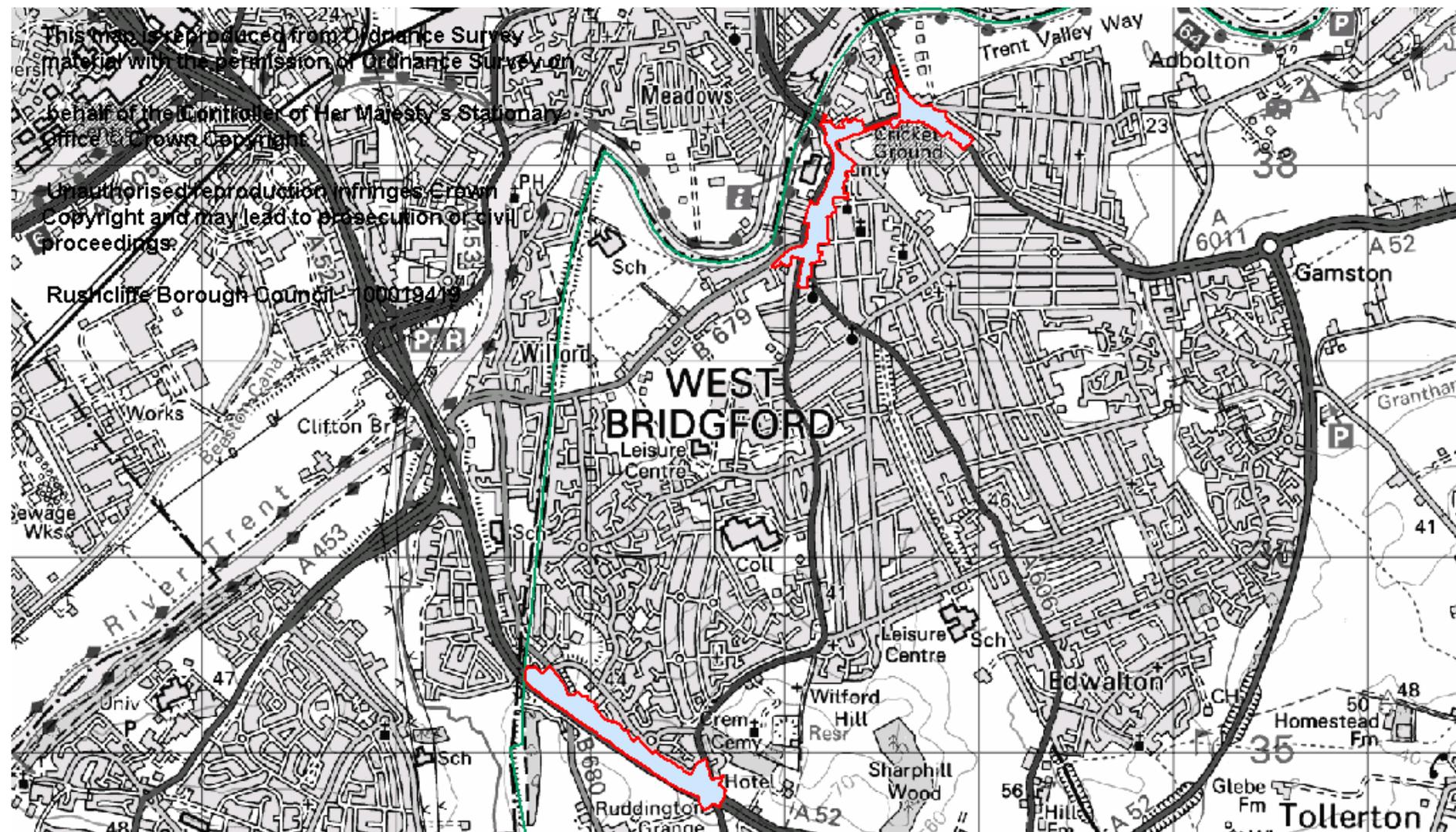
In addition, generally in 2008, NO₂ had fallen compared to the previous year's results and the report concluded that there was no requirement to undertake a detailed assessment in the area. The report concluded that some existing diffusion tube sites were not at relevant receptor sites and should be relocated to better represent exposure to the public. This recommendation was undertaken for the start of the 2009 year.

The 2010 Progress Report concluded that AQMA 2 sites have all been below the AQS but recommended further monitoring prior to any decision to remove the AQMA. The 2010 report also recommended the completion of a DA at the A52 at the Junction of Stragglethorpe Road as a result of elevated levels of NO₂ when compared to the annual mean objective. Levels in AQMA 1 continued to be above the AQS at relevant receptors.

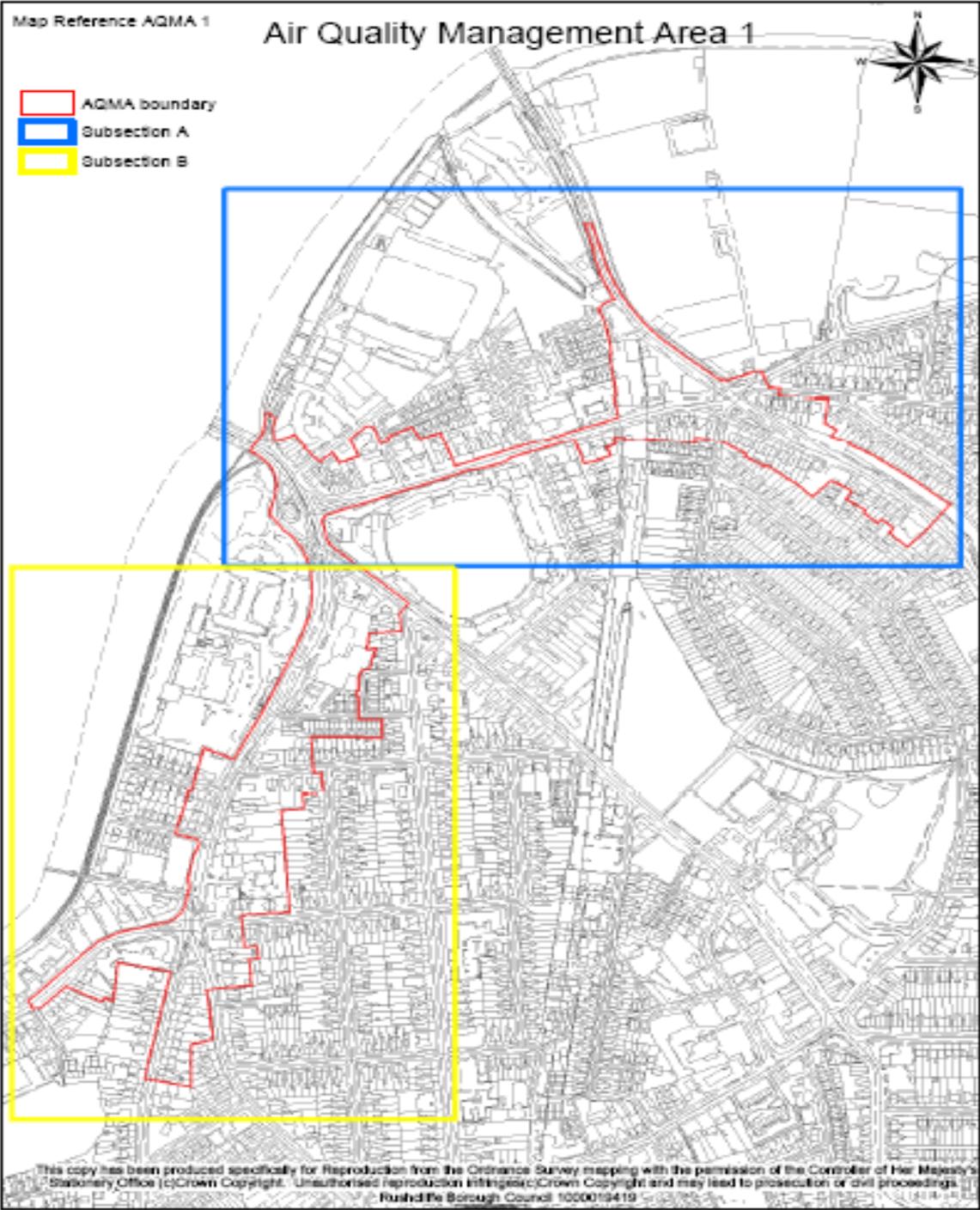
Table 1.2 Showing previous review and assessment reports

Report title	Date Produced
Detailed assessment of NO2 at A52/Stragglethorpe Road	May 2011
Air quality & Air quality action plan Progress report 2010	March 2010
Air Quality Action Plan 2009 Progress Report	July 2009
Updating and Screening Assessment Review and Assessment of Local Air Quality (2009)	July 2009
Air Quality Progress Report 2008	June 2008
Air Quality Review: Assessment Progress Report June 2007	June 2007
Air Quality Action Plan: May 2007	May 2007
Air Quality Management No 3 Order Revocation order (2007)	April 2007
Updating and Screening Assessment, Review and Assessment of Local Air Quality 2006	April 2006
Progress report 2005	April 2005
Detailed assessment of Sulphur dioxide and nitrogen dioxide	February 2005
Updating and Screening Assessment Review and Assessment of Local Air Quality (May 2003)	May 2003
Annual Report on Air Quality (2002)	2002
Air Quality Review and Assessment (2000)	December 2000

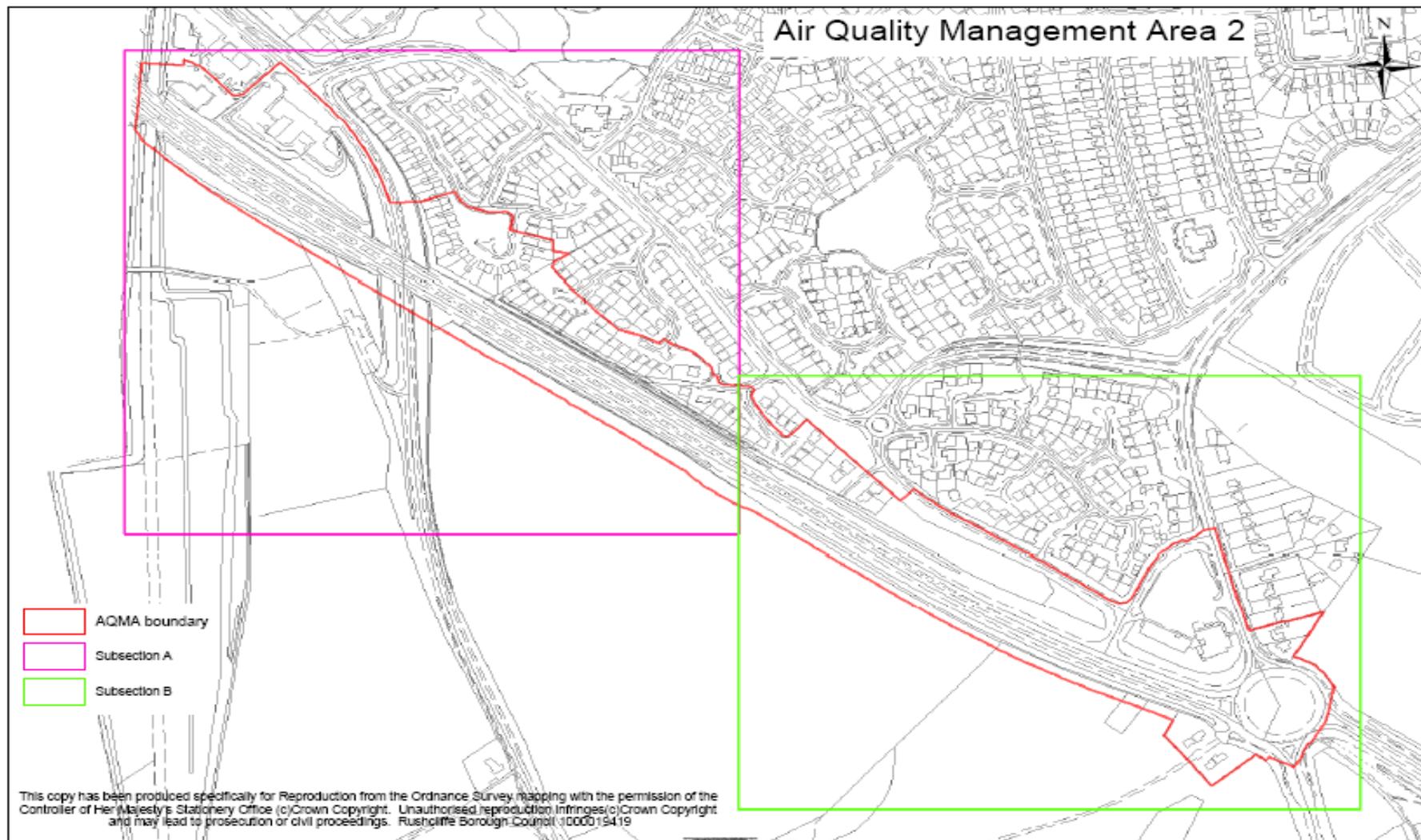
Map 1.1 Map of AQMA 1 & AQMA 2 boundaries



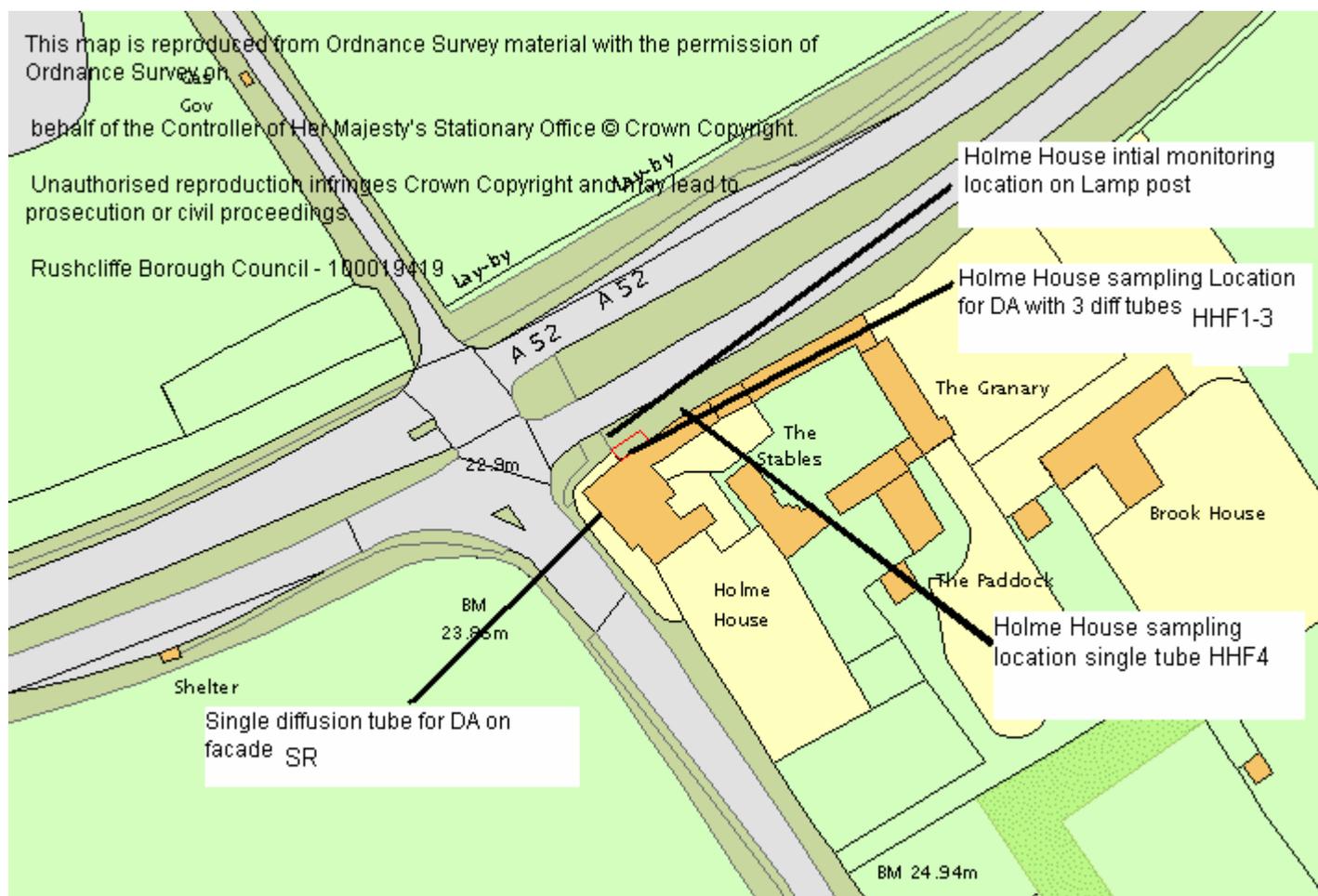
Map 1.2 Detailed Map of AQMA 1 Boundaries



Map 1.3 Detailed Map of AQMA 2 Boundaries



Map 1.4 Map of Holme House A52/Stragglethorpe Road, Radcliffe on Trent



2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

Rushcliffe undertakes automatic monitoring for PM10 and NO₂/NO_x at two locations within the AQMA 1 over 2010.

No new automatic monitoring sites have been started up since the last round of the review and assessment process although work is underway to move the PM10 to A52/Stragglethorpe Road site (see Map 1.4 Map of Holme House A52/Stragglethorpe Road, Radcliffe on Trent

The locations of the 2 operational monitors in the district covering 2010 period are shown in Map 2.1 Location of Automatic Monitoring Sites (NO₂ monitor) and Map 2.2 Location of Automatic Monitoring Sites (PM10 Monitor) shown below.

The monitoring at the NO₂/NO_x site commenced in February 2010 with a new monitor. However the site was substantially over reading and investigations indicated the inlet pipe was not installed correctly and there was a suspected sticking valve. As such there is no data for January 2010 to mid April 2010 has had to be excluded.

There has also been periods of power failures at the site which has led to further data loss of a number of weeks at a time.

For the pm10 data capture was very good for the period of monitoring. The decision was taken in October 2010 to cease monitoring at this site in October 2010. This was after discussion with the help desk and review of the data gathered at the site over previous years. As such data capture for the year covers January 2010 to mid October 2010.

Table 2.1 below confirms the grid references for the monitor locations in the borough.

Map 2.2 Location of Automatic Monitoring Sites (PM10 Monitor)

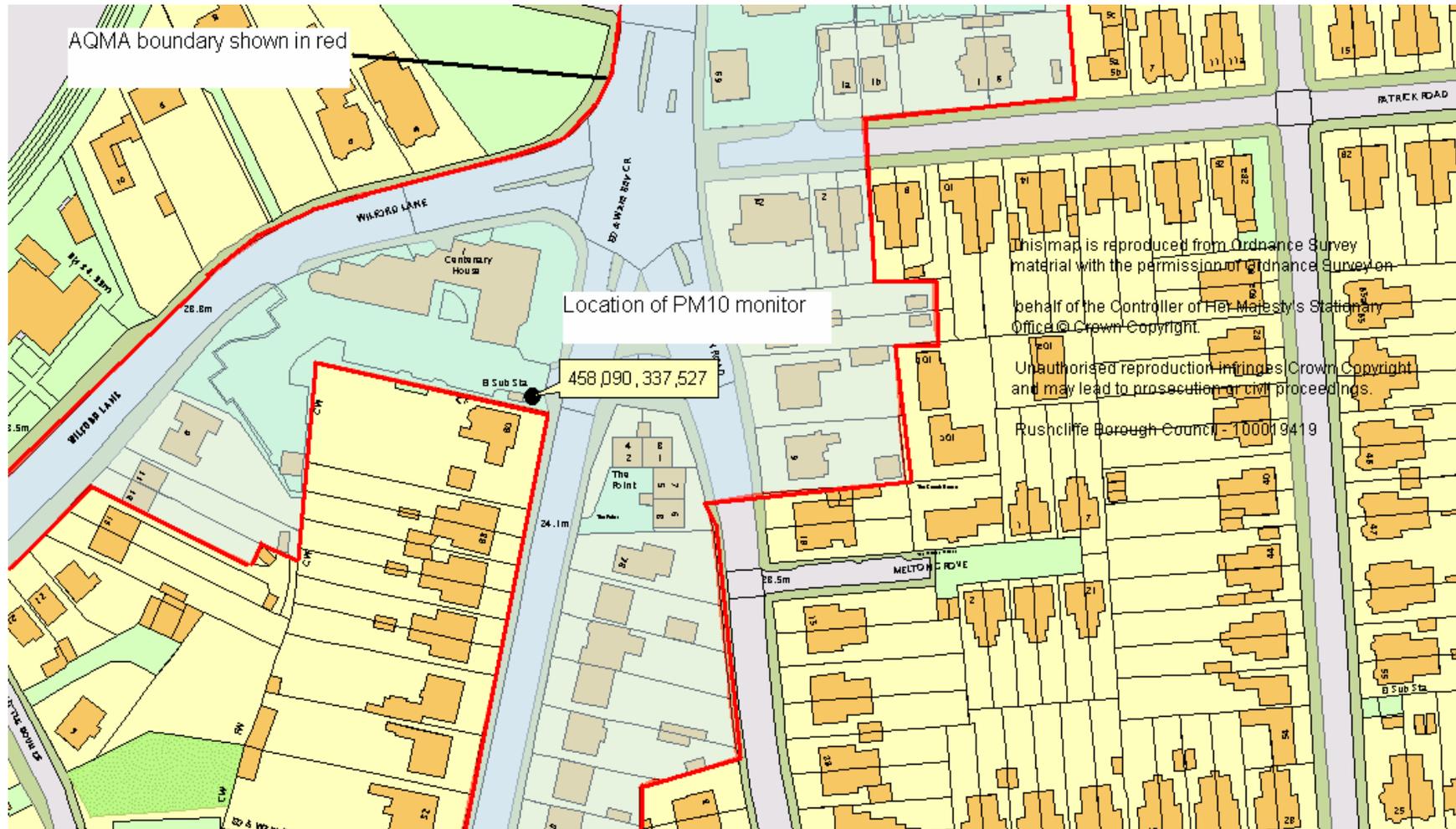


Table 2.1 Details of Automatic Monitoring Sites for 2010

Site Name	Site Type	OS Grid Ref		Pollutants Monitored	Monitoring Technique	In AQM A?	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Does this location represent worst-case exposure?
Centenary House, Loughborough Road, West Bridgford	Road Side	458090	337527	PM ₁₀	Gravimetric	Y	Y (6m)	7.3m	Y
Loughborough Road/Milicent Road, West Bridgford	Road Side	458174	337772	NO ₂	Chemi-luminescent	Y	Y(0m)	5.0m	Y

2.1.2 Non-Automatic Monitoring

Rushcliffe Borough Council undertook monitoring at 36 NO₂ diffusion tubes monitoring points in 2010; some sites have duplicate tubes and there are two sites having triplicate tubes. No other non-automatic monitoring took place in the Borough during the year. The diffusion tubes are supplied and analysed by Gradko International Ltd utilising the 20% Triethanolamine (TEA) in water preparation method. Gradko is a WASP listed and UKAS accredited laboratory. Gradko International Laboratory utilises a Laboratory Quality Management System with the analysis being carried out with a documented in-house laboratory method GLM7

With regard to the application of a bias adjustment factor for the diffusion tubes, the LAQM.TG (09) and Review and Assessment Helpdesk recommends use of a local bias adjustment factor where available and relevant to diffusion tube sites. Rushcliffe Borough Council operates a triplicate diffusion tube co-location with a continuous NO₂ analyser on Loughborough Road/Millicent Road (AKA 1 Loughborough Rd) in West Bridgford. However, due to data capture issues in 2010 a local bias factor was not considered to be robust enough to calculate a local factor. As such a national bias factor of 0.92 has been used. The bias factor used in this report is 0.92 derived from the Defra website at:

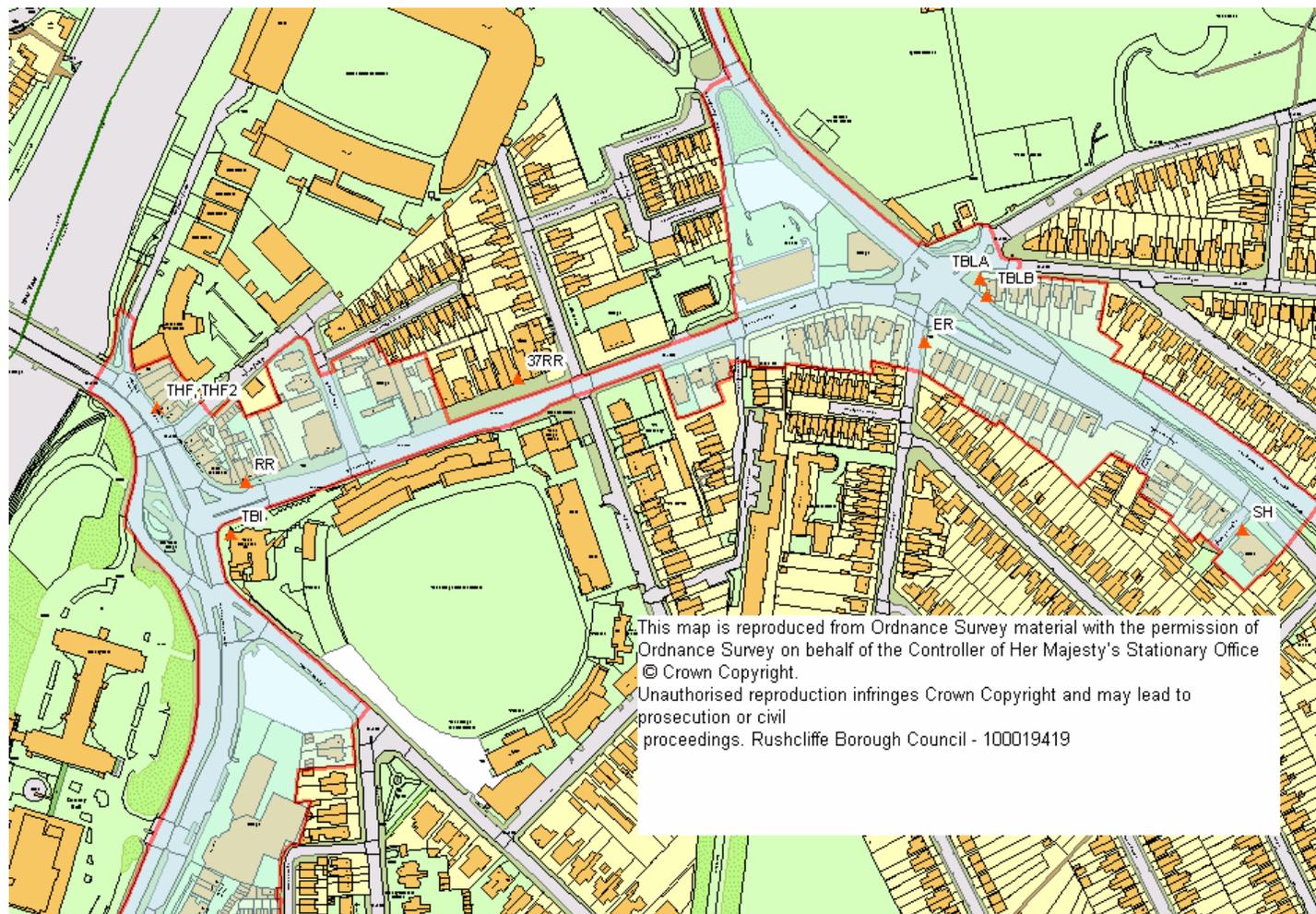
http://laqm.defra.gov.uk/documents/Diffusion_Tube_Bias_Factors_v04_11_v6.xls

Where diffusion tube sites are not directly positioned on the façade of a relevant receptor due to practicalities a prediction is made using the fall off with distance tool available from <http://www.airquality.co.uk/laqm/tools.php>.

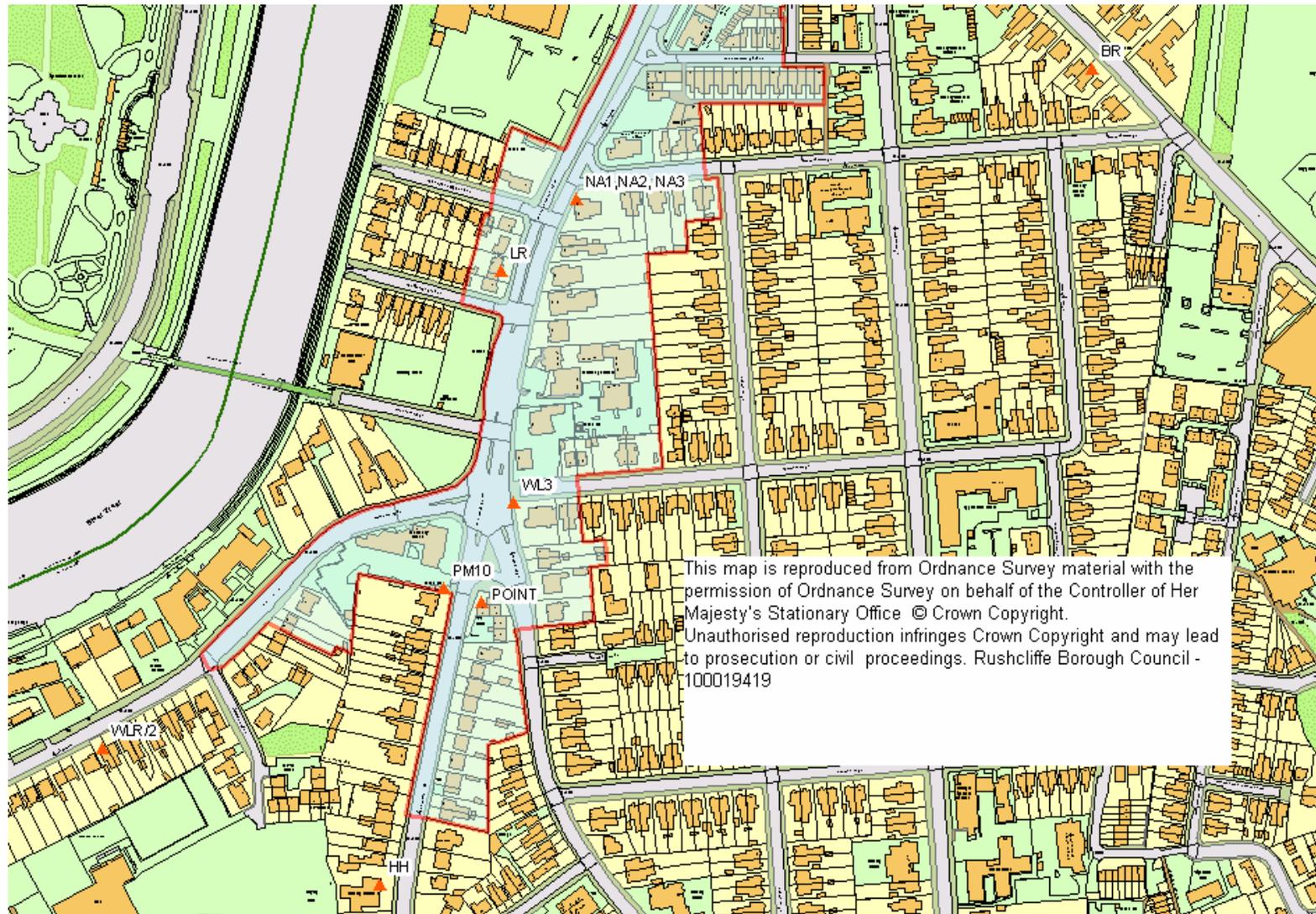
The monitoring site details are contained in Table 2.2 Details of Non- Automatic Monitoring Sites with maps of site locations shown in maps Map 2.3 to Map 2.16

Details of the bias calculation and the adjustment of the reported NO₂ annual mean are shown in Appendix C and in section 2.3.

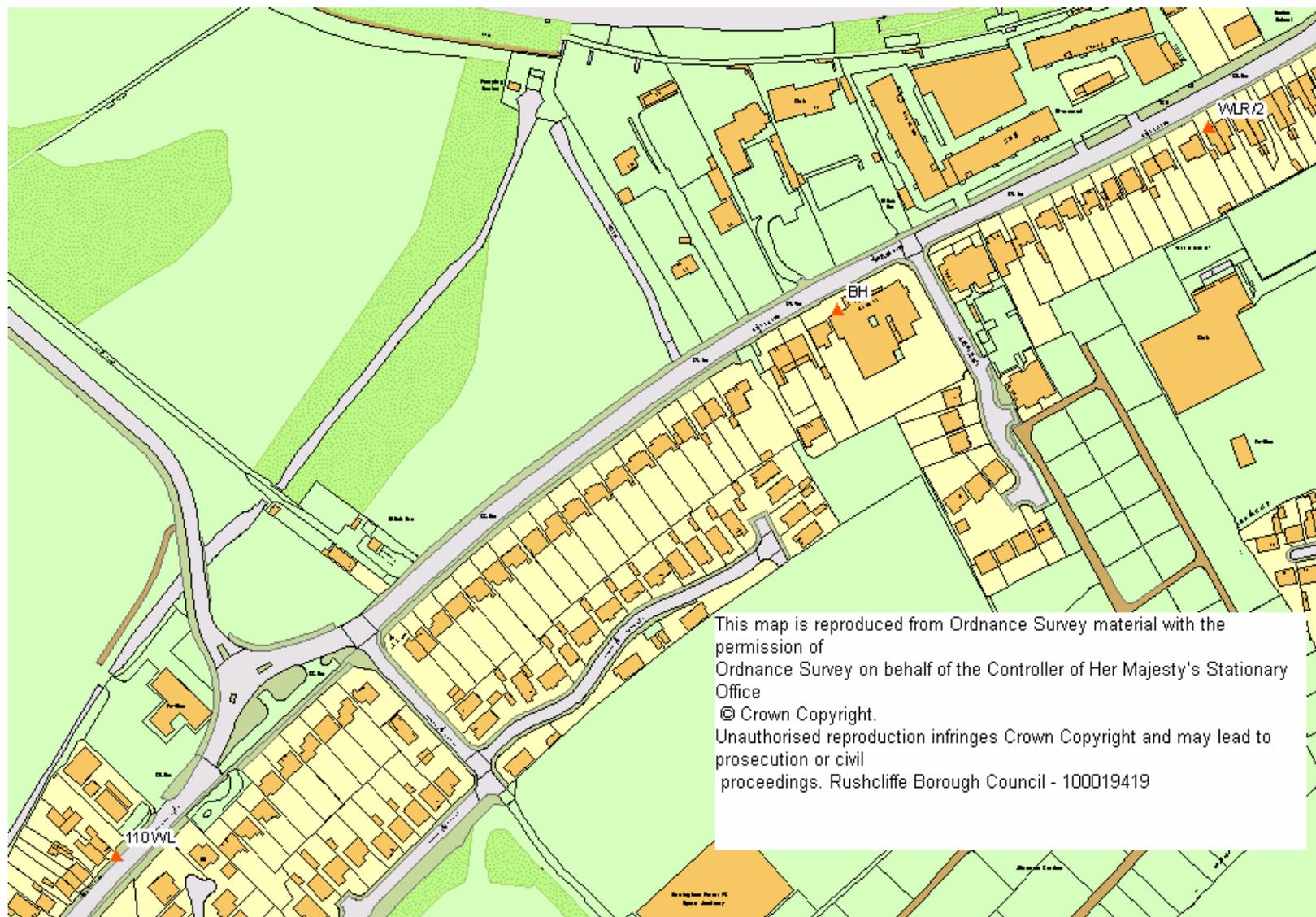
Map 2.3 Locations of Non-Automatic Monitoring Sites THF, RR, TBI



Map 2.4 Locations of Non-Automatic Monitoring Sites NA1-3, LR,WL3, PM10,point, WLR2, HH



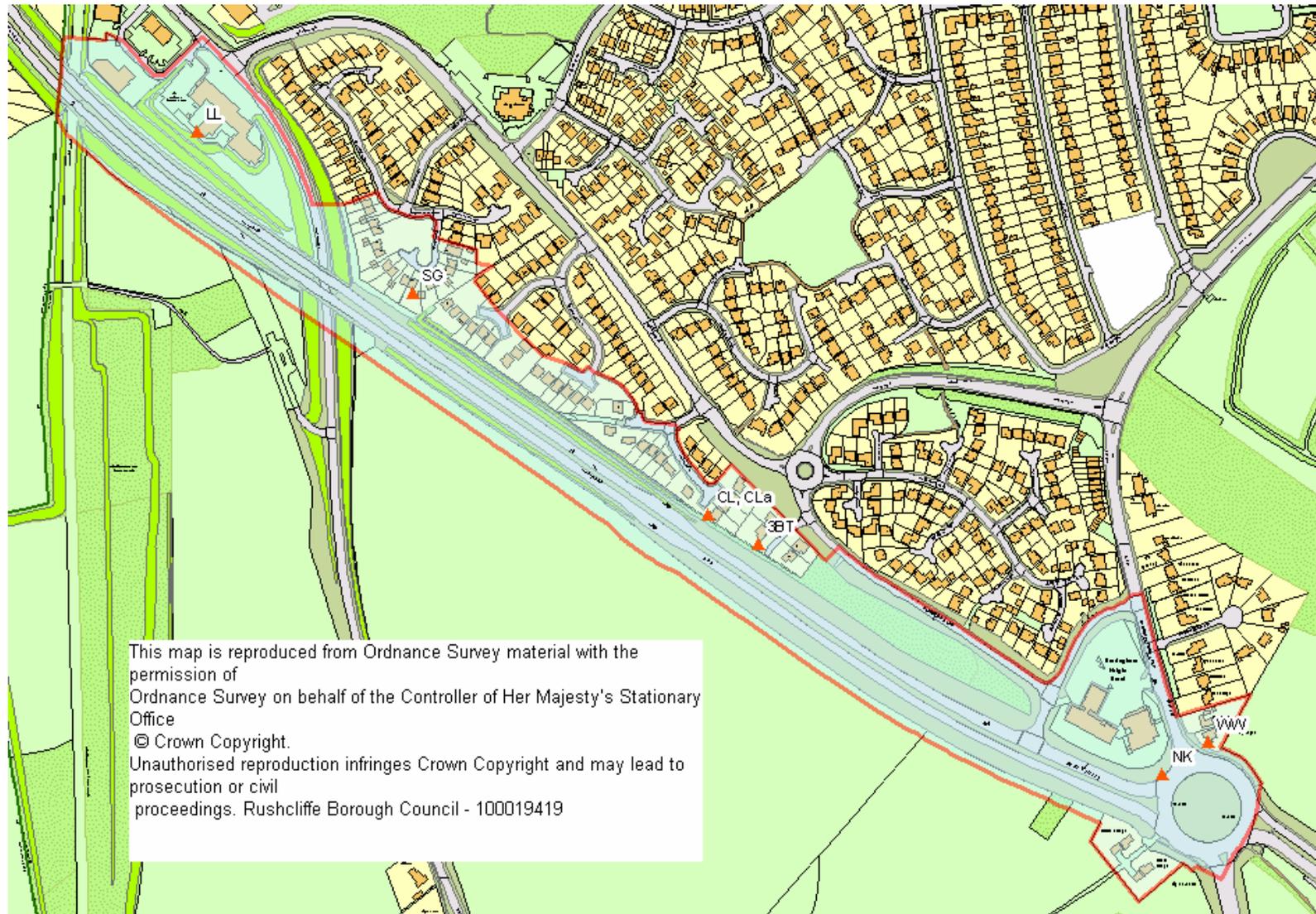
Map 2.5 Locations of Non-Automatic Monitoring Sites BH, 110 WL



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Map 2.6 Locations of Non-Automatic Monitoring Sites LL, SG CL, CLA, BT



Map 2.7 Locations of Non-Automatic Monitoring Sites EB 46



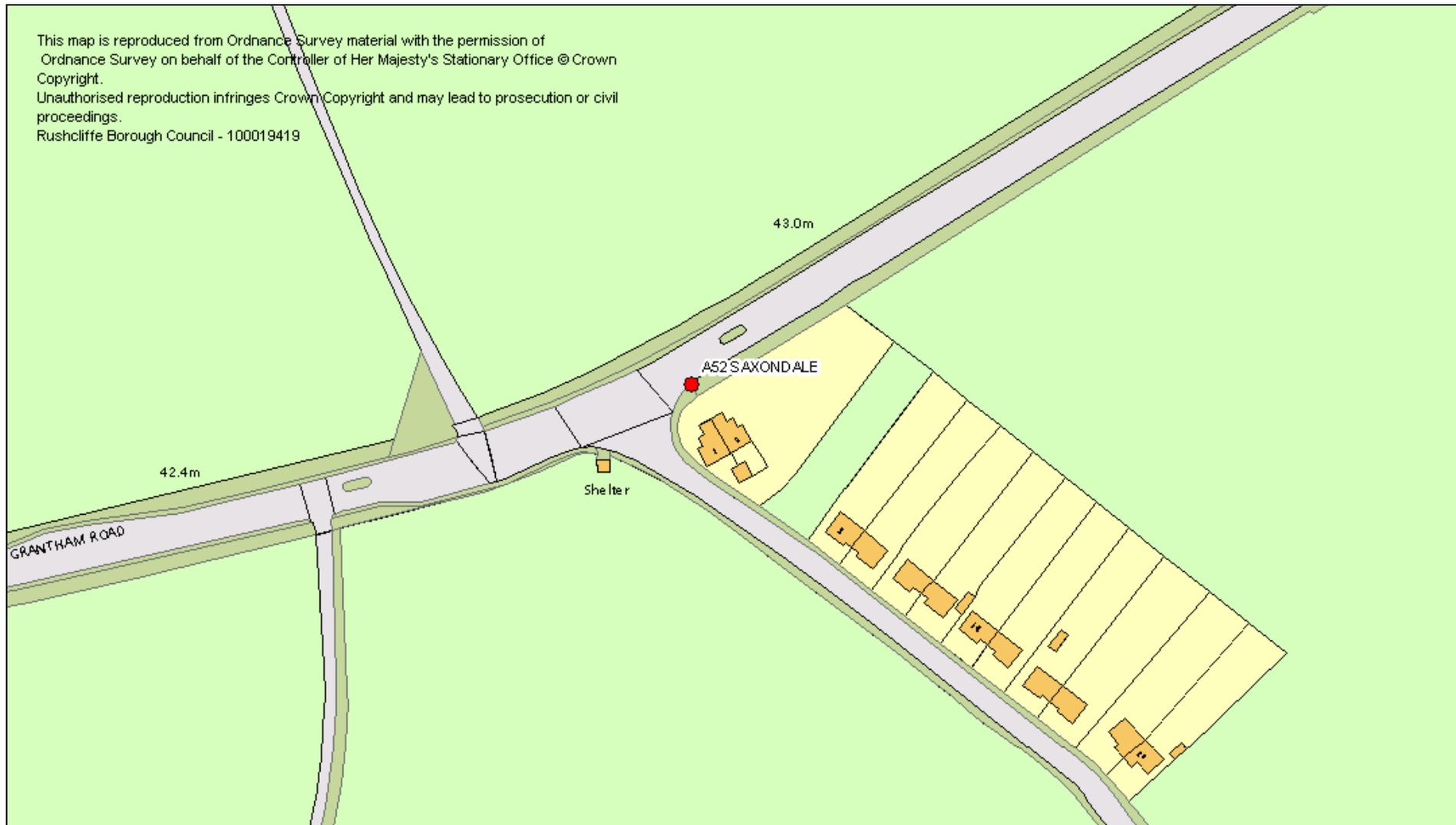
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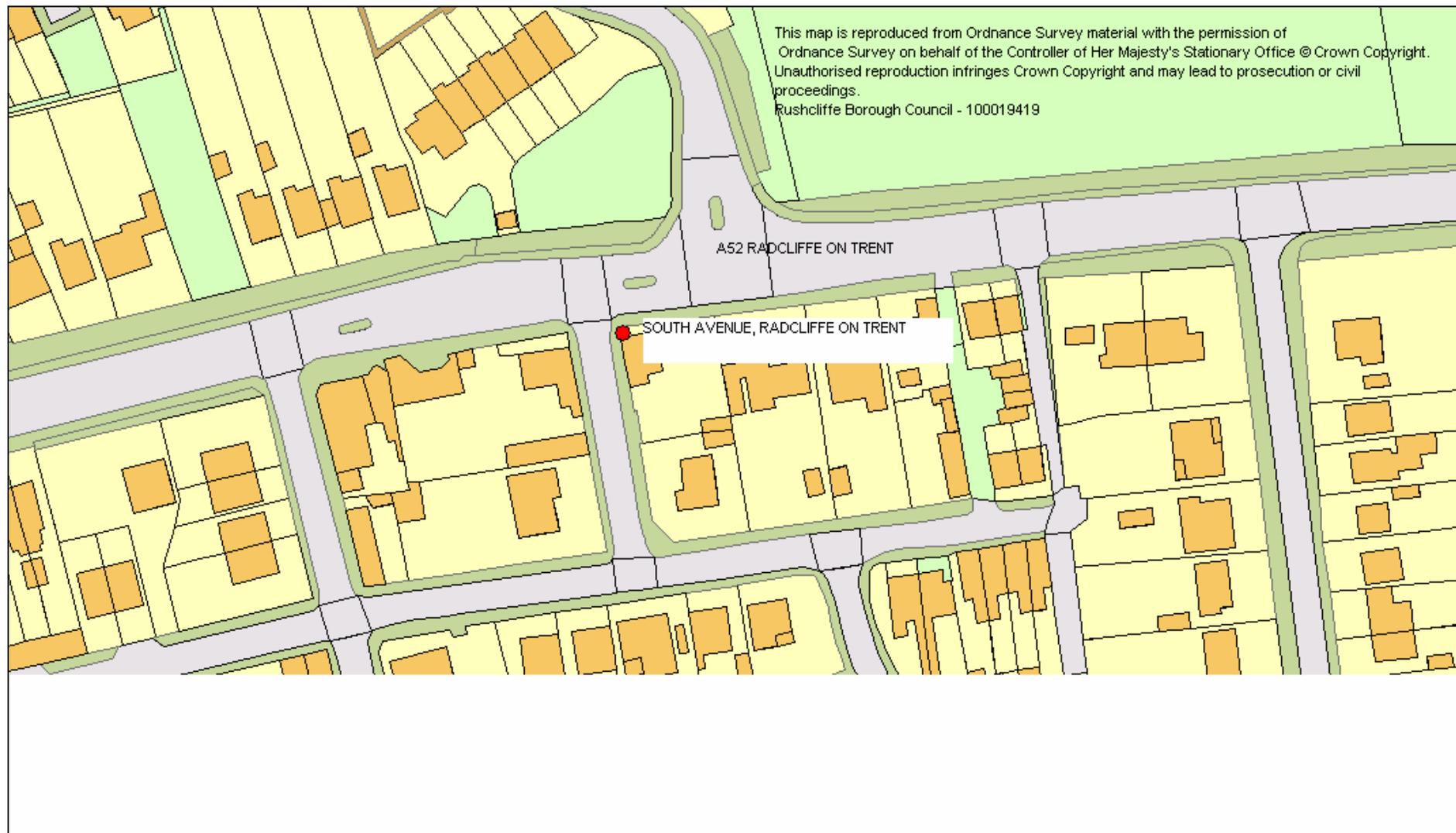
Map 2.8 Locations of Non-Automatic Monitoring Sites A52 HOS



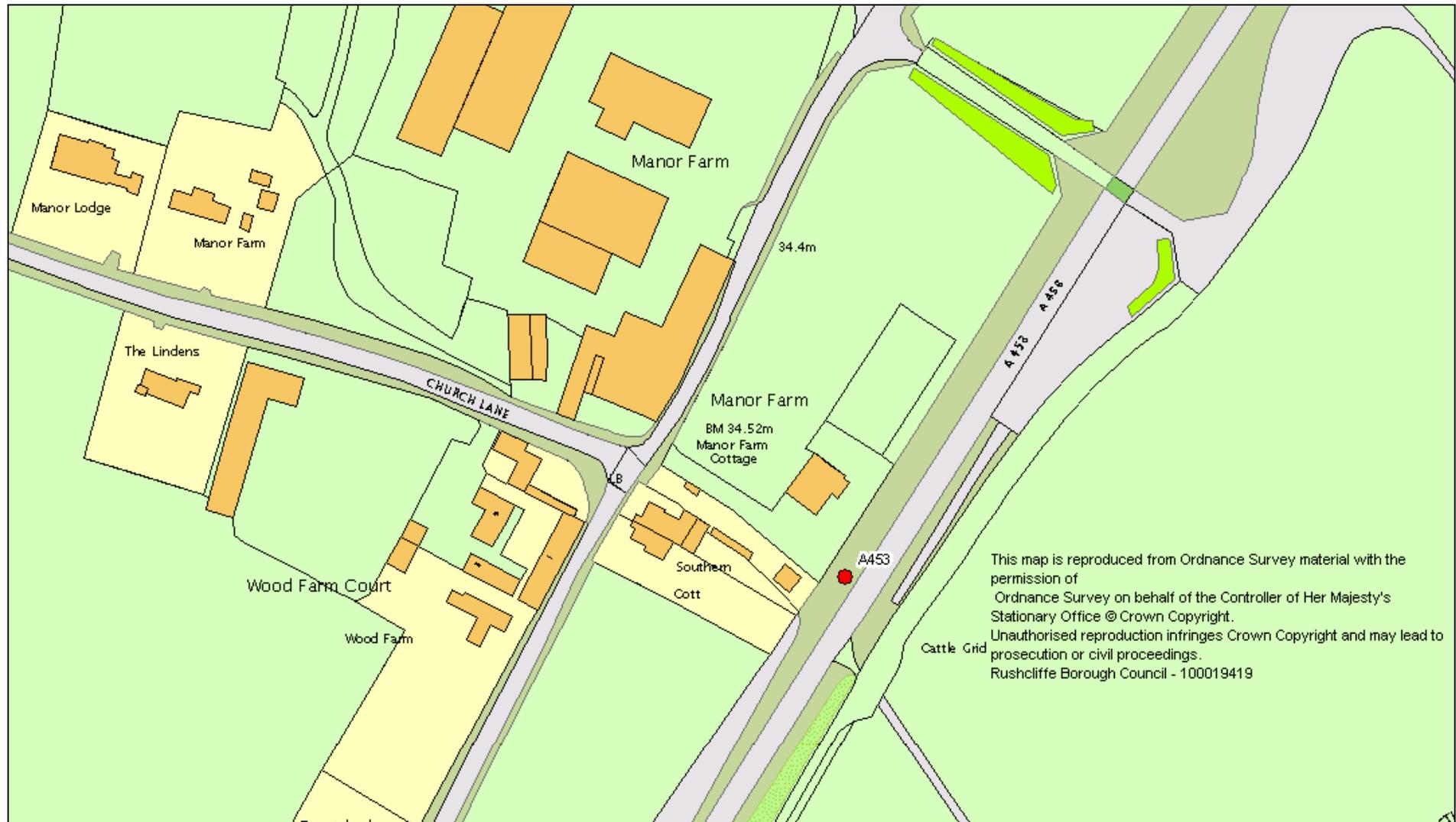
Map 2.10 Locations of Non-Automatic Monitoring Sites A52 S



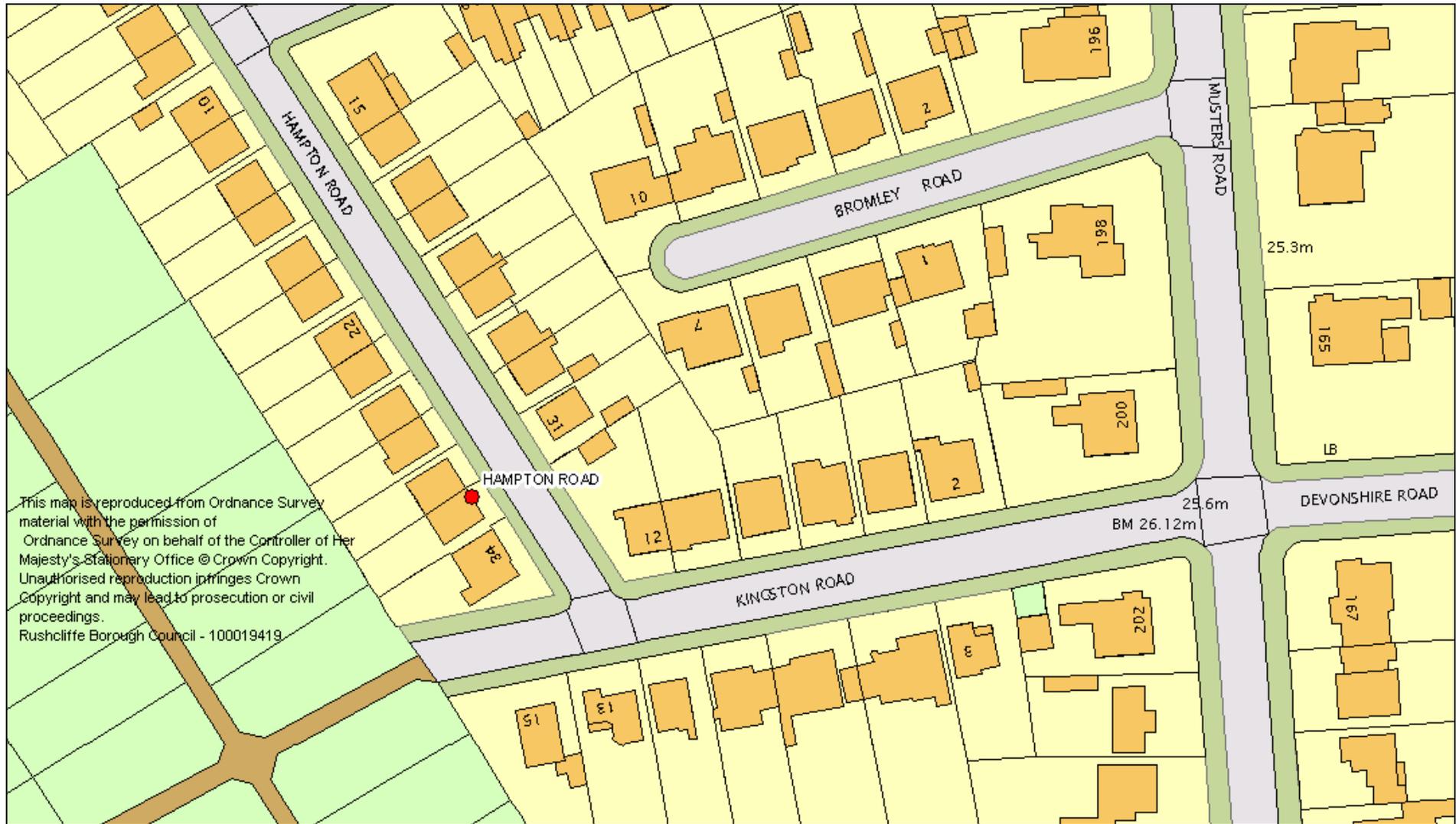
Map 2.11 Locations of Non-Automatic Monitoring Sites A52SA



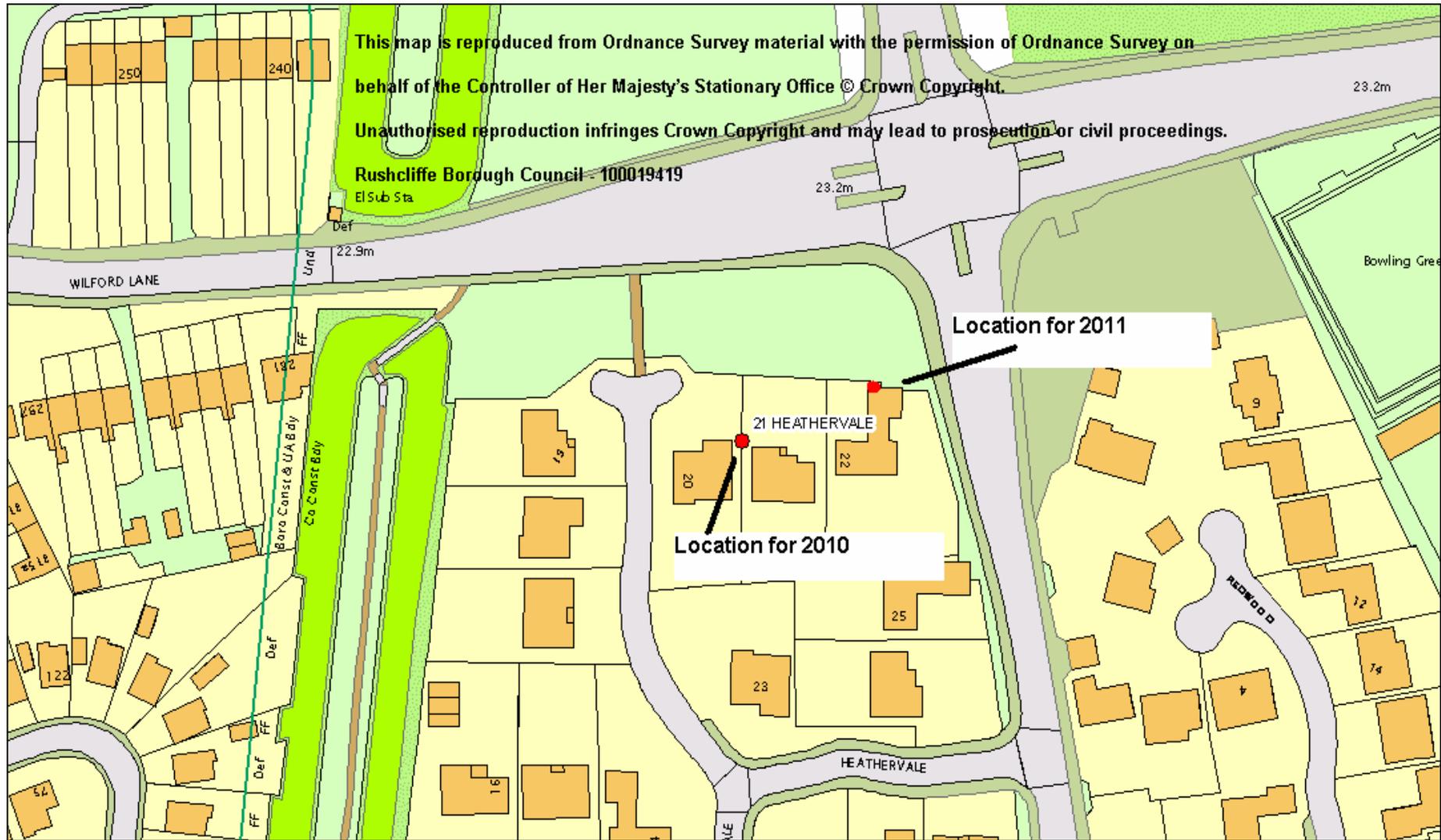
Map 2.12 Locations of Non-Automatic Monitoring Sites A453



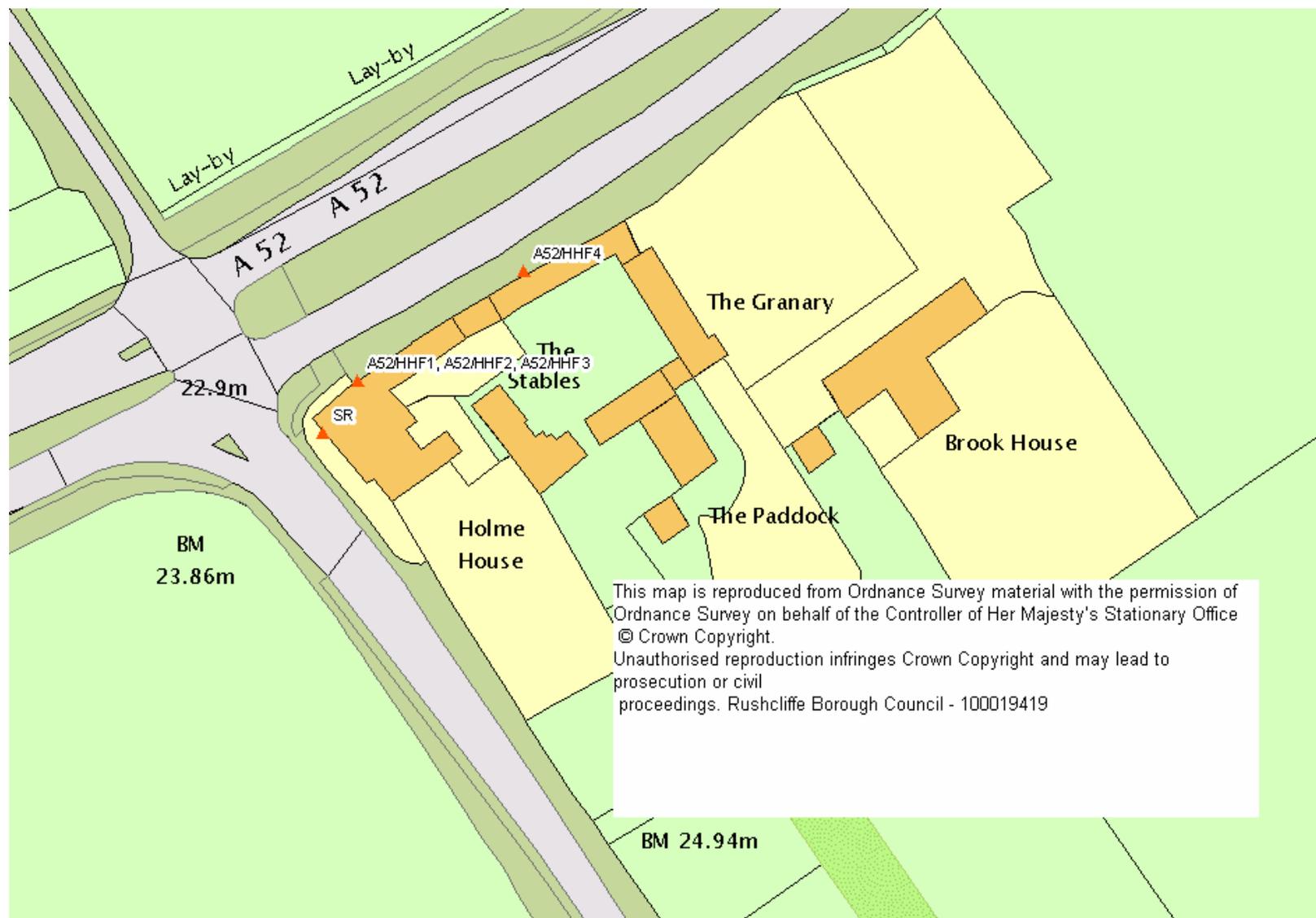
Map 2.13 Locations of Non-Automatic Monitoring Sites HR



Map 2.14 Locations of Non-Automatic Monitoring Sites HV



Map 2.15 Locations of Non-Automatic Monitoring Sites A52 HHF, SR, A52 HHF4



Map 2.16 Locations of Non-Automatic Monitoring Sites ER

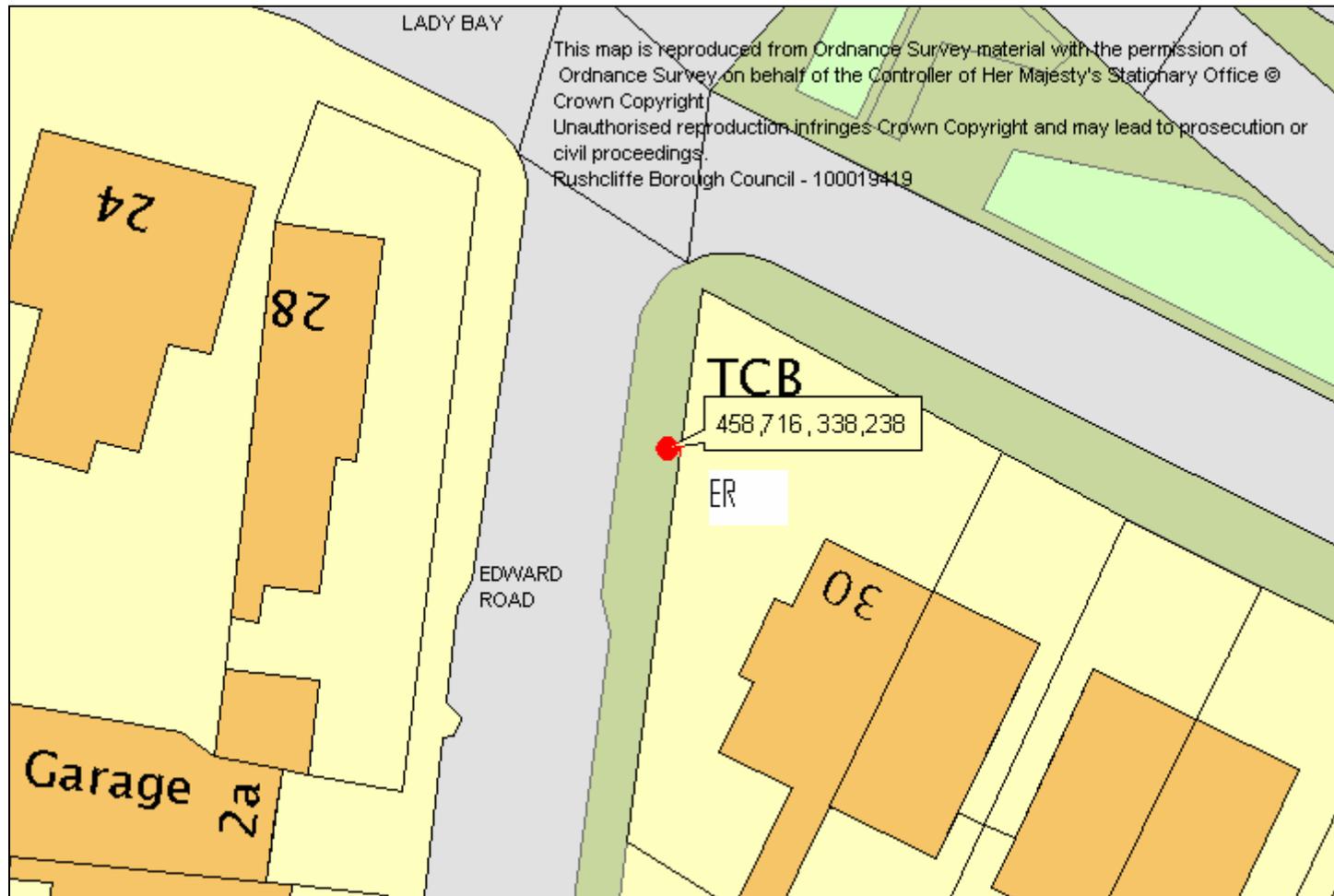


Table 2.2 Details of Non- Automatic Monitoring Sites

Site Name	Short Name (Tube descriptor)	Site Type	OS Grid Ref		Pollutants Monitored	In AQMA?	Relevant Exposure? (Y/N with distance (m) to relevant exposure)			Distance to kerb of nearest road (N/A if not applicable)	Worst- case Location ?
							For annual limit	For 1 hr limit	distance		
1 LOUGHB'H RD W/B	NA1,NA2, NA3	Façade	458174	337772	NO ₂	1	Y	Y	0	5	Y
EDWARD ROAD, LADY BAY	ER	RS	458716	338238	NO ₂	1	Y	Y	0	10.5 from main road(2 from ER)	Y
LOUGHBOROUGH ROAD (RES)	LR	Façade	458126	337727	NO ₂	1	Y	Y	0	8.9	Y
PARTICULATE MONITOR	PM10	Façade	458090	337527	NO ₂	1	Y	Y	6.4	7.3	Y
RADCLIFFE ROAD	RR	Façade	458284	338150	NO ₂	1	N	Y	0	4	Y
SWANS HOTEL	SH	Façade	458919	338120	NO ₂	1	Y	Y	0	10	Y
THE POINT	POINT	Façade	458114	337518	NO ₂	1	Y	Y	0	7.4	Y
TRENT BOULEVARD A	TBLA	Façade	458752	338278	NO ₂	1	Y	Y	0	7.1	Y
TRENT BOULEVARD B	TBLB	Façade	458756	338267	NO ₂	1	Y	Y	0	3.4	Y
TRENT BRIDGE INN	TBI	Façade	458274	338117	NO ₂	1	N	Y	0	6.6	Y
TRENT HOUSE	THF, THF2	Façade	458227	338197	NO ₂	1	Y	Y	0	3.2	Y
WILFORD LANE 3	WL3	RS	458134	337581	NO ₂	1	Y	Y	5.2	2.1	Y
8 SALTBY GREEN	SG	Façade	456970	335222	NO ₂	2	Y	Y	0	29	Y
A60/A52 JUNCTION (Nott Knight)	NK	RS	457612	334813	NO ₂	2	N	N	n/a	1.8	Y
3 BOTANY CLOSE	3BT	Façade	457266	335008	NO ₂	2	Y	Y	0	21	Y

CLOVERLANDS(Façade)	CL, CLa	Façade	457223	335033	NO ₂	2	Y	Y	0	16.3(from A52)	Y
LANDMERE NURSING HOME	LL	Façade	456785	335359	NO ₂	2	Y	Y	0	31.5	Y
WINDYWAYS	WW	RS	457651	334840	NO ₂	2	Y	Y	0	12	Y
A453	A453	RS	451697	330925	NO ₂	no	Y	Y	23.8	3.2	Y
A46 EAST BRIDGFORD	A46/EB, A46/EB2	Façade	470371	342046	NO ₂	no	Y	Y	0	12	Y
A52 LINGS BAR Hospital	GLB HOS	Façade	460663	336514	NO ₂	no	Y	Y	0	26	Y
A52 SAXONDALE	A52/S	RS	466630	339652	NO ₂	no	Y	Y	10	1.5	Y
A52 SOUTH AVE, RADCLIFFE	A52/SA	RS	465929	339543	NO ₂	no	Y	Y	0	4.2	Y
RADCLIFFE A52	A52/RT	RS	464644	338730	NO ₂	no	Y	Y	5.2	3.3	Y
A52 HOME HOUSE(façade) STRAGGLETHORPE	A52/HHF1, A52/HHF2, A52/HHF3	Façade	463011	338213	NO ₂	no	Y	Y	0	6.4	Y
A52 HOMEHOUSE (Façade away from junction on A52)	A52/HHF4	Façade	463040	338232	NO ₂	no	Y	Y	0	6.4	Y
STRAGGLETHORPE ROAD	SR	Façade	463005	338204	NO ₂	no	Y	Y	0	5.5	Y
21 HEATHERVALE	HV	Façade	456893	336768	NO ₂	no	Y	Y	0	36	N
34 BRIDGFORD ROAD	BR	Façade	458501	337854	NO ₂	no	Y	Y	0	10	Y
39/41 WILFORD LANE	WLR/2	Façade	457873	337426	NO ₂	no	Y	Y	0	9	Y
HAMPTON ROAD	HR	UB	458326	336714	NO ₂	no	Y	Y	0	5.4	Y
HICKORY HOUSE	HH	RS	458049	337340	NO ₂	no	Y	Y	0	10.5	Y
110 WILFORD LANE	110 WL	RS	457366	337091	NO ₂	no	Y	Y	3	1.8	Y
37 RADCLIFFE ROAD	37RR	Façade	458457	338215	NO ₂	no	Y	Y	0	13.8	Y
PEVERIL COURT	PC, PC2	Façade	458399	337172	NO ₂	no	Y	Y	0	8	Y
THE BEECHES HOTEL	BH	Façade	457701	337342	NO ₂	no	Y	Y	0	9.7	Y

2.2 Quality Control (QA/QC)

It is essential to ensure that all data collected is accurate, reliable and comparable and have high data capture rates. It is therefore important to apply consistent quality control and assurance procedures. The aim of this document is to outline the main quality assessment and quality control procedures used in Rushcliffe BC to determine air quality data for use in the local air quality management process.

2.2.1 Air quality operators

All monitoring and data management is undertaken by fully trained in house employees who have several years experience in air quality monitoring and data management. Any new personal will undertake appropriate supervised training in line with the service's competency scheme prior to any unsupervised monitoring, calibration or data management. Currently two personal are trained and competent to undertake such work this includes, Martin Hickey EHO and John Pembrington Technical Officer.

2.2.2 Diffusion Tube Monitoring

Rushcliffe use diffusion tubes prepared using 20%TEA in water to measure nitrogen dioxide at a number of sites in the borough. The diffusion tubes are stored in an airtight bag in a refrigerator upon receipt in the post and are used within 6 weeks of the preparation date displayed on the label.

Tube batches are exposed at selected sites to the atmosphere for approximately 4 weeks with the change over date aiming to be +/- 1 day of the publicised diffusion tube change over date for the month to allow comparison with other Local Authority studies if necessary. The locations have are reviewed periodically and all tubes are mounted using spacer brackets and grommets supplied through Gradko.

Each tube is labelled with a bar code and unique identification number. Each batch is supplied with a data collection form to record the location, date and time each tube is exposed in that period. The exposure period is calculated using an excel spreadsheet and in addition Gradko recheck the calculated exposure period for each tube on receipt at the laboratory.

On the day of collection, the tubes are sent in an air tight bag to Gradko International Limited for analysis, together with a control blank that is stored unexposed in the sample fridge. The diffusion tubes are analysed within the scope of Gradko International Ltd Laboratory Quality Control Procedures utilising in-house method GLM7. Gradko is a UKAS accredited laboratory and undertakes diffusion tube monitoring on the same basis for a number of other Local Authorities and Environmental Consultants and now undertakes the monitoring for all LA in the Nottinghamshire Pollution Working Group.

Nitrogen Dioxide absorbed as nitrite by triethanolamine is determined by spectrophotometric measurement at 540 nanometers. Nitrite reacts with an added reagent to form a reddish purple azo dye and the optical density of this complex is measured using a Camspec UV/Visible Spectrophotometer. The concentrations of nitrogen dioxide are then calculated from a pre-calibrated response factor and exposure times. The values are not blank corrected, using the blank "control" diffusion tube provided by Rushcliffe Borough Council.

The accuracy of the measurements made by Gradko are also monitored by participation in an external laboratory measurement proficiency scheme, the 'Workplace Analysis Scheme for Proficiency' (WASP), implemented by the Health and Safety Laboratory, Sheffield.

The analysis is carried out in accordance with Gradko International Ltd, Internal Laboratory Quality Procedure GLM 7, and within their U.K.A.S. Accreditation Schedule.

Data Ratification

All diffusion tube data is checked on a monthly basis to identify any spurious data and compared with other local monitoring sites to further identify any suspect data.

Ratified diffusion tube monitoring data are reported in this document have been biased adjusted using the correction factor as stated which is either derived from the collocation of tubes at the continuous monitoring analyser at Loughborough Road, West Bridgford using the method set out in technical guidance 09 and available from http://www.airquality.co.uk/laqm/tools/AEA_DifTPAB_v03.xls or the most up to date national bias factor.

2.2.3 Gravimetric Monitor

The gravimetric sampler is a Sven Leckel 47/50 gravimetric monitor and is compliant with BS EN 123412, as a EC reference method for PM10. The data necessary to calculate the air flow and any error status is downloaded to a laptop via a cable at each filter cartridge change. The cartridge has a maximum capacity of 17 filters, although Rushcliffe use a batch process of 15 filters at a time.

The sampler operates by drawing a metered ambient air sample through a size selective inlet head by a vacuum pump, thus enabling the particles to be trapped on a filter for later weighing. Each filter is exposed for a 24-hour period and is then automatically changed at midnight each day until the inlet cartridge is empty. Exposed filters are moved to a collection cartridge after exposure.

Filter handling procedures

Filters are supplied by TES Bretby (UKAS Accredited and HSE Approved Laboratory) in individual metal containers already in the filter housing and able to be placed in the monitor without touching the filter surface. Each filter housing is identified by a number (e.g. RBC1) and each filter has a unique number to keep track of the pre-weighed value. The exposed filters and record sheets are returned to the laboratory for re-conditioning, re-weighing and the necessary calculations to determine the mass collected on the filter for each 24hr period. The returned form contains the date of exposure, the air flow sampled, the length of time of exposure, the filter reference number and the mass of PM10 in $\mu\text{g}/\text{m}^3$.

The laboratory in-house method is based on the HSE document MDHS 14/2 'General methods for the sampling and gravimetric analysis of respirable and total inhalable dust'. The filters used are QMA 47 and are stored and weighed in an air-conditioned balance room.

All filters are conditioned for at least 12 hours prior to weighing and re-weighing in the laboratory. They remain under the influence of an ionised air source, in order to minimise the influence of static electricity, immediately prior to weighing. The filters are then weighed on "Sartorius" micro-balances that have a readability of 1µg. The final results are recorded and submitted on UKAS accredited test reports.

Monitor checks and maintenance

At each visit to the monitor to change the filters the grease trap in the inlet is cleaned and fresh grease applied. Upon download of the parameters each filters hours of exposure and volume of air sampled is examined to determine if any unusual values have occurred. If so the operator will investigate the cause and take appropriate action.

The monitor is under a service contract with the supplier Enviro Technology PLC and receives 2 service visits annually at which time preventative maintenance and cleaning takes place as well as a flow calibration.

Data handling

Reports from TES Bretby are received via email and the data is transferred manually on to an excel spreadsheet. From the spreadsheet the annual mean, data capture rate and number of days above the AQO is determined. As the sampler is an EU approved sampler no corrections are required to be made to the reported particulate results and direct comparison with the AQO's can be made.

2.2.4 NOx Continuous Analyser

Description of Analyser

The NOx continuous analyser is located at the façade of 43 Loughborough Road, West Bridgford and is a permanent site. The site is non residential but provides a good assessment of NO2/NOx close to the main road along the building line. It is a Monitor Europe ML9841B single chamber chemi-luminescent analyser and is approved by TUV, US EPA and NETCEN.

The analyser has a resolution of 0.001ppm and a reported lower detectable limit of <0.5ppb. The linearity error of the analyser is ± 1% of the full scale (from best line fit), and the precision is 0.5ppb or 1% of concentration reading (whichever is the greater). From February 2010 the monitor and enclosure has been renewed but kept at the same location. Data reported in this document is entirely from the new monitor. The new monitor remains a ML9841B NOx Analyser with IZS and for 2010 is installed into a Romon 300 roadside enclosure with air conditioning.

Instruments Checks and Calibration of the Analyser

Daily automatic calibration

Zero air is generated by passing air through scrubbers and passed through the reaction cell. Span gas is generated by a permeation tube and passed to the reaction chamber to give the span calibration response.

The daily automatic calibrations are used as a check on the instrument performance and drift.

Analyser inspection and manual calibration

The analyser is covered by a service and maintenance contract with Casella Measurement, and covers calibration checks, flow and leak checks, cleaning of components, analyser diagnostic checks, replacement of faulty components and consumables and fault call out.

Manual calibration checks are carried out by RBC staff on a fortnightly basis using scrubbed zero air derived from the integrated scrubber column and a certificated NO/NO_x calibration gas is supplied by BOC Gases. The BOC gas is changed when the certification expires.

The analyser is taken out of service and the inlet filter is changed prior to connecting the calibration gases. The zero air and NO/NO_x gases are run through the analyser and the responses noted together with the instrument gain factor. The output of the analyser (e.g. the gain) is only reset or altered following equipment service or repair or if drift occurs necessitating a change of the gain setting. The calibration zero values, span values and gas certified values are used to rescale the raw data received from the analyser using a proprietary software package, Envista.

2.2.5 Data Handling and Ratification

Data handling

Raw data is downloaded via a modem connection automatically every 24 hours into the Envista Arm remote server database. This data can be viewed by all the Nottinghamshire Local Authorities who are part of the network; however, only data can be manipulated in the database that belongs to the respective LA. Data is currently being maintained under contract by the software supplier engaged through Casella Stanger and data integrity and security is part of this contract arrangement. In addition the data, both raw and ratified is published on the following web page <http://www.nottinghamaqm.net/Default.htm>

Data is downloaded in PPB and µg/m³ and visually inspected for negative values, missing data sets and spurious results.

Initial scaling factors are determined for NO and NO_x using the following formulas based on the fortnightly calibration checks.

$$\text{Scaling Factor "A"} = \frac{\text{Expected (Known) Cylinder Concentration}}{\text{Measured Concentration} - \text{Measured Zero}}$$

$$\text{Scaling Factor "B"} = - \text{Measured Zero Value}$$

To rescale the NO value the "A" scaling factor for the fortnightly period in question is multiplied to each 15 minute data set for NO in the database (on the PPB channel). Subsequently the "B" scaling factor is added to the same period of data to address any zero drift noted at the calibration check.

If any zero values, negative values are still present the data block is further rescaled to remove any zero values.

The same procedure is then carried out with the NO_x data using calculated "A" and "B" factors for NO_x over the same periods.

To calculate the rescaled NO₂ 15 min values a calculation is then run on the PPB data base using the following equation:

$$\text{NO}_2 \text{ concentration (PPB)} = \text{NO}_x \text{ concentration (PPB)} - \text{NO concentration. (PPB)}$$

These calculations are undertaken in PPB before any conversion to micrograms. NO₂ and NO_x are converted to $\mu\text{g}/\text{m}^3$ by a conversion factor of 1.91. NO is converted to $\mu\text{g}/\text{m}^3$ by a conversion factor of 1.25.

Once data on the PPB channels is determined to be satisfactory the ug/ms channels are re-calculated from the PPB channels to enable analysis in micrograms.

Data ratification

All raw data is examined for consistency and the existence of any spurious results. Negative values are examined and either removed or rescaled further and high values are interrogated to see if the readings are consistent with expectations or an equipment error may have occurred. Data, during calibration checks is automatically excluded from the database by a software service switch on the instrument panel which is used during calibration checks.

If any doubts exist as to the satisfactory status of any data the data is excluded from the data base calculations, although the Envista Arm software allows the data to remain in the database and marked as 'not used' enabling recovery of any excluded data should that be considered necessary. Each data set that is excluded must have annotated against it a reason for the data exclusion to allow for traceability of data ratification. The most common reason for data being excluded is monitor breakdown leading to consistently low or very high readings. However, power failure can also be a cause as well as any specific events noted by officers during visits. E.g. trucks being run next to the monitor for maintenance of the building façade or similar.

Information from the other analysers on the system can also be accessed to compare any data that may be experiencing high or low readings to enable a decision to be made on the status of any data highlighted. This includes the AURN monitors operated by the Nottingham City.

Envista has built in reports that enable a number of parameters to be determined on the ratified or raw datasets as required. During 2010 three new channels have been added to the data base to enable display of the results directly in $\mu\text{g}/\text{m}^3$. Data ratification and recalculation will take place on the ppb channels with final data being calculated from these ppb channels and converted using the published conversion factors in TG (09).

2.3 Comparison of Monitoring Results with Air Quality Objectives

2.3.1 Nitrogen Dioxide

Automatic Monitoring Data

The results for the chemi-luminescence analyser sited at Loughborough Road, West Bridgford are shown in Table 2.3 below.

Capture was less than in previous years due to instrument being installed in February 2010 following the breakdown of the previous monitor in late December 2009, leading to no monitoring in January 2010. Also data was excluded from February 2010 to 11th April 2010 due to very low NO readings but High NO_x readings which indicated a problem with the analyser. Data is therefore available from 12th April 2010 to 31 December 2010 with some data loss due to power failures over the remaining year.

The non annualised NO₂ result is 36.02 ug/m³, which covers an 8 ½ month period. Table 3.1 of TG(09) states that 'Where data are available for a period of less than 9 months, then they should be adjusted to provide an estimate of the annual mean using the procedure set out in Box 3.2'. As such the 2010 reported value has been annualised using data from four regional monitors. The calculations are shown below Table 2.3.

Table 2.3 Results of Automatic Monitoring for Nitrogen Dioxide: Comparison with Annual Mean Objective

Site ID	Location	Within AQMA ?	Data Capture for monitoring period ^a %	Data Capture for full calendar year 2010 ^b %	Annual mean concentrations (µg/m ³)			
					2007 _{c, d}	2008 _{c, d}	2009 ^c	2010 ^c
NO _x monitor	Loughborough Road/ Milicent Road	Y	(12 April 2010 – 31 Dec 2010) 89%	64%	43.2 (89% DC)	38.4 (88% DC)	34.10 (77% DC)	39.24 (89% DC*1)

^a i.e. data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

^b i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%.)

^c Means should be "annualised" as in Box 3.2 of TG(09), if monitoring was not carried out for the full year.

^d Annual mean concentrations for previous years are optional.

*1 on a 8 ½ months monitoring period. 2010 value is annualised to 12 months using provisional data.

Calculation for the annualised NO2 results as per box 3.2 of TG (09)

PM 12 April to 31 December 2010

	AM	PM	AM/PM
Chesterfield UB	19.26	17.13	1.12
Northampton UB	20.92	19.72	1.06
Nottingham UB	39.73	37.02	1.07
Market Harborough Rural	13.28	12.08	1.10
Average (Ra)=			1.089

Annualised result = 1.089 x 36.02 = **39.23**

Figure 2.1 trends in Annual Mean Nitrogen Dioxide Concentration Measured at Automatic Monitoring Sites.

The chart below shows graphically the annual means from the automatic monitoring site. 2006 data is omitted due to lack of data capture for this year. The chart illustrates a fall at this location from 2007 to 2009 and an increase reported in 2010. It is noted that this 2010 figure is an annualised result based on provisional data due to data capture being less than nine months. It is likely that this is an over estimate of the NO2 level for this reason. In addition, 2010 saw record low temperatures in December 2010 with higher than normal NO2 in this period which may also be a contributory factor.

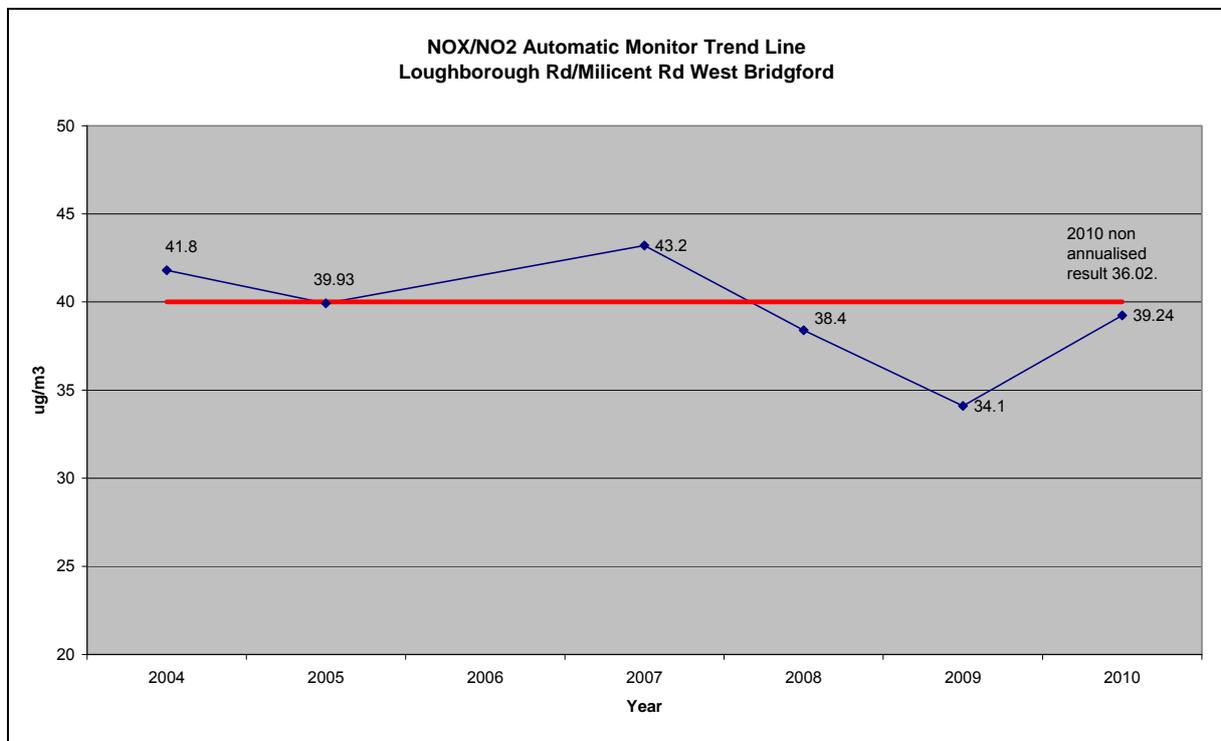


Table 2.4 Results of Automatic Monitoring for Nitrogen Dioxide: Comparison with 1-hour Mean Objective

Site ID	Location	Within AQMA?	Data Capture for monitoring period ^a %	Data Capture for full calendar year 2010 ^b %	Number of Exceedences of hourly mean (200 µg/m ³)			
					2007 ^c	2008 ^c	2009	2010
(1 l'borough Rd) NOx monitor	Loughborough Road/ 43 Milicent Road	Y	(14 April 2010 – 31 Dec 2010) 89%	64	0	2	0	0
							99.8 th Percentile = 119.78 (revised 2010)	99.8 th Percentile 131.56

^a i.e. data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

^b i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%.)

^c Numbers of exceedences for previous years are optional.

The measured annual mean of the continuous monitor is below the AQO of 40 µg/m³. The site has not had any exceedences of the 200 µg/m³ hourly limit in 2010.

The monitor has been in the same location since its installation and is representative of the building line along Loughborough although the building it is immediately adjacent to is office accommodation and therefore is not a relevant receptor for the annual mean.

Diffusion Tube Monitoring Data

Table 2.5 Results of Nitrogen Dioxide Diffusion Tubes, below, shows the bias adjusted diffusion tube results undertaken in Rushcliffe in 2010 and the previous year's results where tubes have been sited in the same locations over past years. Tube averages that exceed the AQO have been highlighted in the right hand column. It should be noted however, that some of these sites are not located on receptor locations and as such a further adjustment is required to allow for the fall off with distance prior to comparing the result with the AQO. Appendix E contains a table showing the monthly diffusion tube results for the year for all sites.

Figure 2.2 to Figure 2.4 show the trend in the NO₂ diffusion tube results. The charts show diffusion tubes results in AQMA1, AQMA2 and in non AQMA sites respectfully to aid interpretation. A trend line has been added to each chart to illustrate the trend over the sampling years for the highest tube in each chart. Those results in red are above the AQO and where the row has been highlighted indicates the tube result is above the 60 µg/m³ average (if any). Some sites however will still require correcting to the nearest relevant exposure before comparing to the AQO and this will be discussed in the following narrative.

Table 2.5 Results of Nitrogen Dioxide Diffusion Tubes

Site ID	Location	within AQMA?	2010 Data Capture for monitoring period ^a	Data Capture for full calendar year 2010 ^b	Annual mean concentrations ($\mu\text{g}/\text{m}^3$)						comment
			%	%	Bias adjusted mean $\mu\text{g}/\text{m}^3$ (1.07) (2005)	Bias adjusted (0.96) Mean $\mu\text{g}/\text{m}^3$ (2006)	Bias adjusted (1.03) Mean $\mu\text{g}/\text{m}^3$ (2007)	Bias adjusted (0.91 & 0.92) Mean $\mu\text{g}/\text{m}^3$ (2008)	Bias adjusted (0.95) Mean $\mu\text{g}/\text{m}^3$ (2009)	Bias adjusted (0.92) Mean $\mu\text{g}/\text{m}^3$ (2010)	
NA1/2/3	1 Loughb' R, WB (Mon)/Milicent rd	1	100%	100%	39.0	35.9	43.3	35.7	34.2	34.5	Triplicate tube site
ER	EDWARD ROAD, LADY BAY	1	100%	100%	REPLACES LB NEW IN 2009				34.5	35.7	
LR	Loughb' , WB. (Res)	1	100%	100%	45.1	36.1	45.8	40.0	35.3	37.6	
PM10	Particulate Mon	1	100%	100%	33.2	34.2	39.7	32.1	33.9	35.0	
RR	Radcliffe Road, WB.	1	100%	100%	50.1	43.6	51.4	38.6	40.1	40.8	
SH	Swans Hotel	1	100%	100%	36.7	31.0	34.6	31.2	32.8	32.2	
POINT	The Point	1	100%	100%	38.6	32.4	37.3	29.5	29.1	28.5	
TBLA	Trent Boulevard A	1	100%	100%	42.6	37.5	44.4	38.5	37.0	34.6	
TBLB	Trent Boulevard B	1	100%	100%	44.1	43.6	50.6	38.0	40.3	38.8	
TBI	TRENT BRIDGE INN	1	100%	100%	REPLACES TB NEW IN 2009				54.0	48.8	
THF & THF2	Trent House (Res)	1	92%	92%	52.8	44.7	52.5	39.6	43.3	42.0	2 tubes
WL3	WILFORD LANE 3	1	100%	100%	REPLACES WL NEW IN 2009				44.0	40.3	
SG	Saltby Green	2	100%	100%	32.6	29.0	34.3	26.9	27.0	28.9	
NK	A60/A52 Junction(RS)	2	100%	100%	51.8	49.3	56.9	48.2	49.3	44.3	
3BT	3 BOTANY CLOSE	2	83%	83%	REPLACES A52/WB NEW IN 2009				36.5	31.0	started Nov 2009
CL/Cla	Cloverlands	2	83%	83%	43.6	39.8	48.0	44.2	38.5	36.0	2 tubes
LL	Landmere	2	92%	92%	39.7	27.8	30.9	27.5	29.2	29.7	

WW	Windyways	2	100%	100%	40.1	41.2	44.0	39.3	38.8	35.0	
HV	Heathervale	no	100%	100%	32.2	29.8	33.3	29.4	29.5	25.9	
BR	Bridgford Road	no	100%	100%	33.9	29.1	34.9	27.1	27.6	26.1	
WLR/2	Wilford Lane (Res)	no	100%	100%		30.4	34.0	30.4	30.1	29.6	
A453	A453, Thrumpton(RS)	no	100%	100%		44.6	49.7	44.9	44.2	41.4	
A46/EB & A46/EB2	East Bridgford	no	100%	100%		37.4	43.7	30.1	27.4	27.5	2 tubes
GLB HOS	A52 Lings bar Hospital	no	92%	92%	replaces GLB new 2009				22.5	23.9	
A52/S	Saxondale(RS)	no	100%	100%		35.4	46.0	36.6	36.9	37.1	
A52/SA	A52 SOUTH AVE, RADCLIFFE	no	100%	100%	NEW IN 2009				34.8	35.9	
HR	Hampton Road	no	100%	100%	25.3	20.8	25.3	21.7	21.8	22.0	
HH	Hickory House	no	100%	100%	33.5	30.6	33.5	28.9	29.8	28.2	
37RR	37 RADCLIFFE ROAD	no	75%	75%	REPLACES MC NEW IN 2009				35.2	33.3	started Nov 2009
PC & PC2	Peveil Court	no	100%	100%	37.8	32.1	39.7	30.3	30.1	30.8	2 tubes part year
A52/RT	Radcliffe on Trent(RS)	no	100%	100%		44.7	47.9	42.6	39.1	38.7	
BH	The Beeches Hotel	no	100%	100%	33.7	32.2	38.7	33.1	29.9	30.7	
110 WL	Roam(110 Wilford Lane lamp post)	no	58%	58%	NEW IN 2010					36.5	started in 2010
A52/HHF/1 2 3	A52 HOME HOUSE(façade) HHF1,2,3	no	100%	100%	NEW IN 2009				51.3	52.0	3 tubes for Detailed assessment
SR	STRAGGLETHORPE ROAD	no	100%	100%	NEW IN 2009				36.3	37.7	single tube for DA
A52/HHF/4	A52 HOME HOUSE(façade) HHF 4	no	100%	33%	NEW IN 2010					41.0	started late 2010
A52/HH	A52 HOME HOUSE, STRAGGLETHORPE	no			NEW IN 2009				61.6	N/A	Jan to Oct 2009 ONLY
MC	Midlands Comm	no			50.1	40.7	48.2	40.6	40.6	n/a	ended Oct 2009
CL2	CLOVERLANDS 2 (Lamp post)	2			ONLY IN 2009 8 MONTHS CAPTURE				29.5	N/A	ended
A52/WB	A52 Botany Close(RS)	2			53.1	51.0	62.2	57.6	58.6	n/a	ended in 2009
TB	Trent Bridge(RS)	1			65.4	57.9	70.2	59.6	59.0	n/a	ended Oct 2009

^a i.e. data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

^b i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%.)

^c Means should be "annualised" as in Box 3.2 of TG(09), if monitoring was not carried out for the full year. Annual mean

^d concentrations for previous years are optional

Figure 2.2 Trends in Annual Mean Nitrogen Dioxide Concentration Measured at Diffusion Tube Monitoring Sites.

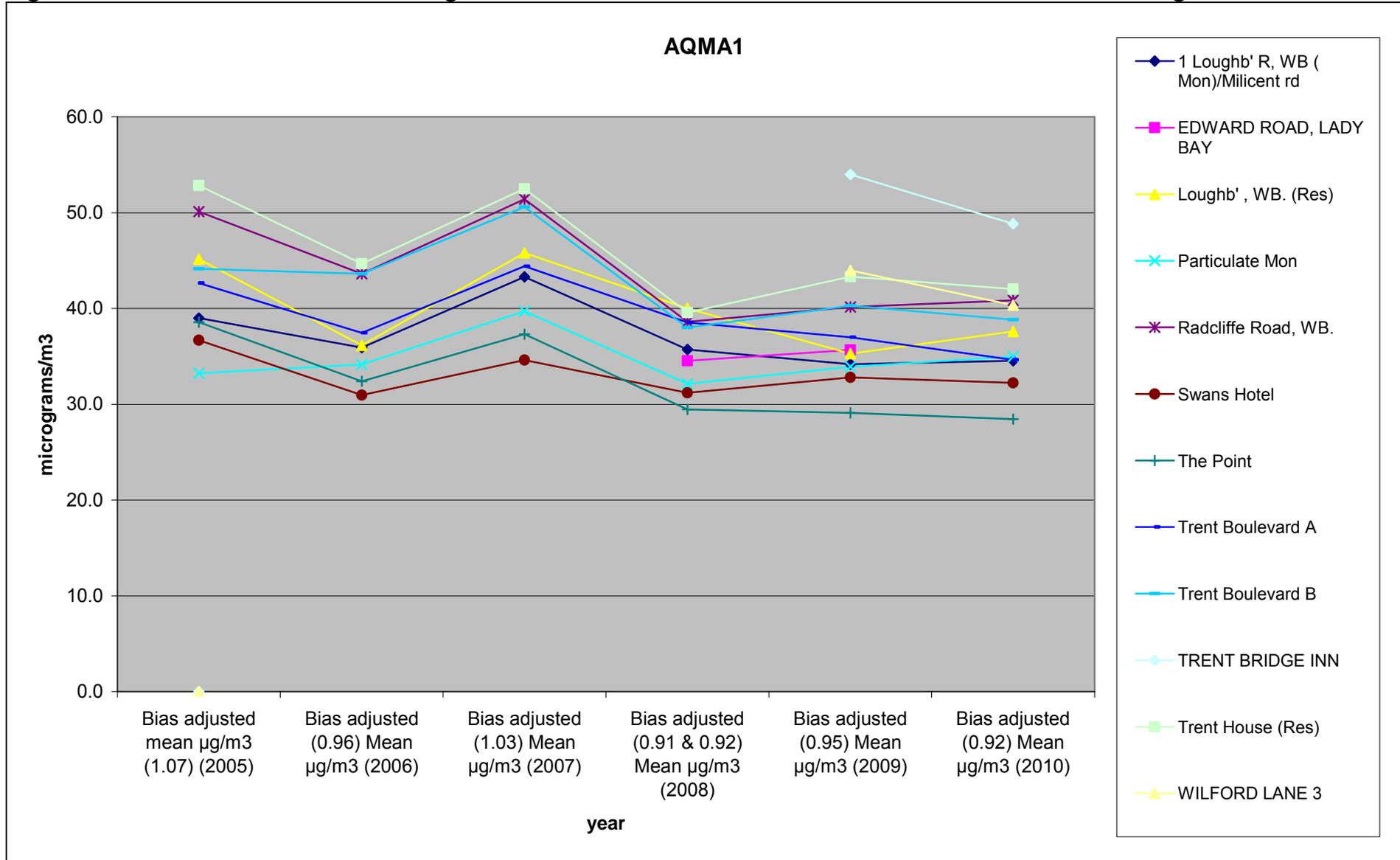


Figure 2.3 Trends in Annual Mean Nitrogen Dioxide Concentration Measured at Diffusion Tube Monitoring sites.

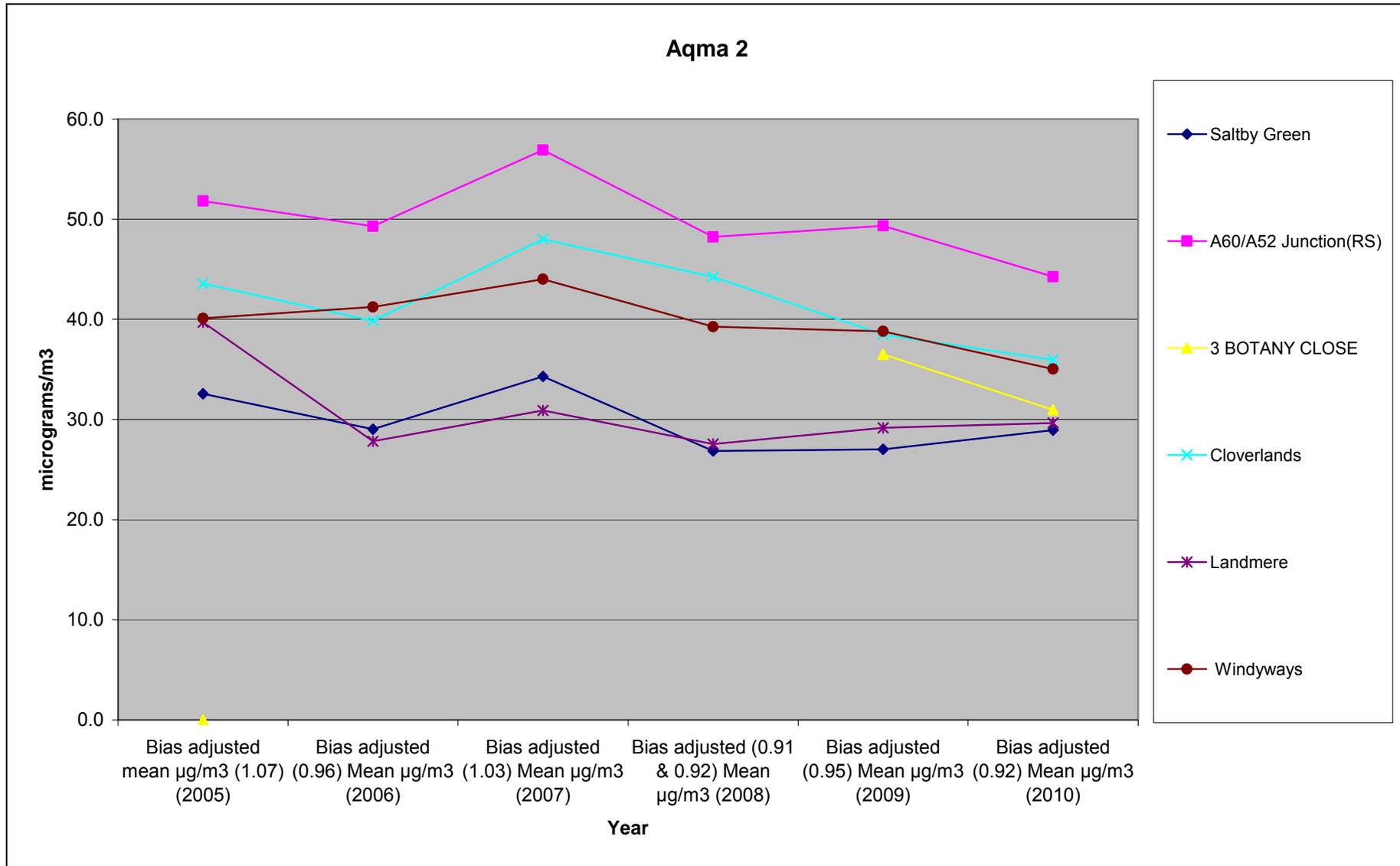
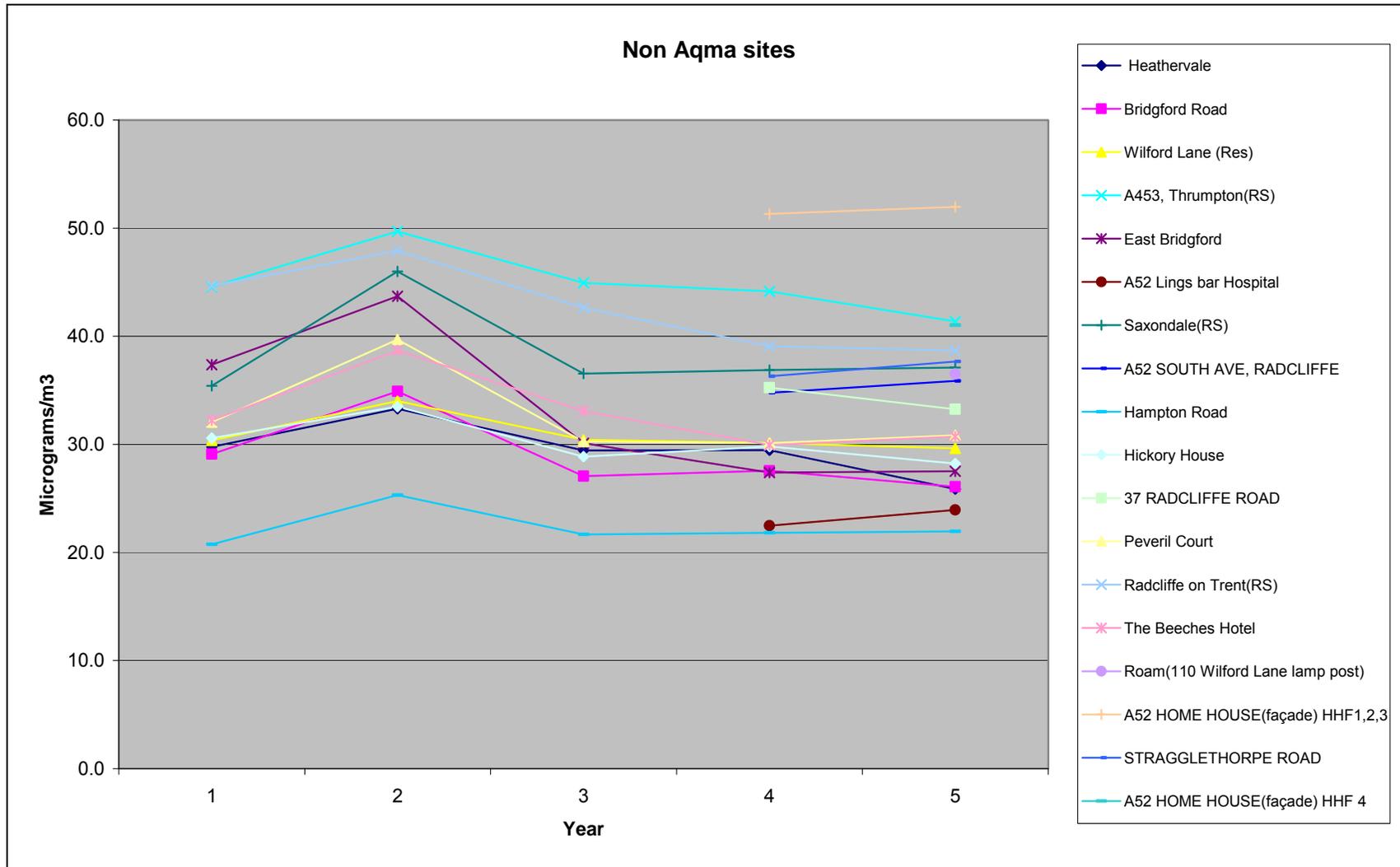


Figure 2.4 Trends in Annual Mean Nitrogen Dioxide Concentration Measured at Diffusion Tube Monitoring sites.



Diffusion tubes in AQMA 1

12 monitoring locations for diffusion tubes were assessed in 2010 with majority of the results indicating results below the 40 µg/m³ annual mean and none above the 60 µg/m³ indicating no breach of the hourly limit. Unless otherwise stated results for diffusion tubes are bias adjusted. Those exceeding the annual mean are highlighted in red in Table 2.5 above and consist of 4 diffusion tube sites in AQMA 1. These sites are discussed below with particular reference to those still indicating high levels and any changes that have taken place in the last year.

The **TBI** site was set up last year to better reflect exposure to the public in this area. The site chosen was at the entrance to the pub as opposed to a crossing point between road lanes (the TB site which has been removed). The new site is not a relevant receptor for the annual mean but would be for the hourly limit. The result is thus compliant with AQO for NO₂ with an annual bias adjusted mean being significantly below the 60 µg/m³.

The **Radcliffe Road tube** is site on the façade of shop approx 2.1-2.2 metres from ground level. There are no relevant exposures to the annual mean at ground floor level in this area as the frontage is populated by shops, although seating area does exist for a café (2-3 seats) which is used infrequently. However, at first floor level several buildings above shops have permission to be residential although it is unclear at the moment as to whether some are in occupation or not. Previous years' results are 38.4 µg/m³ and 40.1 µg/m³. Given that at first floor level it is expected that NO₂ levels will be slightly lower than at ground level it is hypothesized that first floor levels in the area are likely to be less than the 40 µg/m³ AQO, although there does not exist a tool for assessing this more accurately (current level is 40.8 µg/m³). As such the site is in compliance for the 1 hour objective and remains marginal for the annual mean at first floor. There are no plans to move the tube to a higher level as there is no access to this façade to make it practicable to change on a regular basis.

Trent House Flats (THF) site is on the façade of an upper storey residential flat and is representative of residential exposure on the façade. However, the tube location is subject to higher winds than normal and is in an exposed area. This site has been doubled up in November 2009 as levels are consistently close to or marginally above the annual mean AQO and the doubling should improve the accuracy of any results for the site. The 2009 result is 43.3 µg/m³ which was an increase on the previous year (39.6 µg/m³). For 2010 the results is 42.0 µg/m³ which shows a slight fall. It is unknown what the effect of the exposed position is on the site results, however, the increased air flow is likely to over estimate results at this site. The site this year is above the AQO for the annual mean but below the 1 hour surrogate value and is therefore still non compliant with the AQO for the annual mean.

This site is currently the highest NO₂ site at the façade by either measurement or calculation. As such a fall at this site to below the AQO will indicate compliance with the objective to the annual mean within the AQMA 1.

BOX 2.1 of TG(09) indicates that the predicted levels of compliance dates are:

$$2011 \quad 42\mu\text{g}/\text{m}^3 \times 0.828/0.861 = 40.4\mu\text{g}/\text{m}^3$$

$$2012 \quad 42\mu\text{g}/\text{m}^3 \times 0.795/0.861 = 38.8 \mu\text{g}/\text{m}^3$$

Wilford Lane 3 (WL3) was new for 2009 and replaced a tube across the junction at roadside which had no relevant receptor nearby. This tube is mounted on a lamppost and is on the side of the junction where relevant receptors for the annual mean are present, albeit they are set back from the road. Utilising the distance correction tool available from <http://www.airquality.co.uk/laqm/tools/NO2withDistancefromRoadsCalculatorIssue2.xls> to estimate the exposure at the nearest receptor a corrected value of **34.3 $\mu\text{g}/\text{m}^3$** (from **40.3**) is estimated at the nearest receptor at this site. The background value selected is the 2010 value from the published background maps. The calculation is available in Appendix B. This is below the AQO and as such the site is not breaching the AQO for the annual hourly objectives.

The tube at the **Acorn Hotel (Roam)** was a temporary site on Radcliffe road and was removed following resolution of the planning issue that led to its positioning. The levels for the period it was there were below the AQO when annualised and as such this tube was ended.

All other sites in AQMA 1 are below the AQO for the annual mean without any fall off with distance correction being applied.

Diffusion tubes in AQMA 2

6 diffusion tubes sites have been monitored within AQMA 2 in 2010.

The **A52 Ring Road NK (Nottingham Knight)** site continues to be high at roadside. However, this site does not have any relevant receptors nearby for the annual mean at this point around the island. In a direct line back from the island the public house has an outside seating area that is used in the summer months. As the tube is closer to the road than the seating area by several metres and the site is averaging $44.3\mu\text{g}/\text{m}^3$ in 2010, Rushcliffe can state the site is compliant with the AQO (e.g. significantly below the $60\mu\text{g}/\text{m}^3$). As the site has been in place for a number of years it is proposed to keep the site active to enable roadside trends at this junction to be monitored.

Windy Ways (WW) has seen a reduction in exposure in 2010 and has remained below the AQO for the annual mean for the last 2 years making it now three years below the AQO.

The 3BT (3 Botany Close) replaced the non relevant exposure site on the A52 kerbside and had limited data for last years report. For 2010 a greater data capture has been achieved in 2010 (83%) and the resultant annual mean of 31.0 indicates levels are below the AQO at the façade of the property.

The Cloverland (CL) site is located on the closest property to the A52 and is near to the 3BT site. This site has 2 tubes located in close proximity to improve the accuracy at the site. The 2010 results of $36.0\mu\text{g}/\text{m}^3$ indicate a falling level at this site from $38.5\mu\text{g}/\text{m}^3$.

Within AQMA 2 all other sites are in compliance with the AQO's.

Given that the above sites are also considered to comply when taking into account the fall off with distance and the type of exposure being experienced, Rushcliffe can state that **in AQMA 2 all sites were compliant in 2010.**

Diffusion tubes not in AQMA's

18 sites outside of existing AQMA's were monitored in 2010 with diffusion tubes.

The **A453 Thrumpton site** is located on the grass verge of the A453 and as such is expected to be high ($41.4\mu\text{g}/\text{m}^3$ for 2010). The site has relevant receptors some distance from the location (23.8m) and as such there is significant fall off with distance which leads the site to be compliant with the AQO and predicts levels to be below $30\mu\text{g}/\text{m}^3$ ($25.9\mu\text{g}/\text{m}^3$ see Appendix B.)

The **East Bridgford site** is located on the façade of the dwelling and was relocated on the property due to the effects of a domestic boiler which contributed to a high reading in previous R&A rounds. This has moved the monitoring position away from the road boundary a few metres due to the house being positioned on the plot at an angle to the road. To allow for this and to represent worse case exposure at the site a correction should be applied to the site results of $27.5\mu\text{g}/\text{m}^3$. This increases the assessment value to be compared to the AQO to $31.0\mu\text{g}/\text{m}^3$, which is still compliant with the AQO. The correction is calculated by utilising the distance correction tool at <http://www.airquality.co.uk/laqm/tools/NO2withDistancefromRoadsCalculatorIssue2.xls>. The calculation is available in Appendix B.

Site **37RR (37 Radcliffe Road)** has been established from Nov 2009 and has been continued through 2010 resulting in a $33.3\mu\text{g}/\text{m}^3$ for 2010. It was set up to establish levels at first floor where relevant receptors are present for the annual mean AQO. The tube is located back from the façade by 3.3 metres. As such a distance correction to the 2010 bias adjusted mean is required using the distance correction tool at <http://www.airquality.co.uk/laqm/tools/NO2withDistancefromRoadsCalculatorIssue2.xls>. This results in a facade level of $34.2\mu\text{g}/\text{m}^3$. The calculation is available in Appendix B. As such the site remains below the AQO.

Holme House (A52HH) is situated on the A52 trunk road into Nottingham and is positioned on the corner of the junction with Stragglethorpe Road. During 2010 a detailed assessment has been undertaken. A triplicate tube site has been set up on the façade and a further tube on the façade down Stragglethorpe Road. Later on in 2010, following advice from the R&A help desk, a further tube was set up away from the junction on the A52 on the façade (A52/HHF4). The diffusion tube results indicate that the annual mean objective is being significantly exceeded at this relevant receptor with a full 12 month survey producing a bias adjusted result of $52.0\mu\text{g}/\text{m}^3$. This site is subject to a separate detailed assessment report which includes a modelling study for this site. As such the detailed assessment should be referred to for further information on this site. The Detailed assessment has recommended the creation of a further AQMA area.

The **Heathervale site** is currently on a façade but following the residential extension of 22 into the garage this is now closer to traffic than the current location. As such for 2011 the HV site will be moved to 22 Heathervale as shown in Map 2.14

All other locations which are non AQMA sites are below the AQO.

May 2011

Rushcliffe Borough Council

Rushcliffe confirms that no further sites have been identified as exceeding the AQO for relevant receptors. Consequently the diffusion tube monitoring does not indicate any further detailed assessments need to be undertaken in 2011.

2.3.2 PM₁₀

Over 2010 continuous monitoring of particles (PM₁₀) has been undertaken by Rushcliffe Borough Council at one location in the area, the Centenary House, Loughborough Road site. The site has remained the same as for previous rounds of the R&A process. The site is within the AQMA1 area for nitrogen dioxide exceedences and is located close to relevant receptors and the building line. The junction is a busy junction in the AQMA and represents exposure in the area. The monitor is a Sven Leckel Gravimetric monitor that is EU equivalent and therefore the data does not require any further adjustment factors applying. Table 2.6 below shows the annual mean concentrations for the site and Table 2.7 shows the number of exceedences of the daily AQO.

Table 2.6 Results of PM₁₀ Automatic Monitoring: Comparison with Annual Mean Objective

Site ID	Location	Within AQMA?	Data Capture for monitoring period ^a %	Data Capture for full calendar year 2010 ^b %	Annual mean concentrations (µg/m ³)			
					2007 ^{c, d}	2008 ^{c, d}	2009 ^c	2010
pm10	Centenary House, Loughborough Road, West Bridgford	Yes	97.2%	77% 1/1/2010 to 16/10/2010	20.0	20.2	16.6	20.2 90 th %tile= 33

^a i.e. data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

^b i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%.)

^c Means should be "annualised" as in Box 3.2 of TG(09), if monitoring was not carried out for the full year.

^d Annual mean concentrations for previous years are optional.

Table 2.7 Results of PM₁₀ Automatic Monitoring: Comparison with 24-hour Mean Objective

Site ID	Location	Within AQMA?	Data Capture for monitoring period ^a %	Data Capture 2009 ^b %	Number of Exceedences of daily mean objective (50 µg/m ³) If data capture < 90%, include the 90 th percentile of daily means in brackets.			
					2007 ^c	2008 ^c	2009 ^c	2010
PM10	Centenary House, Loughborough Road, West Bridgford	yes	97.2%	77% 1/1/2010 to 16/10/2010	9	16	6	3

^a i.e. data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

^b i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%.)

^c Numbers of exceedences for previous years are optional.

Results of PM10 monitoring suggest that both the PM10 AQS objectives were met in Rushcliffe Borough Council's AQMA in 2010 with levels being below the annual limit of 40µg/m³ and the number of daily exceedences for the 50 µg/m³ limit not exceeding the 35 allowable number of days.

In October 2010 the decision was taken, after consultation with the R&A help desk, to cease sampling at this location. The monitor is to be moved to the Stragglethorpe junction site following the installation power and a base.

The annual daily results for the site are shown in Figure 2.5 below.

The trend over a number of years indicates that pm10 at the site is consistently under AQS objectives and that the trend also over a number of years is downward. This is shown clearly in Figure 2.6 Trends in annual mean pm10 results below albeit a slight increase is noted in 2010 on the previous year.

Figure 2.5 Daily pm10 results for 2010

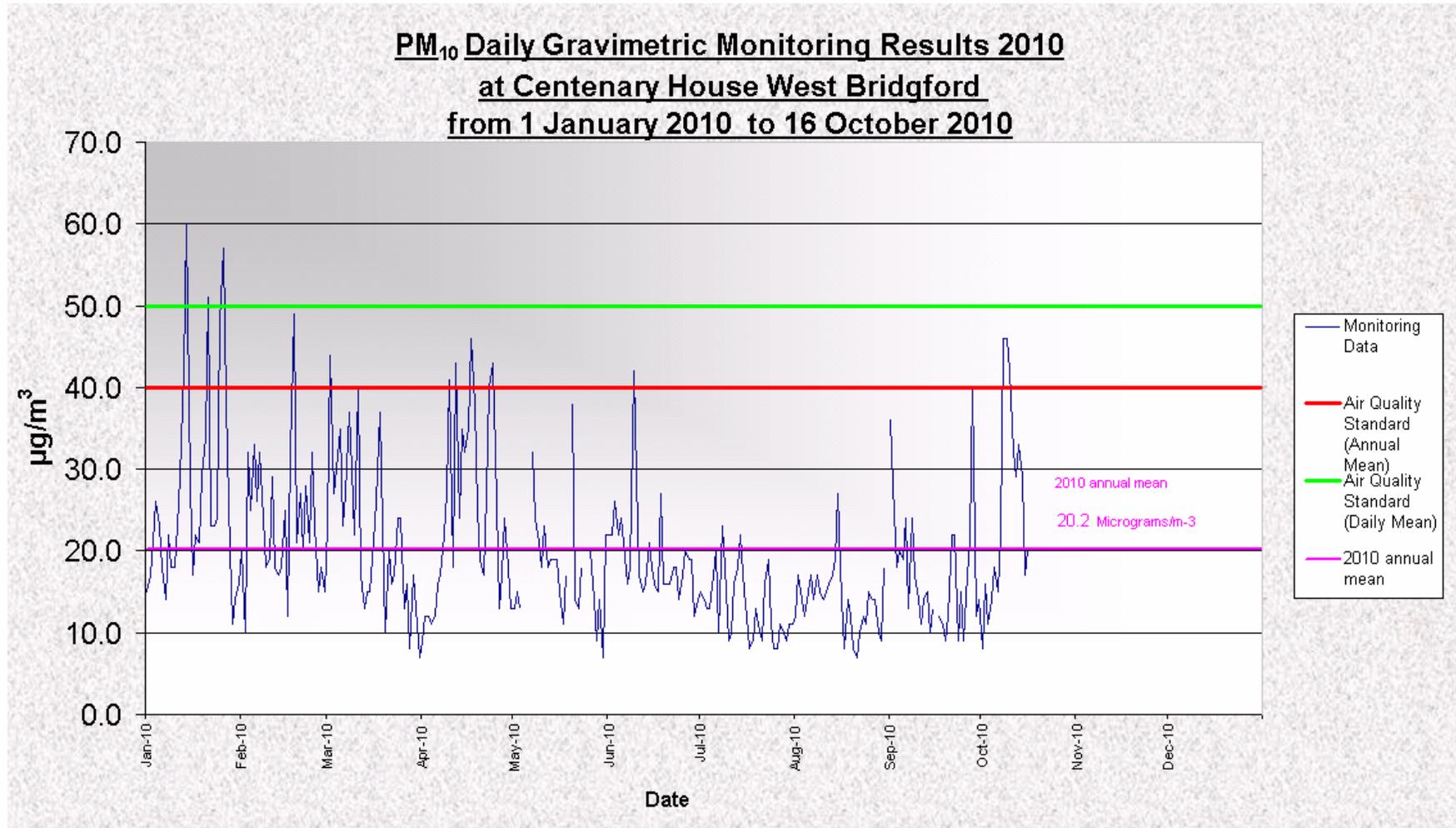
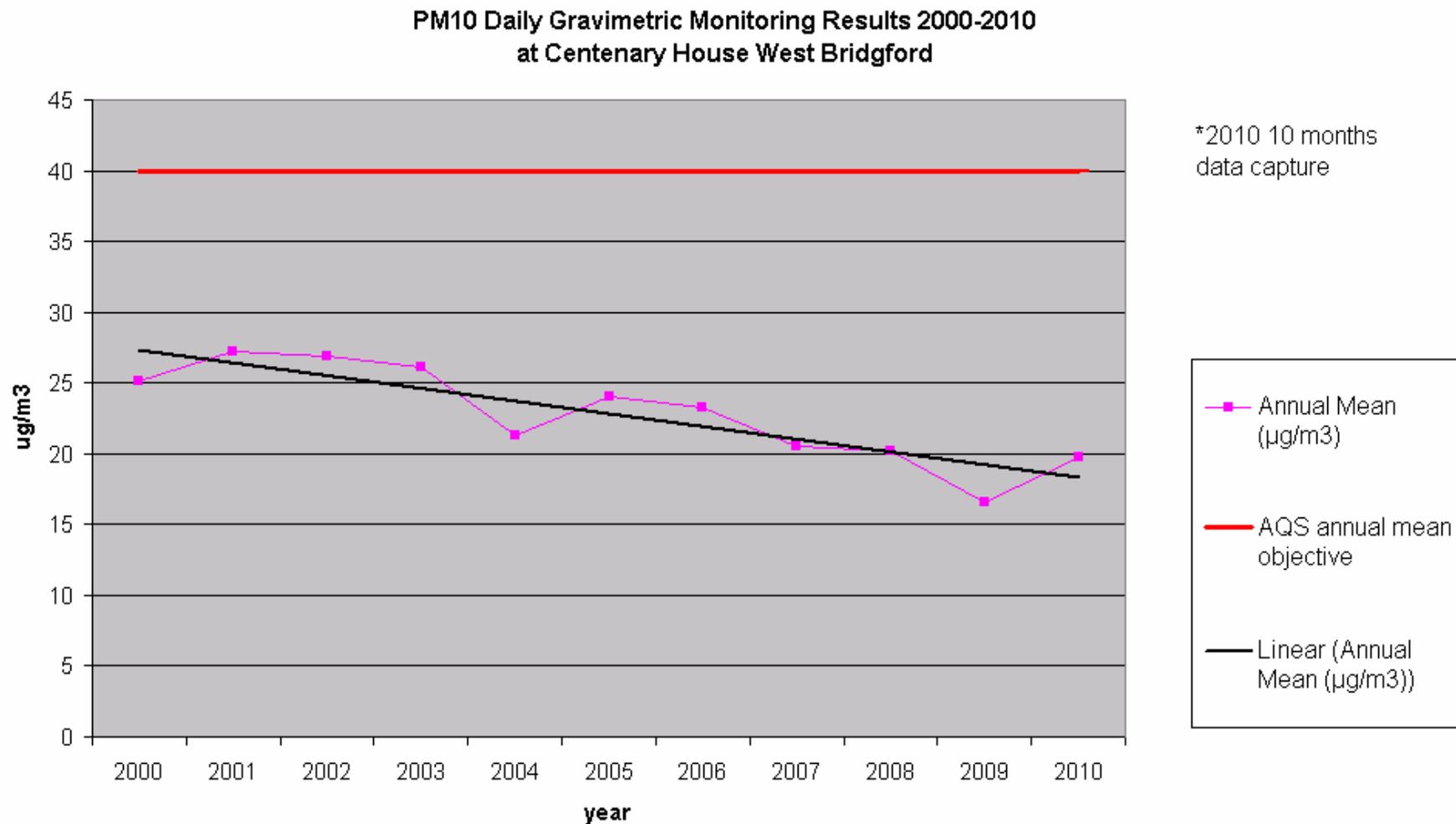


Figure 2.6 Trends in annual mean pm10 results



2.3.3 Sulphur Dioxide

No monitoring has taken place for Sulphur Dioxide in 2009.

2.3.4 Benzene

No Monitoring has taken place for Benzene in 2009

2.3.5 Other pollutants monitored

No monitoring has taken place for other pollutants in 2009

2.3.6 Summary of Compliance with AQS Objectives

With the exception of the A52 Stragglethorpe Junction Rushcliffe Borough Council has not measured concentrations of nitrogen dioxide above the annual mean objective at relevant locations outside of the AQMA, and **will not need to proceed to a Detailed Assessment** for any other sites.

The A52 Stragglethorpe junction is the subject of a separate Detailed Assessment report for the area around the junction of the A52 and Stragglethorpe Road, Radcliffe on Trent, Nottinghamshire which has produced a recommendation to proceed to declare a further AQMA.

Levels in AQMA 2 have all been assessed as being in compliance in 2010 for the second year. It is recommended to review this AQMA following 2011 results.

Levels in AQMA 1 have indicated the majority of sites are below the objectives but notably the sites Trent House Flats (THF) and Radcliffe Road (RR) are marginally above the annual mean. The area around the Trent Bridge Inn and generally at roadside are high, but not exceeding the surrogate 1 hour level of $60\mu\text{g}/\text{m}^3$ currently. It is not expected that levels for the 1 hour will be exceeded.

The pm10 monitoring indicates compliance with the AQO for this pollutant, the same as for previous years.

The PM10 is to be re-sited in 2011 to the Stragglethorpe Junction with the A52 to determine impacts from traffic related PM10 where it is known NO2 levels are high.

The NO2 monitor has shown 3 consecutive years now of a downward trends along the Loughborough Road in AQMA1 and indicates compliance to the annual mean and 1 hour AQO along this road length within the AQMA. Within the AQMA air quality levels do vary. The data for the NO2 analyser exhibits some inherent inaccuracy this year due to lower data capture than required resulting in the reported result being annualised.

The main areas of concern for NO2 in the existing AQMA's surround the Trent Bridge/Radcliffe road Junction, the out bound Radcliffe Road is still close to the objective as too is the Lady Bay Junction (e.g. TBLA and TBLB sites).

3 New Local Developments

3.1 Road Traffic Sources

Rushcliffe Borough Council has identified one road in the borough for which major improvements are currently being undertaken.

This is the A46, for which construction work widening to dual-lanes begun in 2009. The scheme has been subject to an air quality assessment as part of a full EIA and public enquiry which concluded that the widening of the A46 would not result in any exceedences of the AQS objectives. The road is still under construction with various elements open to traffic but significant portions still to be completed and not open to traffic in 2010. An extract from the reports states that *“We have calculated concentrations of the main road traffic pollutants with and without the Scheme at a selection of residential properties along the existing A46, the new alignment and surrounding side roads. Baseline and operational pollution levels at all the selected residential properties are below the current air quality objectives, EU and limit values. Overall, the Scheme would have a moderate beneficial impact on community exposure to road traffic pollution.”*

When the Scheme is fully open in 2016, 84% of properties within 200m of the road would experience an improvement in air quality and 16% would experience a worsening in air quality. The air quality impact assessment concludes that the Scheme would not result in any significant air quality problems due to changes in road traffic emissions. The assessment uses a worst case scenario.”

There is no requirement to proceed to a Detailed Assessment for this road scheme but Rushcliffe will review the impact on air quality of this road once the road is fully opened. The air quality assessment can be viewed at <http://www.highways.gov.uk/roads/projects/4406.aspx>

Rushcliffe Borough Council has reviewed the traffic flows on major roads, B roads and C roads in the district. A table showing the full data set can be seen in Appendix G. Rushcliffe can confirm that no significant increases in traffic have occurred since the last review and assessment that require any detailed assessment or screening.

A list of roads under construction in the borough is contained in Appendix F. All of these roads are linked to housing schemes and have been subject to review at the planning stage. None of the roads are expected to have significant traffic flows.

Rushcliffe can state that there are no new or newly identified road traffic sources that meet the criteria.

3.2 Other Transport Sources

Rushcliffe Borough Council confirms that there are no new 'other transport sources' since the last Review and assessment report in their local authority area meeting the specified criteria.

3.3 Industrial Sources

In 2010 John Brookes Saw Mills was granted planning permission by the Nottinghamshire County Council for the erection of new industrial building and installation of 3mw wood fuelled renewable energy biomass plant (resubmission due to change in technology from gasification to steam turbine biomass boiler). The plant will be permitted by the Agency as an A1 installation. An air quality assessment was undertaken by the applicant and reviewed by this service. No objection was raised by Rushcliffe but a recommendation to undertake subsequent verification sampling was not taken up by the County. The conclusions of the air quality assessment is summarised below:

An impact assessment has been undertaken for predicted annual mean NO₂ and PM₁₀ concentrations at each identified sensitive receptor location, in accordance with NSCA guidance. Negligible impacts were predicted at all receptor locations for annual mean PM₁₀. Although a slight impact was predicted at some sensitive receptor locations for annual mean NO₂, the magnitude of such impacts are minimal in the context of the methodology used. Impacts can range from negligible to very substantial, adverse. Furthermore, predicted annual mean NO₂ concentrations (process contribution + background) were significantly below the AQO level at all locations surrounding the proposed plant.

The details of the decision notice and relevant planning application documents can be found at

<http://www.nottinghamshire.gov.uk/home/environment/planningmatters/developmentcontrol/planning-applications.htm>

Application reference F/1908

The same site has been operating an exempt waste composting facility for a number of years. Due to increased throughput and the site being close to a water abstract point the site is now permitted by the EA with a bespoke permit. Comments have been made by this LA and the HPA concerning the potential for particulates and bio aerosols to be generated by the site, however the Agency are satisfied that BAT employed at the site will be sufficient to mitigate this potential and conditions are in the bespoke permit to control such emissions. Relevant receptors are some 400m from the site and as such this LA does not consider any further action is required. It is Rushcliffe's view that there is no requirement to proceed to a detailed assessment once this site is operational based on the conclusions of the air quality assessment and consultation with the EA.

Rushcliffe Borough Council confirms that there are no other new industrial sources since the last review and assessment report in their local authority area meeting the specified criteria.

3.4 Commercial and Domestic Sources

In the previous R&A report the County Council has provided a list of schools in the Rushcliffe area which are proposed or have moved to biomass wood pellets, the list is shown in Table 3.1 and Table 3.2 below and has not been amended since the last report. Most of these will replace coal or oil boilers in existing locations and should lead to reduced emissions in particularly where they are replacing coal powered boilers. It has become apparent since the last report apparent that 2 of these appliances in converting from coal to wood chip are in smoke control areas and as such relied on the exemption in the order to burn the coal. Given that the exemption was specific to coal this has placed the 2 appliances as operating contrary to the smoke control legislation under the Clean Air Act 1993. Work is currently ongoing to determine the emissions rates of these two conversions and amending the smoke control orders should a reduced and satisfactory emission rate be determined. It is, however Rushcliffe's view that emissions will be less from these appliances and detailed assessments will not be required, but a screening assessment should be undertaken prior to re-granting any exemption. At this time this service is awaiting the production of screening assessments for these two boilers. The 2 school boilers in question are the James Peakcock infant's school and the Rushcliffe Comprehensive. The other boilers listed have now had the boilers tested as satisfactory for use in smoke control areas and as such the appliances meet the CAA emission limits. Confirmation of this is expected in due course.

Rushcliffe Borough Council confirms that there are no areas of significant domestic fuel use in their local authority area.

Table 3.1 proposed/completed biomass plants in schools in Rushcliffe

Site	Installed Capacity	Replacing	Type	Pellet Used p.a. (Tonnes)	CO2 savings (tonnes)	Project Status (completed)	Location
James Peacock Infant & Nursery School	150	Coal Boiler	Converted coal boiler	10.00	14.40	Completed 2004	Rushcliffe
The West Bridgford School	2200	Coal Boiler	Converted coal boiler	369.00	531.36	Completed 2006	Rushcliffe
Lady Bay Primary School	100	Coal Boiler	New pellet Boiler	50.64	72.92	Apr-09	Rushcliffe
Brookside Primary School	220	Coal Boiler	New pellet Boiler	22.60	32.54	Jul-09	Rushcliffe
Rushcliffe Comprehensive	900	Oil Boiler	New pellet Boiler	260.50	325.10	Jul-09	Rushcliffe
Abbey Road Primary School	220	Coal Boiler	New pellet Boiler	38.21	55.03	Sep-09	Rushcliffe
West Bridgford CHUB	150	Replace Existing site	New pellet Boiler	61.27	55.88	Oct-10	Rushcliffe

Table 3.2 additional list

Site	District	Street	Area 1	Area 2	Postcode	Annual Heat Load	kW h	Boiler Type	Fuel Type	Tonnes Pellet / Year	CO2 saving compared to gas	CO2 saving compared to current fuel
Orston Primary	Rushcliffe	Church Street	Orston	Orston	NG13 9NS	56,824	120	Pellet Boiler	Stemwood & Chemically untreated wood residues	13.93	15.61	22.05
James Peacock Infants School	Rushcliffe	Manor Park	Ruddington	Nottingham	NG11 6DS	121,891	180	Pellet Boiler	Stemwood & Chemically untreated wood residues	29.88	33.48	47.29

3.5 New Developments with Fugitive or Uncontrolled Sources

The construction element of the A46 has been ongoing in 2010 and will be continuing into 2011 and beyond. The current progress on work can be viewed at <http://www.highways.gov.uk/roads/projects/9201.aspx>

Certain parts of the road are complete but a significant element is still requiring work. The website above indicates the following text indicates the status on the building project as of April 2011.

Works planned for the period **April to June 2011** include:

General Site Activities

- The remaining earth works will be completed.
- All remaining site clearance undertaken.

Widmerpool to Bingham Railway - South Section

- Widmerpool Junction - No changes at this junction during the period.
- Kinoulton Lane to A606 link - Work to provide the link has commenced. Newt trapping will begin in early April with construction commencing on much of the road on completion of the trapping. The current programme has this link open to traffic in late autumn 2011.
- Kinoulton Lane - Access to A46 closed. The new link to Roehoe junction is currently programmed for opening in summer 2011.
- Roehoe Junction - Completion of this junction is currently anticipated to be summer 2011.
- Owthorpe Junction - The bridge was open to east west traffic on 29.03.11. Access to the A46 north and south bound is via a "T" junction arrangement utilising the western loop of the new junction.
- Colston Road - Will close from 11 April to the end of 2011 to allow the bridge and side road works to be completed. Once re-opened there will be no direct access onto the A46 as the bridge is to take traffic over the new bridge only.
- Colston Gate - In summer 2011, following the main A46 traffic switch, the connection with the old A46 will close. This will allow the western bridge approach works and local connection link between Colston Gate and the old A46 to be constructed. Once re-opened there will be no direct access to the new A46.
- Stragglethorpe Junction - The eastern roundabout will open following a weekend closure of Nottingham Road east on 9 and 10 April. Following this work traffic will be utilising both roundabouts of this junction and travelling under the new bridge to access the A46 as in the current arrangement.
- Cropwell Road - The structural crossing layer (deck) has been poured and work is progressing. Traffic on the A46 will be crossing the bridge in summer 2011 after which time excavation work on the eastern side can commence. The re-opening date for this road is currently autumn 2011.
- Radcliffe Road - No works are planned within the period to affect this road. Advance notice - Commencing in summer 2011 a closure will be needed to enable deep drainage works and the excavation of the eastern section of the underbridge to be undertaken. Access / egress to the village will be via Hardigate Lane. The duration of this closure is currently under review.
- Henson Lane - New lane open.
- A52 Saxondale (Bingham Island) - The layout on the new Bingham Island has been amended and is likely to remain unchanged until the A46 traffic is taken over the top of the island. This is currently planned for late 2011.
- Bingham Railway Bridge - The new railway bridge is installed and excavation under it will be ongoing during the period.

All dates are per the current programme and are subject to change.

Bingham Railway to Newark - North Section

- Margidunum Junction - New bridge now open
- Newton Lane - New lane with connection to western roundabout at Margidunum now open.
- Springdale Lane to Butt Lane byway - The byway will remain closed until summer 2011.
- Butt Lane Overbridge - Traffic is scheduled to be using the bridge by autumn 2011. A second short duration closure will be needed during the school summer holidays to tie-in the new and existing surfacing.
- Tenman Lane - No activity in the period to affect this lane.
- Car Colston Overbridge - The eastern beams will be installed in August 2011 once traffic is on the new carriageway.
- Red Lodge Junction - The western part of the junction will be in operation from May 2011, with provision for access to the A46 made via a temporary "T" junction. The eastern half of the junction will remain unused until early 2012.
- Red Lodge Lane - This lane will open again at Easter 2011.
- Slacks Lane - Once Red Lodge Lane re-opens Slacks Lane will be permanently closed.
- Coneygreys Spinney - From May 2011 residents will be using part of the western junction to access the new A46 from a "T" junction location close to the bridge. All A46 traffic will be using part of the Coneygreys Spinney link road with ramps used to connect the old and new A46 near Longhedge Lane.
- Inholms Road - Access from Flintham onto the A46 will be closed for a period of approximately 8 weeks from May 2011 following the switch in the A46 traffic onto the new north bound carriageway. This closure will allow work on the eastern part of the junction to be completed. A signed diversion will be in place via Flintham Grange, Shelton & Elston.
- Flintham Junction - From May 2011 there will be a number of temporary traffic layouts used at this junction. The final junction layout will not be in place until early 2012. This is one of the final sections of the road to open.
- Syerston Bridge - Due to various delays the new bridge is scheduled for opening by summer 2011.
- Lodge Lane Junction - - Traffic is scheduled to move onto the bridge in late spring 2011.
- Moor Lane - The bridge is open.
- Hawton Lane Overbridge - The new bridge is scheduled to open to traffic in late spring 2011.
- Farndon Roundabout - Traffic using the roundabout will be travelling around the new, enlarged roundabout during the period.
- Cress Lane - The existing access into Crees Lane will be closed off once the new roundabout is in operation.
- Farndon Pedestrian Underpass - The basic underpass structure is now in place. Pedestrian / cycle use of the underpass is not likely to be possible until summer 2011.

All dates are per the current programme and are subject to change.

The construction and operation phases have been the subject of air quality assessments at the consultation phase with the public enquiry considering impacts to the environment and local residents. Dust control and other mitigation measures have been implemented by the construction company undertaking the work for the Highways Agency.

Rushcliffe confirms that there are no other new or newly identified local developments which may have an impact on air quality within the Local Authority area.

4 Local / Regional Air Quality Strategy

Rushcliffe Borough Council have adopted a regional Air Quality Strategy, this is available via the council's website at <http://www.rushcliffe.gov.uk/upload/public/attachments/248/Breathoffreshairfornotts.pdf>.

This strategy has been prepared by a partnership of Nottinghamshire Local Authorities, the Environment Agency, The Health Protection Agency and the Highways Agency. The work has been led by the Nottinghamshire Environmental Protection Working Group. This framework identifies and agrees an effective strategy to improve air quality in the next decade throughout the whole of Nottinghamshire and also reduce greenhouse gas emissions particularly CO₂. The strategy is entitled 'A breath of fresh air for Nottinghamshire, An Air Quality Improvement strategy for the next Decade' and will be launched on April 25th 2008.

The Framework for Action seeks to fulfil the following main objectives:

- Minimise air pollution and the impact of global warming and climate change.
- Encourage sustainable development in Nottinghamshire to protect the health and wellbeing of the population.
- To work with businesses, stakeholders and the residents of Nottinghamshire to encourage sustainable improvements in air quality.
- Support and maintain the work of the Nottinghamshire Air Quality Steering Group.
- Complement other county wide groups and strategies adopted and supported by Local Authorities and the County Council and other organisations such as the Environment Agency, Primary Care Trusts, Highways Agency and the Health Protection Agency.
- Ensure that the strategy to improve air quality in Nottinghamshire is reviewed by 2011.

The Council is a member of the Nottinghamshire Environmental Protection Working Group (NEPWG) formed in partnership with Nottinghamshire County Council, Ashfield District Council, Bassetlaw District Council, Broxtowe Borough Council, Gedling Borough Council, Mansfield District Council, Newark and Sherwood District Council Nottingham City Council, Environment Agency, Health Protection Agency and the Highways Agency.

The NEPWG works under the direction of the Nottinghamshire Chief Environmental Health Officers Group. The NEPWG enables the authorities to work collaboratively on the full range of pollution issues, demonstrating that liaison on a technical level is already well established.

The Nottinghamshire Air Quality Steering Group was formed in 1998 and comprises representatives from each local authority, Health Protection Agency, Highways Agency, Nottinghamshire County Council University of Nottingham and the power generators. The group acts as a consultation body to advise local authorities of procedures, to ensure wide consultation in relation to air quality issues, and in particular air quality reviews and assessments.

5 Planning Applications

The planning application approved in 2010 are shown below in Table 5.1 below.

Table 5.1 significant planning applications approved in 2010

Housing sites				
Planning ref	Site name	No. of dwellings	Other	
10/00692/REM	Land north west of Gotham Road, East Leake	77		Approval of Reserved Matters in respect of permission 07/00524/OUT
10/00734/REM	Land and buildings at former RAF Newton, Newton	165		
10/00559/OUT	Cotgrave Colliery, Stragglethorpe Road	up to 470	employment uses (B1, B2 & B8); open space; landscaping; footbridge crossing the canal; associated works including roads, cycleways, footpaths and car parking (revised scheme)	
Employment sites				
Planning ref	Site name	Proposal	Area	Floorspace
10/00760/FUL	Cedars Farm, Butt Lane, Normanton on Soar	Change of use of barns to form 5 office units	0.13ha	Includes a small scale biomass boiler 100KW B1a: 1050 sqm
10/00559/OUT	Cotgrave Colliery, Stragglethorpe Road			B1, B2, B8

There are no sites in AQMA or if granted would impact on traffic in AQMA's.

The Cotgrave colliery site has been subject to an air quality assessment the impacts of which were not considered to be significant on air quality. The application and AQ can be view at <http://www.document1.co.uk/blueprint/> with search reference 10/00559/OUT.

Several conditions have been placed in the permission granted which will be assessed at reserved matters stage to ensure air quality objectives are not exceeded. These include condition 27, 38 and 39 of the permission which can be viewed from the above link

Rushcliffe Borough council had received a number of applications for larger developments in 2008/9 which have been ongoing over 2010 Below is a summary of the sites with further discussion. In many cases the sites are in proposed on areas

where new built properties should not experience any poor air quality above the AQO, however, these sites may contribute cumulatively to increase commuter traffic which is the cause of the exceedences in existing AQMA, consequently they are of interest and where possible mitigation measures have been discussed.

Land at Sharphill To East And West Of Melton Road Edwalton Nottinghamshire

Proposal: Mixed use development of up to 1200 dwellings; primary school; business innovation centre; further education centre; 100 bed hotel; local centre with retail units, community building and health centre, sports facilities and community park; associated road

Decision: **Refused**

Appeal status: **Allowed**

Application number: 08/00664/OUT Melton Road, Edwalton (Sharphill)

No construction has begun on this site in 2010. An application for reserved matters is expected in 2011 in order to prevent the permission from lapsing. At the time of writing an application for reserved matters for just 3 properties has been received.

Nottingham Gateway (South Of Clifton) Land Southeast & Northwest Of A453 Green Street Barton In Fabis Nottinghamshire

Proposal: Outline application comprising residential development up to **5,500** dwellings; employment uses of mixed B1, B2 and B8 on up to 30 hectares; retail development (Classes A1 - A5); leisure use; community buildings; extension to Nottingham Express Transit with

Decision: Pending

Application number: 09/01025/OUT

This application has been formally withdrawn following the delay with the A453 widening and the change in Government policy toward housing development..

Nottingham (Tollerton) Airport

This relates to an area of about 7.7 hectares, currently consisting of hangar buildings, hard standing, etc. The proposal is to redevelop the site as a business park, including up to 28,600 sqm of B1 (Office/Research and development) buildings and a new airport control tower.

Outline planning permission was granted on 20 November 2009, subject to a number of conditions and a 'Section 106' legal agreement, requiring off-site highway improvement works. This service is not aware that works have commenced on this site in 2010.

Cotgrave colliery development

This would be a mixed employment and retail scheme of up to 500 houses on the former Cotgrave colliery site. The developers, East Midlands Development Agency and English Partnerships, held an exhibition and consultation event in Cotgrave on 22 November 2007.

Planning permission has been granted in 2010 and is discussed above.

RAF Newton.

RAF Newton is a brown field site that was speculation for an eco town. This proposal is longer policy following Government policy changes. The site though has received permission for development in several parts and will continue to achieve applications in the future.

In 2007 outline permission was given for Mixed use scheme including use of Hangars 1, 3 and 5 for B8 use; demolition of former Officers accommodation and construction of 165 dwellings with community facility, access and open space (revised proposals). In early 2010 a further application has been received for further housing and business use. The site is situated outside of the main urban areas and development should not result in AQO being exceeded even if further development takes place.

A453 dueling

The A453 widening proposal will not take place in the immediate future and is not a listed works for the HA at this time.

Land South of Wilford Lane, West Bridgford, Residential development and open space and related infrastructure. 287 Houses, 5.7 Ha. Outline permission is being sort in 2009. 07/01870/OUT

Permission was granted with conditions on the 13 January 2010. Conditions relate to construction method statement, to control among other things dust from demolition and building works. A requirement to submit a cycling and walking strategy to reduce car usage and aid access to schools and other local amenities by non car use. The homes shall meet code 3 minimum of the code for sustainable homes.

Land North of Bingham.

The Crown estates has submitted a scoping opinion request in 2010 for up to 1000 residential dwellings (C3); 15.6 hectares of employment development (B1, B2 and B8); local centre comprising up to 300m² of retail floorspace (A1), primary school (D1), health centre (D1) and community centre (D2); a 1.6 hectare mixed use site (B1, B2,B8 and car parking); allotments and open space (including play areas and a community park); flood management and drainage works; transport and access works; and ancillary works. In early 2011 an application has been received which is currently being considered by the LPA. AQ assessments have accompanied the applications. No decision made at this time.

Tescos store Land north of Bingham

1.65 Hectare Tesco's store with 221 parking spaces on land North West of Bingham. Due to the site being across a railway crossing there are concerns over traffic build up on the Bingham side. The Application has a supporting AQ assessment and at this services request looked also at cold start emission. No significant impacts were highlighted. No decision has been made by the LPA with regards to this application.

6 Air Quality Planning Policies

Rushcliffe Borough Council currently has no local planning policies dedicated solely to air quality; Policy G1 of the Rushcliffe Borough Non-Statutory Local Plan does cover issues in relation to pollution. Above this, planning decisions where air quality is a consideration are informed by national policy in PPG13 and PPG23 in particular, and at a regional level by Policy 36 of the East Midlands Regional Plan. Since its adoption in March 2009, the Regional Plan forms part of the Borough's statutory development plan.

In accordance with Policy 36 of the Regional Plan, it is intended that the Council's Local Development Framework (LDF) will, in time, set out new policies that contribute to reducing air pollution. In particular, a Supplementary Planning Document relating to air quality is likely to be prepared. However, work on it cannot be undertaken until the main elements of the LDF, specifically the LDF's Core Strategy, have been progressed further. At present, it is envisaged it will be around 2 years before the SPD can be completed.

In the interim the Environment & Waste Management Service have produced a non-statutory advice guide for developers with regards to air quality and the undertaking of air quality assessments which can be accessed from Rushcliffe's Website at <http://www.rushcliffe.gov.uk/doc.asp?cat=9441&doc=10663>

There hasn't really been a change in this position in 2010. The reason being is because of a changed approach to planning by the incoming Government has meant additional work being required before going on to the next formal stage of our LDF. The expected date for publication of the LDF's Core Strategy has, as a consequence, effectively been put back by a year.

7 Local Transport Plans and Strategies

Nottinghamshire County Council, in partnership with Nottingham City Council has produced the Local Transport Plan and the main function of the Plan is to set out the local transport strategy and priority areas for investment over a five year period.

The plan area includes Rushcliffe, the City of Nottingham, and the neighbouring boroughs of Broxtowe, Gedling, and part of Ashfield. The objectives of the plan are based on the Governments "Shared Priority for Transport" as well as three locally determined objectives. The three relevant themes for the Plan are managing congestion and improving air pollution and improving quality of life.

The LTP Objectives are:

- A. To increase sustainable accessibility to the City Centre and district centres in ways which enhance economic activity, encourage development in and reduce social exclusion from these centres,
- B. To reduce traffic growth and to encourage modal change away from the private car particularly for work journeys to the City Centre,**
- C. To encourage safe walking and cycling for short journeys including travel to schools, shops and other local facilities
- D. To improve integration and interchange between modes
- E. To integrate land-use and transport planning by ensuring all new major development is well connected to the public transport system and accessible by foot / cycle,
- F. To maintain and enhance Greater Nottingham's accessibility to regional, national and international markets, particularly by modes other than the car
- G. To reduce social exclusion and to improve the accessibility to transport for disadvantaged groups, particularly disabled people
- H. To relieve communities from the adverse effects of through traffic, particularly heavy goods vehicles,**
- I. To maximise the efficiency and maintain the structural integrity of existing transport networks,
- J. To increase transport choice in rural areas,
- K. To improve air quality within the Plan area and to alleviate other transport impacts upon health, and**
- L. To improve road safety, particularly for vulnerable road users.

Road transport is the major source of pollution in Rushcliffe and the Greater Nottingham Local Transport Plan (LTP) has played an important role in working towards improving air quality, and the main focus of the air quality action plan has been linked around the measures in the LTP to reduce transport emissions in AQMA 1 and 2.

Rushcliffe Council regularly meets with the Local Transport Plan Manager at the Nottinghamshire County Council to discuss the progress of the measures set out in

the AQAP. The aim of the meeting is to move forward the key objectives set out in the action plan looking at such matters as improving traffic flows, park and ride systems, bus priority routes, improvements to public transport and considering air quality impacts from major developments. The meetings enable this authority to link into the LTP and influence transport planning to improve air quality with in the Borough that may be directly outside of its control. A target has been set to meet with the LTP on three occasions annually.

The Local Transport Plan for Greater Nottingham 2006 – 2011 can be viewed or downloaded from

http://www.nottinghamshire.gov.uk/home/traffic_and_travel/strategy-policy/ltp.htm

The existing Local Transport Plans expires on 31 March 2011 and the NCC transport planners are have now developed the third Local Transport Plan. (LTP3).

The Local Transport Plan (LTP) sets out Nottinghamshire's transport strategy and outlines a programme of measures to be delivered over the short, medium and long term. The strategy covers all types of transport including public transport, walking, cycling, cars and freight.

The current Local Transport Plan (known as the third Local Transport Plan) covers the whole of the county and will run from 1 April 2011 to 31 March 2026.

The third Local Transport Plan is made up of two separate documents:

- the [Local Transport Plan strategy](#) which details the County Council's vision and the strategy to deliver the vision, and
- the [Implementation Plan](#) which details the transport improvements that will help deliver the strategy.

The Plan was developed following extensive consultation with the public, County Council members and stakeholders. [Summaries of the responses from the three rounds of consultation](#) are available.

The County Council has also undertaken a [Strategic Environmental Assessment of the Local Transport Plan](#). and a [Habitats Regulations Assessment of the Local Transport Plan](#).

This identified the impacts that the strategies may have on the environment and habitats and helped shape the strategy.

The County Council has submitted a [Local Sustainable Transport Fund](#) bid for funding to complement the measures included in the Local Transport Plan.

8 Climate Change Strategies

Climate Change - A climate change strategy and action plan was being developed at the time of the last report. And good progress has been made in its development and implementation. Since then the climate change strategy and action plan has been approved by Cabinet on 9 Feb 2010. Implementation has continued since then. As of 27 Jan 2011 the plan was 42% completed. 30 Actions had been completed, 36 actions had been started and 13 actions had yet to be started. The Climate change strategy is available at

<http://www.rushcliffe.gov.uk/doc.asp?cat=11138>.

As part of this strategy a Carbon Management Plan for the Borough Council is in development and an investigation into the potential to install renewable energy on council owned assets.

9 Implementation of Action Plans

The air quality action plan was drawn up to outline what actions can be taken by Rushcliffe BC and other partner organisations to work toward reducing nitrogen dioxide levels within the declared AQMA's to below the National Air Quality Objectives at relevant receptor locations. The main measures of the action plan are to:

- provide information and awareness
- consideration of alternative means of transport
- road network management
- management of emissions
- planning considerations

Within Rushcliffe and for most Local Authorities road transport is the major source of NO₂ and is the underlying cause of the declaration of AQMA's.

The second Local Transport Plan (2006/07-2010/11) set out the local transport strategy and priority areas for investment over the five year period and included the City of Nottingham, the boroughs of Broxtowe, Gedling, Rushcliffe and part of Ashfield. The integration of the Action Plan with the Greater Nottingham Local Transport Plan was the main focus of this action plan and revolved around:

- measures to reduce congestion,
- promotion of alternatives to car travel, and
- general reduction measures to reduce transport emissions.

Regular meetings continue to take place between Rushcliffe BC and the Local Transport Plan Manager at Nottinghamshire County Council (NCC) in recognition of the main cause of declaring AQMAs being traffic pollution on NCC road network in AQMA 1. The aim being the reduction in traffic flow in the area and therefore a reduction in the emissions within AQMA 1. It has been agreed to schedule three meetings in each year to discuss the progress made with the NCC measures in the AQAP and to provide feedback to the LTP on monitoring data undertaken by Rushcliffe.

Table 9.1 details progress of the measures implemented by the County Council in 2010/11 as well as those that are ongoing. Table 9.2 details the indicators used to measure the individual measures; a colour coding scheme is used to easily identify which targets are being met and which are behind schedule. The measures reflect the strategy contained within the Greater Nottingham Local Transport Plan 2006/07-2010/11 and the measures contained within the Congestion Delivery Plan for Greater Nottingham 2006/07-2010/11 (updated November 2009).

The third Local Transport Plan (LTP3) for Nottinghamshire came into effect from 1 April 2011. The LTP3 was drawn up in consultation with the public, stakeholders and County Council elected members. The strategic goals of the LTP3 are to:

- provide a reliable, resilient transport system which supports a thriving economy and growth whilst encouraging sustainable and healthy travel

- improve access to key services, particularly enabling employment and training opportunities, and
- minimise the impacts of transport on people’s lives, maximise opportunities to improve the environment and help tackle carbon emissions.

The consultation identified twelve local transport objectives that will be addressed to help deliver the LTP3 strategic goals. Delivery of the local transport objectives will also help deliver air quality improvements; and the table below details the impact that delivery of each of the objectives will have on the air quality improvements within the AQMA.

Major positive Impact	Positive Impact	Minor positive impact	No impact	Minor negative Impact	Negative Impact	Major negative impact
Local Transport Plan objectives						

The LTP3 commits to working in partnership with the district councils to deliver air quality improvements generally; but particularly within the AQMAs. The LTP3 recognises the role of the Air Quality Action Plan (AQAP) to help provide a systematic way of joining up air quality management and transport planning.

The Comprehensive Spending Review, announced on 20 October 2010, detailed several changes in local transport funding. The DfT will reduce overall transport funding by 15% in real terms over the next four years, making savings of 21% from the revenue budget and an 11% reduction in capital spending. The funding for local transport improvements, such as addressing congestion or air quality, is called the integrated transport block and is calculated by DfT through needs based formulas. The integrated transport block for Nottinghamshire in 2011/12 represents a reduction in funding of £5.73m or 46% in comparison to the initial 2010/11 funding allocations (before the Government delivered a 25% in-year cut in June 2010).

These reductions in funding will have a serious impact on the delivery of transport improvements within the AQMA, as detailed within the AQAP.

The County Council is developing a joint Local Sustainable Transport Fund (LSTF) bid with Nottingham City Council. Whilst the contents of the LSTF bid are still to be determined it is anticipated that they will contain actions that will help improve journey times, and reduce emissions from transport; which will have a positive impact on the AQMA.

Table 9.3 indicates the measures that have been identified for Rushcliffe to implement and provides an update on the progress made to date and Table 9.4 contains the indicator data for each adopted measure.

Table 9.1 NCC Action Plan Progress

Intervention	Measure/ timescales	Progress with measure	Progress since last review	Related targets
Parking	Gamston Park and Ride	<p>Not due for completion until 2011. No outcome from the scheme will be measurable until at least one year after scheme completion. The County Council has undertaken an Environmental Scoping Assessment and preliminary design works but can not progress the scheme (including the submission of a planning application) and extensive modelling and ongoing negotiations, the Highways Agency concerning access to A52.</p> <p>The Highways Agency approved access to the A52 in late 2009. However, the length of time taken to grant this approval has meant that funding for the cost of the whole project is not currently available as delivery of the scheme would extend beyond the current funding allocations up to 2010/11. Due to the uncertainty over the levels of funding for local transport (there will almost certainly be cuts in central government funding for local transport and major scheme improvements) beyond 2010/11, the scheme has therefore been postponed. An alternative cheaper option to the scheme is being considered in the form of pilot 'pocket' park and ride schemes to see if they can deliver similar benefits along the A52 corridor for much less cost.</p>	<p>Pilot 'pocket' park and ride schemes have been implemented along the A46 and A52 corridor and will be monitored over the next 12 months to determine their effectiveness.</p> <p>The development of LTP3 has included a review of transport schemes that currently have land safeguarded along their proposed route, or would require the County Council to safeguard a route. On 27 January 2011, the County Council approved the recommendations of the review of safeguarded schemes in Nottinghamshire. Schemes which were identified as not feasible; unacceptable; or do not offer value for money will no longer be safeguarded. Similarly, schemes that score poorly against the national and local strategic priorities, and therefore are unlikely to be a priority for funding during the 15 year lifetime of the third Local Transport Plan, will also no longer be safeguarded. The review determined that Gamston Park and Ride site will no longer be safeguarded. The review recognised the need for a Park & Ride site to the east of Nottingham and therefore further investigations will be undertaken to identify a site (potentially linked to new housing/employment development).</p> <p>Whilst these schemes will no longer be safeguarded, it is possible that some of them may be reprioritised if circumstances change, or alternative schemes are brought forward (eg, due to major new housing/commercial development).</p>	<p>NI167 NI177 LTP2 L14</p>
	<p>Civil parking enforcement</p> <p>Introduce civil parking enforcement - 2007/08</p>	<p>Draft special parking area (SPA) submitted to DfT May 2005. Negotiations between Borough, County, neighbouring authorities and other stakeholders undertaken 2006/07 and concluded during 2007, at which time a formal application for SPA was submitted. Negotiations and agreement between NCC and the seven borough/district councils were concluded in 2007. Civil Parking Enforcement was introduced on 12 May 2008.</p>	<p>Parking surveys across eight towns' commercial areas in the County were undertaken before the introduction of the scheme in 2008 and again in 2009. These surveys have shown that illegal parking on weekdays has fallen from 45% in 2008 before introduction of the scheme to 31% in 2009 after its introduction; and from 43% in 2008 to 32% in 2009 on weekends. Surveys are not due to be undertaken again until later in the 2011/12 financial year.</p>	<p>NI167 LTP2 L14</p>
Smarter Choices	<p>NCC travel plan</p> <p>1996 and ongoing</p>	<p>The NCC travel plan has been in operation for the past 10 years and has been incorporated into the climate change action plan for the County Council.</p> <p>In 2007 NCC employees based at campuses in West Bridgford travelled to work by the following means - 9% cycled; 13% walked; 14% by public transport; and 10% car share. These figures are much better than the mode of travel to work for all people in Nottinghamshire detailed in the 2001 census (3% cycled; 10% walked; 12% by public transport).</p>	<p>Whilst new NI185 does not require the County Council to report on commuter travel the Council intends to continue monitoring the mode split of travel to work bi-annually. 2009 is the first year of reporting on NI185 and has therefore taken priority for resource allocation (which has been significant due to setting up the new reporting systems). Consequently, whilst it was planned to undertake staff travel surveys bi-annually, a staff travel survey was not undertaken in 2009 due to the limited resources. The surveys will be undertaken during the 2011/12 financial year.</p> <p>A variety of measures have been undertaken to promote alternatives to the car, including involvement in 'walk week', 'bike week', personalised travel planning etc.</p>	<p>NI167 NI175 NI176 NI177 LTP2 LTP3 L3 L14</p>

Intervention	Measure/ timescales	Progress with measure	Progress since last review	Related targets
	Car parking Investigate staff car park charging and its implications	A car park focus group has been established for NCC staff to ensure equality of any implications. A decision on any 'on-site' charging regime has been delayed, however, due to an impending change in Chief Executive in 2008. Staff car park charging has been introduced for NCC employees at 'off-site' nearby previously free parking facilities.	Charging at 'off-site' car parks introduced April 2008. There has been a significant reduction in the numbers of observed vehicles parking in the car parks but there is no evidence to demonstrate that this parking has not just been displaced on-street. It is proposed that there will be a review of car parking arrangements at specific County Council sites although there are currently no timescales on this piece of work.	NI167 LTP2 LTP6 L14
	Cycling Undertake measures to maintain cycling levels at 2010 levels - ongoing	All of the work undertaken by the NCC travel plan co-ordinator (eg, publicity campaigns, personalised travel planning etc.) aim to deliver increases in cycle mode share. The NCC Carbon Management Plan was approved in April 2007 and new baseline data was gathered in July 2007 (7% of all NCC employees currently cycling to work).	Whilst new NI185 does not require the County Council to report on commuter travel the Council intends to monitor cycling levels at the County Council as part of the Carbon Management Plan. 2009 is the first year of reporting on NI185 and has therefore taken priority for resource allocation (which has been significant due to setting up the new reporting systems). Consequently, whilst it was planned to undertake staff travel surveys bi-annually, a staff travel survey was not undertaken in 2009 due to the limited resources. The surveys will, however be undertaken during the 2011/12 financial year. In the Greater Nottingham part of the county cycling has increased by 9% between 2005 and 2010; and in Rushcliffe district there has been a 13% increase in cycling between 2005 and 2010 with a 9% increase between 2008 and 2010. It is not possible to analyse these figures at a more local level.	NI167 NI175 NI176 LTP2 LTP3 L14
	Business mileage Undertake measures to deliver 1% per year reduction in business mileage - ongoing	Various measures are underway to help deliver the reductions in business mileage including new terms and conditions which affect business mileage rates and driver training to help motorists drive more sustainably. The NCC Carbon Management Plan was approved in April 2007. Whilst new NI185 does not require the County Council to report on commuter travel the Council intends to monitor business mileage at the County Council as part of the Carbon Management Plan. The baseline data was collected during 2008/09 and targets of 2% reduction have been set for 2009/10	The level of CO ₂ emissions from the County Council's business has reduced by 14.5% between 2008/09 and 2009/10 (far exceeding the 2% target). Across Greater Nottingham the area wide road traffic mileage has reduced by 4% between 2005 and 2010. Correspondingly there has also been a 4% reduction in CO ₂ emissions. It is not possible to analyse these figures at a more local level.	NI167 NI175 NI176 NI177 LTP2 LTP3 L14
	Workplace travel plans Develop workplace travel plans with businesses in the vicinity of the AQMA - ongoing	Nottingham Forest has developed an approved travel plan which covers not only its employees but also supporters. Match day smarter choices promotion has been undertaken and discussions are now underway on hard measures to support the travel plan. 31 workplace travel plans have been developed in Rushcliffe Borough.	A further three travel plans have been developed in Rushcliffe Borough during 2010/11. This includes a travel plan with the Environment Agency (a major employer located within the AQMA).	NI167 NI175 NI176 NI177 LTP2 LTP3 L3 L14

Intervention	Measure/ timescales	Progress with measure	Progress since last review	Related targets
	<p>School travel plans</p> <p>Develop school travel plans with schools in West Bridgford - ongoing</p> <p>Contact the remaining schools concerning the development of a travel plan</p>	<p>All schools within West Bridgford have been contacted. NCC's school travel plan officers are currently working with 12 of the 13 schools in West Bridgford.</p>	<p>89% of all the schools in Rushcliffe had an approved travel plan at the end of March 2010. Approved travel plans have been developed at 12 of the 13 schools in West Bridgford.</p> <p>In 2009/10 academic year 25% of school pupils travelled to school by car; a 9% reduction when compared to 2004/05. These figures are provided by DfES and are not available for a smaller geographical area.</p>	<p>NI167 NI175 NI176 NI177 NI198 LTP2 LTP3 L4 L14</p>
	<p>Marketing campaigns</p> <p>Investment in marketing public transport as well as the benefits of walking and cycling - ongoing</p>	<p>NCC has committed to a funding contribution to the 'Big Wheel' and a service level agreement between the two parties is in place for the period 2007/08. 'Big Wheel' has undertaken various marketing campaigns throughout the year including 'Stan's Plan', which is a lay person's guide to the local transport plan.</p>	<p>Cycling numbers within the county part of Greater Nottingham area have increased by 9% between 2005 and 2010; and in Rushcliffe district there has been a 13% increase in cycling between 2005 and 2010 with a 9% increase between 2008 and 2010. It is not possible to analyse these figures at a more local level.</p> <p>Public transport patronage in the county has increased by 8% between 2005/06 and 2009/10. This information is supplied by public transport operators and is not currently available on a 'corridor by corridor' basis.</p> <p>Smarter choices marketing campaigns have been undertaken during 2010/11 at all of the major sporting venues which could impact on the AQMA (Nottinghamshire County Cricket Club, Nottingham Forest Football Club and Nottingham Rugby Club) at matches during the 2009/10 and 2010/11 seasons.</p>	<p>NI167 NI175 NI176 NI177 NI198 LTP2 LTP3 L3 L4 L14</p>
	<p>Car sharing</p> <p>The promotion and facilitation of car sharing schemes at NCC and throughout the county - ongoing</p>	<p>nottinghamshare.com was launched in April 2006.</p>	<p>The number of current registered users on the website has increased from 1,895 to 1,931 between 2010 and 2011. The number of NCC staff registered on the website has increased to 367. NCC staff have made estimated savings of 288,594miles; 94.8kg of CO₂; 140kg nitrogen oxides; 10kg particulate matter as a result of car sharing through the website.</p>	<p>NI167 LTP2 LTP6 L14</p>
	<p>Car club</p> <p>Establishment of Greater Nottingham Car Club</p>	<p>A feasibility study was undertaken by consultants on the merits of introducing such a scheme. The study concluded that the greatest benefits would be seen by a scheme evolving out of the car share club introduced in the City.</p> <p>A feasibility study was undertaken on the merits of introducing such a scheme. The City Council are currently in discussions with service providers.</p>	<p>No outcome from the scheme will be measurable until at least one year after scheme completion.</p>	

Intervention	Measure/ timescales	Progress with measure	Progress since last review	Related targets
	Personalised travel planning A pilot 'travel smart' scheme was undertaken in the Meadows and Lady Bay areas adjoining the AQMA in 2003/04, a further travel smart scheme is due to be undertaken - 2008/09	Due to staff resource issues this measure was not undertaken in 2009/10 and will be reviewed later during this financial year as part of the development of the third Local Transport Plan.	A Local Sustainable Transport Fund bid is being developed jointly with Nottingham City Council which will consider the inclusion of personalised travel planning.	
Planning	Development control	Co-ordination of land use planning and transport infrastructure through the Local Development Framework	Work continues on the development of the Local Development Frameworks. An Aligned Core Strategy involving all of the district councils in the Core Nottingham Housing Market Area is being developed.	
	Development control contributions Use of collected development control contributions to provide cycling, walking and public transport improvements within the AQMA - ongoing	At the end of 2007, RBC had collected sums in excess of almost £800K through this process. Two new posts have been created within the County Council improve the s106 process and consistency with the districts.	Recent schemes which have utilised this funding and will help provide benefits across the AQMA include electronic bus time table displays are also due to be installed shortly (contribution of £47K funding).	NI167 NI175 NI176 NI177 NI198 LTP2 LTP3 L3 L4 L7 L14
Walking	Promotion and marketing Develop walking map for West Bridgford employees – 2007 and ongoing	A walking map was developed and distributed to employees in West Bridgford. The map was launched to coincide with 2007 Walk Week. 8,500 maps have been distributed in the West Bridgford area (2,500 to employees at the three largest employers; 2,500 to libraries; and 3,500 to households in the area.	The maps remain available on-line to download and in local libraries.	NI167 NI175 NI176 NI198 LTP2 L3 L4 L14
	Promotion and marketing Involvement and promotion of walk week and walk to work day -ongoing	Involvement in Walk Week during May includes guided walks, a chance to try out activities.	In addition to the walking events that are held throughout the year, a number of events were held during walk week included: a celebration event in the Market Square to promote health; and walk to work events. Walk week also coincided with national walk to school week which was promoted by the County Council in all schools across the county. It is hoped that the events in Walk Week will encourage people to continue walking and lead healthier lifestyles.	NI167 NI175 NI176 NI198 LTP2 L14
Cycling	Promotion and marketing Develop and distribute cycle maps of Rushcliffe area (and the rest of the county) - ongoing	Maps continue to be distributed throughout the county, and are available as a hard copy and on-line.	Cycling numbers within the county part of Greater Nottingham area have increased by 9% between 2005 and 2010; and in Rushcliffe district there has been a 13% increase in cycling between 2005 and 2010 with a 9% increase between 2008 and 2010. It is not possible to analyse these figures at a more local level.	NI167 NI175 NI176 NI177 NI198 LTP2 LTP3

Intervention	Measure/ timescales	Progress with measure	Progress since last review	Related targets
				L3 L4 L14
	Cycle training Deliver adult and child cycle training - Ongoing	The County Council offers nationally accredited cycle training to people of all ages and abilities. 12 additional trainers were trained to accredited standards in 2008 to meet the national guidelines.	Cycle training continues to be offered free of charge to children in the county. Adult training is also available free to members of the public, whilst training is offered at workplaces at a cost to employers.	NI167 NI175 NI176 NI198 LTP2 LTP3 L3 L4 L14
	Advance cycle stop lines Advance cycle stop lines introduced at all feasible junctions within the AQMA - 2006/07	Advance cycle stop lines have been installed at all feasible major signal junctions within the AQMA.	This action has been completed.	NI167 NI175 NI176 NI198 LTP2 LTP3 L14
	Wilford Lane cycle route Wilford Lane cycle route to be installed - 2007/08	A 330m off-road 3m wide shared-use cycle route was installed on Wilford Lane during 2007/08.	Between 2008 and 2009 cycling levels along this corridor increased by 40%.	NI167 NI175 NI176 NI198 LTP2 LTP3 L3 L4 L7 L14
	Lady Bay Bridge cycle lane To be implemented as part of Eastside Regeneration scheme - 2010/11	This scheme has been delayed as it is part of a wider Eastside Regeneration scheme.	The measure is part of a larger Nottingham City Council Eastside Regeneration scheme. The County Council cannot implement the scheme until works have been undertaken by Nottingham City Council. No progress has been made by the City Council as their scheme is potentially dependent upon future developer contributions.	
Public transport	SkyLink bus service Provision of SkyLink direct 24 hour bus service to the airport - ongoing	The service began operating in May 2004 and in February 2006, the Skylink service became 24-hour, operating every 30minutes and was re-routed via Trent Bridge. Since beginning of this service in May 2004 the service has seen passenger figures increase over 100% year on year. In 2007 over 350,000 passengers used the service.	Between 2005 and 2009 patronage on the Nottingham SKYlink service has increased by 168%. The numbers of people travelling to the airport by car have decreased by almost 7%.	NI167 NI175 NI176 NI177 LTP2 L14

Intervention	Measure/ timescales	Progress with measure	Progress since last review	Related targets
	Ticketing Introduction of ITSO smartcard ticketing - 2007/08 and ongoing	It was planned to introduce ITSO smartcards in replacement of the NCC legacy concessions smartcard in March/April 2007 and this was carried out in the Bassetlaw District. When government announced the introduction of the English National Concessions Scheme (ENCTS) commencing 1st April 2008 it was decided, however, that, rather than carrying out two complete card re-issues, the ITSO and ENCTS cards would be introduced together. Scholars' cards were issued in ITSO format starting July 2007.	130,000 concessions cards (including 21,000 in Rushcliffe) were produced and distributed to pass holders during 2008.	NI167 NI175 NI176 NI177 NI178 LTP2 L7 L8 L14
	Concessionary fare schemes for the over 60s and disabled Free countywide off-peak concessionary fare schemes for the over 60s and disabled to be introduced - 2006/07 and ongoing	A free countywide off-peak concessionary fare scheme for the over 60s and disabled was introduced on 1 April 2006.	In 2009 95% of older people living in Rushcliffe had taken up their entitlement to a concessionary pass.	NI167 NI175 NI176 NI177 NI178 LTP2 L7 L8 L14
	Concessionary fares for young people Consideration of introduction of concessionary fares for young people - 2010/11	A pathfinder bid to progress the introduction of concessionary fares for young people at an earlier date than planned was submitted to Government in December 2007. The pathfinder bid was unsuccessful which means that the consideration of introduction of such a scheme will remain as 2010/11.	The measure is due to commence in September 2011 for Year 7 pupils and therefore there is no progress or outcomes to report.	
	Information Investigate and publicise web based journey planners - ongoing	Nottinghamshire is now part of the national, multi-modal Traveline journey planner. Web links to the Traveline site are publicised and available from the County Council's website. In addition to this, links to all of the area's public transport operators' journey planner information are also available from NCC's website.	This action has been completed. Links to the Traveline journey planner and operators' journey planner information continue to be available are available from NCC's website.	NI167 NI175 NI176 NI177 NI198 LTP2 L3 L4 L7 L14
	Public transport infrastructure Install/ replace flagpoles/ timetable cases along key AQMA corridors - 2006/07	Flagpoles and timetable cases have been installed/replaced along the key AQMA corridors.	This action has been completed.	NI167 NI175 NI176 NI177 NI178 NI198 LTP2 L3 L4 L7 L14

Intervention	Measure/ timescales	Progress with measure	Progress since last review	Related targets
	Construction of the East Midlands Parkway station on the A453 with adjoining park and ride site Scheme completion - 2008/09	Construction started at the site in December 2007.	Parkway station opened in January 2009. Usage continues to grow and approximately 4,000 passengers are using the station each week.	NI167 NI175 NI176 LTP2 L14
	Bus priority on the A60 Further bus lane priority will be considered on the A60	A 0.4km bus lane has been installed on the A60 in both directions south of Trent Bridge. Improvements to the 'bus gate' signals on the southerly approach are being considered to improve bus priority.	The further improvements have not been implemented yet and therefore there is no progress or outcomes to report.	NI167 NI175 NI176 NI177 NI178 NI198 LTP2 L3 L4 L7 L14
	Encourage operators to take-up cleaner vehicles through partnership working Cleaner fleet vehicles - 2010/11 and ongoing	Operators are encouraged to take-up cleaner vehicles through partnership working. Due to the sustained high level of investment by the two main operators the average age of the bus fleet operating in the AQMA is already less than six years old and by the end of 2007 all of the two main operators fleet were low-emission Euro2, 3 or 4 standards.	Partnerships with all of the major bus operators are ongoing including the establishment of a new transport development group which is held every two months. The group will help determine future service and public transport scheme improvements.	
	Capacity increases on the GO2 services along the A60 corridor Capacity increases on the GO2 services along the A60 corridor to be implemented - 2008/09	A £230K scheme has been implemented to deliver Ruddington bus service enhancements which travel along the A60.	This action has been completed.	NI167 NI175 NI176 NI177 NI178 NI198 LTP2 L3 L4 L7 L14
	Install 'real time' bus information along key AQMA corridors - 2010/11		Real time infrastructure was installed along the main routes through the AQMA during 2010/11 financial year.	NI167 NI175 NI176 NI177 NI178 NI198 LTP2 L3 L4 L7 L14

Intervention	Measure/ timescales	Progress with measure	Progress since last review	Related targets
Cleaner vehicles	Develop and implement an action plan to improve NCC's fleet 2010/11 and ongoing		The level of CO ₂ emissions from the County Council's business has reduced by 14.5% between 2008/09 and 2009/10 (far exceeding the 2% target). It is not possible to analyse these figures at a more local level.	
	Introduce increasing proportion of bio-fuels to NCC's fleet 2008/09 and ongoing		The measure is not due to commence yet and therefore there is no progress or outcomes to report.	
Network management	Traffic control and information Jointly fund the traffic control centre that monitors traffic movement and provides real time traffic control over many traffic signal installations - Ongoing	The County and City Councils jointly fund the traffic control centre that monitors traffic movement and provides real time traffic control over many traffic signal installations. Real time information is conveyed onto the local media and disseminated via NCC's web site. A review of the Travelwise Centre was undertaken in early 2007 which resulted in a complete restructuring of Travelwise in May 2007. The review included how the traffic and travel information is conveyed to the public, taking into account advances in communication systems, the internet, mobile phones, satellite navigation and radio broadcasting. The existing Travelwise web site was completely rebuilt and developed to become the central real time information hub for reporting road conditions, congestion, road works, events, incidents, travel information and useful advice for the travelling public.	The Travelwise centre remains in operation 24hrs a day, every day.	NI167 NI175 NI176 NI177 NI178 NI198 LTP2 LTP3 L3 L4 L7 L14
	Introduction of SCOOT/MOVA SCOOT/MOVA - Ongoing Introduction of MOVA at junction of Radcliffe Road/ Ambleside - 2006/07	SCOOT/MOVA and other traffic signal efficiency improvements, including CCTV at junctions within AQMA. MOVA was installed at the junction of Radcliffe Road/Ambleside during 2007/08.	This action is complete.	NI167 LTP2 LTP5 L14

Intervention	Measure/ timescales	Progress with measure	Progress since last review	Related targets																								
	<p>Co-ordination of streetworks - Effective co-ordination of streetworks to minimise traffic disruption and unnecessary congestion as part of NCC's network management duty</p> <p>County Council's network management duty - Ongoing</p>	<p>Systems for notice management and coordination have been upgraded to enhance noticing handling, monitoring of works proposals, coordination of works and directing timing of works. Staff awareness and training has been undertaken to ensure that powers are used effectively. Promoters of highway works have been made aware of the requirement to manage works to minimise the impact on traffic to reduce disruption. A review of street designations and network hierarchy has commenced to improve data quality for works promoters and network managers and to prioritise works management. Regular coordination meetings have been held between all works promoters in conjunction with the City Council and HA and also additional regular meetings between the HA and the local authorities of Nottinghamshire, Nottingham, Derbyshire and Derby to create a composite framework programme of planned works affecting major routes in the region. In addition, workshops have been held with major works promoters including utility companies to promote good practice and to encourage alternative working methods with a review to reducing peak period working and thereby address the most disruptive aspect of working on the highway.</p>	<p>Detailed journey time monitoring of key corridors (including the A60, A6011 and A6520 which lie within the AQMA) has been undertaken annually since 2005/06 as part of the Greater Nottingham Congestion Delivery Plan.</p> <p>The average journey time per mile across all of the routes in the county and city has not increased since 2005.</p> <p>Between 2005 and 2009 there has been decreases in journey times per mile on each of the routes monitored in the AQMA as shown in the table below.</p> <table border="1" data-bbox="1346 512 1951 700"> <thead> <tr> <th>Route</th> <th>2005/06</th> <th>2006/07</th> <th>2007/08</th> <th>2008/09</th> <th>2009/10</th> </tr> </thead> <tbody> <tr> <td>A6011 Lady Bay Bridge</td> <td>4.3m</td> <td>3.9m</td> <td>3.9m</td> <td>4.1m</td> <td>3.8m</td> </tr> <tr> <td>A6011 Trent Bridge</td> <td>4.0m</td> <td>3.5m</td> <td>4.6m</td> <td>4.4m</td> <td>3.8m</td> </tr> <tr> <td>A60 south</td> <td>3.6m</td> <td>3.8m</td> <td>3.4m</td> <td>3.6m</td> <td>3.3m</td> </tr> </tbody> </table>	Route	2005/06	2006/07	2007/08	2008/09	2009/10	A6011 Lady Bay Bridge	4.3m	3.9m	3.9m	4.1m	3.8m	A6011 Trent Bridge	4.0m	3.5m	4.6m	4.4m	3.8m	A60 south	3.6m	3.8m	3.4m	3.6m	3.3m	<p>NI167 NI175 NI176 NI177 NI178 NI198 LTP2 LTP3 L3 L4 L7 L14</p>
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	<p>Incident management - Effective management of incidents to minimise traffic disruption and unnecessary congestion as part of NCC's network management duty</p> <p>County Council's network management duty - Ongoing</p>	<p>As indicated under Traffic Control and Information, the joint County/City control centre and travelwise web site have been comprehensively revised. This has improved the manner in which incident information can be dealt with to ensure that communication about the incident is passed effectively to those who need to deal with the matter and also to the road user. The local operating agreement between the authority and the HA has been comprehensively reviewed to identify the relevant parts of the network which have interaction on each authority and to put in place appropriate communication channels for management of incident information.</p>	<p>Detailed journey time monitoring of key corridors (including the A60, A6011 and A6520 which lie within the AQMA) has been undertaken annually since 2005/06 as part of the Greater Nottingham Congestion Delivery Plan.</p> <p>The average journey time per mile across all of the routes in the county and city has not increased since 2005.</p> <p>Between 2005 and 2009 there has been decreases in journey times per mile on each of the routes monitored in the AQMA as shown in the table below.</p> <table border="1" data-bbox="1346 1031 1951 1219"> <thead> <tr> <th>Route</th> <th>2005/06</th> <th>2006/07</th> <th>2007/08</th> <th>2008/09</th> <th>2009/10</th> </tr> </thead> <tbody> <tr> <td>A6011 Lady Bay Bridge</td> <td>4.3m</td> <td>3.9m</td> <td>3.9m</td> <td>4.1m</td> <td>3.8m</td> </tr> <tr> <td>A6011 Trent Bridge</td> <td>4.0m</td> <td>3.5m</td> <td>4.6m</td> <td>4.4m</td> <td>3.8m</td> </tr> <tr> <td>A60 south</td> <td>3.6m</td> <td>3.8m</td> <td>3.4m</td> <td>3.6m</td> <td>3.3m</td> </tr> </tbody> </table>	Route	2005/06	2006/07	2007/08	2008/09	2009/10	A6011 Lady Bay Bridge	4.3m	3.9m	3.9m	4.1m	3.8m	A6011 Trent Bridge	4.0m	3.5m	4.6m	4.4m	3.8m	A60 south	3.6m	3.8m	3.4m	3.6m	3.3m	<p>NI167 NI175 NI176 NI177 NI178 NI198 LTP2 LTP3 L3 L4 L7 L14</p>
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Intervention	Measure/ timescales	Progress with measure	Progress since last review	Related targets																								
	Contingency planning - Effective contingency planning to minimise traffic disruption and unnecessary congestion as part of NCC's network management duty County Council's network management duty - Ongoing	Working in close collaboration with the City and HA, tactical diversion routes have been developed for the emergency diversion of traffic from any part of the trunk road network, to reduce the delay in implementation of alternative routes and to ease congestion at the time of incidents. Key locations on the local network are being identified and associated diversion routes investigated in line with the developing network hierarchy.	Detailed journey time monitoring of key corridors (including the A60, A6011 and A6520 which lie within the AQMA) has been undertaken annually since 2005/06 as part of the Greater Nottingham Congestion Delivery Plan. The average journey time per mile across all of the routes in the county and city has not increased since 2005. Between 2005 and 2009 there has been decreases in journey times per mile on each of the routes monitored in the AQMA as shown in the table below. <table border="1"> <thead> <tr> <th>Route</th> <th>2005/06</th> <th>2006/07</th> <th>2007/08</th> <th>2008/09</th> <th>2009/10</th> </tr> </thead> <tbody> <tr> <td>A6011 Lady Bay Bridge</td> <td>4.3m</td> <td>3.9m</td> <td>3.9m</td> <td>4.1m</td> <td>3.8m</td> </tr> <tr> <td>A6011 Trent Bridge</td> <td>4.0m</td> <td>3.5m</td> <td>4.6m</td> <td>4.4m</td> <td>3.8m</td> </tr> <tr> <td>A60 south</td> <td>3.6m</td> <td>3.8m</td> <td>3.4m</td> <td>3.6m</td> <td>3.3m</td> </tr> </tbody> </table>	Route	2005/06	2006/07	2007/08	2008/09	2009/10	A6011 Lady Bay Bridge	4.3m	3.9m	3.9m	4.1m	3.8m	A6011 Trent Bridge	4.0m	3.5m	4.6m	4.4m	3.8m	A60 south	3.6m	3.8m	3.4m	3.6m	3.3m	NI167 NI178 LTP2 L14
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	ParkSmart directional signing Introduce interactive ParkSmart directional signing to zones within the City - 2010/11		This measure was introduced in 2009/10.	NI167 LTP2 LTP8 L14																								

Major transport schemes (costing over £5m)

Over £1.5bn is to be provided for local authority major schemes during the 2011/12-2014/15 Spending Review period. Of this, over £600m is for committed schemes; and over £900m for new schemes.

Schemes that are already under construction will continue to receive funding. The level of funding required for schemes already under construction means that it is unlikely that any further schemes will be able to begin construction before 2012/13. To maximise the number of schemes that can go ahead, DfT are challenging scheme promoters to review options for cost reductions (including scope changes); take opportunity of the existing market conditions; and increase local contributions. In order to do this DfT reviewed all of the schemes with programme entry or valid programme entry bids and have categorised them in three pools:

- Supported pool with approved funding – which consists of 10 schemes that are likely to be funded subject to DfT Full Approval of statutory powers and tender prices. Two of these schemes have been granted Full Approval
- Development pool – which consists of 45 schemes that the local authorities need to undertake further detailed work on. Authorities need to complete this work and submit their best and final funding bids by 9 September 2011. DfT will then

determine if the bids are acceptable by the end of 2011. It should be noted that the total funding required for these schemes is £945m from a budget of £630m

- Pre-qualification pool – this originally consisted of 33 schemes that required further evaluation by DfT to determine if they could enter the ‘development pool’. DfT completed this work by the end of January 2011 and 23 schemes were promoted to the development pool.

Any schemes which were not included in the ‘development pool’ (including new schemes) will not receive funding before 1 April 2015.

Future prioritisation of major transport schemes

Following the dismantling of the regional bodies, DfT will be looking to develop new arrangements to provide advice on the prioritisation of regionally important transport schemes. These are likely to include elected members of local authorities and business representatives, possibly through a grouping of Local Enterprise Partnerships. Schemes of particular interest to the County Council include the improvements to the A453 and the Midland Mainline.

Major schemes	A52 ring road upgrade	A business case was submitted to DfT by the City Council but no decision had been made on its success or progression before the major scheme review.	DfT included the A52 ring road upgrade in the ‘development’ pool of schemes. Nottingham City Council are continuing to work with the DfT to investigate the feasibility and benefits of the scheme and a decision on its progress will be made by the end of 2011.
	NET phase 2 - timescales subject to all feasibility, funding and approvals	<p>Department for Transport granted ‘programme entry approval’ for Phase 2 of the Nottingham Express Transit (NET) in October 2006. This decision has allowed progress of the extension of the tram system to incorporate two new lines to the south and west of Nottingham city centre totalling 17km in length. A public inquiry into the proposals closed on 16 January 2008.</p> <p>The Inspector presented his findings on the NET Public Inquiry to the Secretary of State for Transport whom approved the Transport and Works Act Order (TWAo) for the NET Phase 2 proposals on 30 March 2009.</p>	In March 2011 the Government confirmed that funding is to be made available to enable the construction of NET Phase Two after cost savings were identified to make the project more affordable. A preferred bidder has been selected to build the two new tram lines and it is hoped that construction will begin towards the end of this year and the extended network fully operational by 2014.
	A453 widening	<p>The first Regional Funding Allocation (RFA) in January 2006 identified the A453 widening as a medium priority but the February 2009 RFA review made the scheme a high priority. The proposed scheme aims to improve the A453 trunk road between the M1 junction 24 and the A52 in Nottingham, to ease existing highway congestion and improve road safety.</p> <p>The Highways Agency (HA) has published draft legal Orders and an Environmental Statement, which is part of the Statutory process for delivering this scheme. Following public exhibitions and consultation on the proposals a Public Inquiry was held in November 2009. The findings of the Inquiry have been passed to the Secretary of State and their decision is still pending.</p>	<p>Following the October 2010 Spending Review it was announced by the coalition Government that the proposed A453 widening scheme was deferred, with the Government announcing that ‘it will not be possible for the A453 Widening Scheme to enter construction until at least 2015’ i.e. until after the next general election. It had originally been proposed to start works this autumn / winter (2010/11) and consequently the scheme has been delayed by at least 5 years.</p> <p>The A453 Widening Scheme has been placed in a ‘development pool’ along with 17 other major trunk road projects nationally. The HA will continue to work on all these schemes, with the aim of starting construction in a future spending review period i.e. after 2015. However, following questions in the House of Commons, the Secretary of State has advised that the HA will advance a small number of schemes from the post 2015 programme for potential earlier construction. These schemes</p>

			will be known as 'further development schemes' and are to be selected by the HA during the course of 2011, on the basis of VfM and the cost of development work required. There is no indication that the A453 scheme would be a front runner. The A453 Lobby Planning Group will continue to make the case for the early implementation of the A453 Widening Scheme on economic regeneration, transport and road safety grounds.
A46 dual	<p>The first Regional Funding Allocation in January 2006 allocated funding for only a quarter of the scheme which was due to be built by 2019. During the recent Regional Funding Allocation review (RFA2), Government, as part of its response to the national economic situation, offered additional funding to the Region to pay 50% (£174m) of the cost of the A46 scheme to facilitate a start to be made in 2009/10 as a single phase construction with completion in 2011/12. Although the offer meant that the Region would need to fund the remaining 50% of the scheme costs from the RFA2 budget, it provides the only affordable means for the Region to secure the A46 improvement at the earliest opportunity and avoids the need to phase construction over a lengthy period.</p> <p>The Region's financial commitment to the A46 has now been brought forward and it will now be possible to deliver the full scheme within three years. The main construction contract commenced in June 2009 and the construction is currently slightly ahead of the original schedule with the A46 road improvement due to be completed in Spring 2012.</p> <p>A supplementary Orders Public Inquiry was held in January/February 2010. The findings of the Inquiry have been passed to the Secretary of State and their decision is still pending. This Inquiry will not delay the on-going construction of the remainder of the scheme.</p>	As part of the October 2010 Spending Review the coalition Government announced that "schemes already under construction will proceed on their original terms" and hence the A46 scheme will continue apace. The A46 construction programme is still on schedule with the road improvement due to be completed by summer 2012.	
New River Trent crossing	The AQMA encompasses two of the three road bridges crossing the River Trent within the Greater Nottingham LTP area. A fourth road bridge crossing is not planned until after the 'duelling' of the A52 between Clifton Bridge and Saxondale island, including grade separated junctions between these two locations. The work on the A52 does not, however, feature as a regional priority for the period up to 2020.	The new River Trent Crossing was not considered a regional priority for the period up to 2013/14. Priorities beyond this date will be considered at a later date but it is unlikely they will be made earlier than 2012.	
Road user charging	<p>The Three Cities Partnership which includes Derbyshire, Leicestershire and Nottinghamshire County Councils and the respective City Councils and other regional partners received Government pump priming funding as part of the second round of the Transport Innovation Fund programme. The funding was allocated to the partnership for an in-depth investigation into the possible options for tackling congestion problems and improving roads and public transport across the sub-region. The funds were used to consider the potential for road pricing schemes and other transport options to reduce congestion and support economic growth over the next 15 years.</p> <p>The effectiveness of the alternative options in tackling congestion was assessed primarily through transport models. These models were developed and validated and the outputs considered alongside other key issues such as estimates of implementation costs and initial views from a programme of key stakeholder engagement.</p>	The feasibility study was completed in the spring of 2008. At that point, the six local authorities considered all of the evidence collected. For further investigations on a potential road user charging scheme to progress all of the partners needed to approve. Some of the six authorities did not, however, wish to proceed with further investigations at this time.	

	<p>Workplace parking levy - timescales subject to all feasibility, funding and approvals</p>	<p>The public consultation on the proposals for a Workplace Parking Levy (WPL) in Nottingham closed on 12 October 2007 following a 12 week consultation period. As part of the consultation there was a five day Public Examination of the WPL proposals by an independent chairman. An independent report of the findings, together with responses from the consultation, was presented to Nottingham City Council in December 2007. Councillors considered the conclusions of the public consultation and the Public Examination of the WPL proposals at the Nottingham City Council's Executive Board on 18 December 2007 and decided to proceed, in principle, with developing the details of the scheme.</p>	<p>The scheme was ratified by Nottingham City Full Council in May 2008, and a revised Business Case was subsequently submitted to the Department for Transport (DfT). DfT granted conditional approval for the scheme in July 2009 along with confirmation of the Orders. No charge will be applied to employers until April 2012 but the scheme will be introduced (subject to further feasibility, funding and approvals) without charge, six months prior in October 2011.</p> <p>The WPL will provide funding for NET Phase 2; the redevelopment of Nottingham Railway Station (the Hub project); and is also intended to support the popular Link Bus network.</p>
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Table 9.2 Nottinghamshire County Council Indicator Table

Progress against Trajectory Legend:															
Going strongly in the right direction															
No clear trend/slowly going in the right direction, perhaps not fast enough to meet agreed targets															
Going in wrong direction															
Definitions	Year Type	Units	Plan Area		Year	Value			Actual and Trajectory Data						Progress
									2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	
NI 167 Congestion - average journey time per mile during the morning peak	Academic	Minutes and Seconds	Joint Plan Area	Base Data	2005/06	3.8 mins	Actual Figures		3.8 mins	3.9mins	3.8 mins	3.8mins	3.7mins		
				Target Data	2010/11	4.2mins	Trajectory		3.8mins	3.9mins	4.0mins	4.0mins	4.1mins	4.2mins	
NI 175 Access to services and facilities by public transport, walking and cycling	Financial	Percentage	County	Base Data	2005/06	96.00%	Actual Figures		96.00%	96.00%	96.00%	96.00%	96.00%		
				Target Data	2010/11	96.00%	Trajectory		96.00%	96.00%	96.00%	96.00%	96.00%	96.00%	
NI 176 Working age people with access to employment by public transport (and other specified modes)	Financial	Percentage	County	Base Data	2007/08	83.00%	Actual Figures		N/A	N/A	87.00%	80.35%	80.30%		
				Target Data	2010/11	85.00%	Trajectory		N/A	N/A	83.00%	83.00%	84.00%	85.00%	
NI 177 Local bus and light rail passenger journeys originating in the authority area	Financial	Number	County	Base Data	2005/06	34,028,525	Actual Figures		32,559,000	34,028,525	35,135,170	35,436,400	35,106,302		
				Target Data	2010/11	35,410,218	Trajectory		N/A	34,028,525	34,368,810	34,712,498	35,059,622	35,410,218	
NI 178 Bus services running on time	% of non-frequent services on time	Percentage	County	Base Data	2006	84%	Actual Figures		N/A	84.00%	82.00%	83.00%	83.00%		
				Target Data	2010	86%	Trajectory		N/A	84.00%	85.00%	86.00%	87.00%	88.00%	
	Minutes	County	Base Data	2006	0.67 mins	Actual Figures		N/A	0.67	0.67	0.77	0.68			
			Target Data	2010	1 mins	Trajectory		N/A	1	1	1	1	1		

								2005/06	2006/07	2007/08	2008/09	2009/10	2010/11				
NI 198 Children travelling to school (split by the mode of travel usually used)	Primary schools	Financial	Percentage	County	Base Data	2006/07	35.99%	Actual Figures	N/A	35.99%	35.90%	34.61%	34.70%				
					Target Data	2010/11	33.72%	Trajectory	N/A	35.99%	35.42%	34.85%	34.28%	33.72%			
	percentage of which Car (including vans and taxis)							Actual Figures	N/A	35.99%	35.90%	34.61%	34.70%				
	percentage of which Car Share							Actual Figures	N/A	2.79%	3.00%	3.17%	3.00%				
	percentage of which Public Transport							Actual Figures	N/A	3.42%	3.10%	3.19%	2.80%				
	percentage of which Walking							Actual Figures	N/A	56.71%	57.20%	57.89%	58.50%				
	percentage of which Cycling							Actual Figures	N/A	1.01%	0.80%	0.79%	0.90%				
	percentage of which Other							Actual Figures	N/A	0.80%	0.00%	0.35%	0.20%				
	Secondary schools	Financial	Percentage	County	Base Data	2006/07	13.65%	Actual Figures	N/A	13.65%	12.20%	14.08%	14.50%				
					Target Data	2010/11	11.38%	Trajectory	N/A	13.65%	13.08%	12.51%	11.94%	11.38%			
	percentage of which Car (including vans and taxis)							Actual Figures	N/A	13.65%	12.10%	14.08%	14.50%				
	percentage of which Car Share							Actual Figures	N/A	0.96%	1.10%	1.16%	1.20%				
	percentage of which Public Transport							Actual Figures	N/A	26.83%	29.40%	28.38%	27.30%				
	percentage of which Walking							Actual Figures	N/A	55.53%	54.00%	52.23%	52.60%				
percentage of which Cycling							Actual Figures	N/A	2.92%	2.80%	2.96%	2.80%					
percentage of which Other							Actual Figures	N/A	0.12%	0.60%	1.20%	1.70%					
LTP2 - Change in area wide road traffic mileage (annualised index)	Calendar	Index based on 2004 = 100	County area of Greater Nottingham	Base Data	2004	100	Actual Figures	2003	2004	2005	2006	2007	2008	2009	2010		
				Target Data	2010	108	Trajectory		100	101	103	104	105	107	108		
LTP3 - Cycling trips (annualised index)	Calendar	Index based on 2005 = 100	County area of Greater Nottingham	Base Data	2005	100	Actual Figures	2003	2004	2005	2006	2007	2008	2009	2010		
				Target Data	2010	105	Trajectory			100	101	102	103	104	105		
L3: Commuter travel plans	% of employees covered by a commuter travel plan	Calendar	Percentage	Greater Nottingham	Base Data	2005	15%	Actual Figures	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	
					Target Data	2010	20%	Trajectory	N/A	N/A	15%	22%	36%	36%	36%	19%	20%

									2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11		
L4: School travel plans	% of schools with an approved travel plan	Financial	Percentage	County	Base Data	2004/5	15%	Actual Figures	N/A	15%	36%	52%	61%	77%	83%			
					Target Data	2010/11	80%	Trajectory	N/A	15%	26%	37%	47%	58%	69%	80%		
L7: Accessibility of healthcare	% of households within 45 minutes of hospital by bus or tram	Calendar	Percentage	County	Base Data	2006	92%	Actual Figures	N/A	N/A	N/A	92%	92%	92%	92%			
					Target Data	2010	92%	Trajectory	N/A	N/A	N/A	92%	92%	92%	92%	92%		
L8: Accessibility for the elderly	% of eligible population taking up concessionary fares entitlements	Financial	Percentage	County	Base Data	2004/05	94%	Actual Figures	N/A	N/A	46%	74%	73%	81%	82%			
					Target Data	2010/11	70%	Trajectory	N/A	N/A	46%	48%	51%	53%	55%	57%		
L14: Carbon dioxide emissions (annualised index)	Volume of carbon dioxide emitted by vehicles in Greater Nottingham	Calendar	Index based on 2004 = 100	County area of Greater Nottingham	Base Data	2004	100	Actual Figures	N/A	100	99	100	100	96	96			
					Target Data	2010	100	Trajectory	N/A	100	101	102	103	103	104	105		

Table 9.3 Rushcliffe Borough Council Measures

measure	Focus	Responsibility	Air Quality Impact	Time scale	Indicator	Progress
RBC Travel Plan	Reduce impact of RBCs business and staff travel.	P Philips	L	M	Implementation of travel plan.	2009: RBC Travel Plan - No progress has been made on the update for the RBC Travel Plan and there is no timescale for this work. A review is currently underway by the Senior Management Team for the Lease Car Scheme, this will consider environmental measures in the consideration of any changes. 2010: RBC Travel Plan - No progress has been made on the update for the RBC Travel Plan and there is no timescale for this work.
Nottinghamshire Air Quality Strategy	Review the strategy through the Nottinghamshire Air Quality Steering Group	E&WMS (M Hickey)	L	n/a	Adoption of strategy	Strategy was adopted in 2008 Strategy was adopted by RBC in 2008. NFA required. COMPLETED IN 2008
Remote home working	Expand to other Service areas as appropriate	Corporate (J Waterston has access to remote worker list)	L	S	AQ3	2009: Environmental Health staff currently undertake a significant proportion of work from home negating the need to travel through the AQMA areas. This measure has been adopted in 2009 as the 'fit for purpose review' with the potential to increase remote working where appropriate throughout the Council.
Energy efficiency	Reduce emissions of greenhouse gases and nitrogen dioxide from RBC premises and domestic premises and establish targets	P Philips (Sheila Hood)	L	2009/2010	NI185 NI187	An energy strategy is in place for the period 2000-2010 with the aim of reducing energy usage in general. This measure is now part of the Climate Change Action Group remit NI 187 Progress – we are feeding our action plan into the county action plan under the LAA. At the moment RBC are continuing with actions from 2008/9. The county NI 187 group have secured money to fund further initiatives into 2011. 2010: NI187 is reported below. Various projects ongoing. Some feedback from Sheila : 157 referrals received, £589,622 spent on energy efficiency measures of which 128 were boiler

						<p>replacements, there were no CO² savings recorded.</p> <p>EST data is from April 2010 - Jan 2011 as follows: 84 CWI → 51,240 kg CO₂ 110 LI → 25,300 kg CO₂</p> <p>Much of my work with communities does not lend itself to be measured in CO₂ savings but the Kinoulton Greening campaign did result in a saving of 106 tonnes of CO₂. Events throughout the year with the Fantastic Homes vehicle in tow resulted in estimated savings (by Marches Energy Agency) CO₂ saved (lifetime) = 101,401kg + 44,280 kg + 72,888 kg</p>
Climate change action group	Air quality – % reduction in NO _x and primary PM ₁₀ emissions through local authority's estate and operations.	P Philips	L	2009/2010	NI 194 NI 185 NI 186	<p>2008: Commenced Sept 2008. Steering group set up which meets periodically. Energy Saving Trust questionnaire completed by all departments- action plan developed with targets incorporated to lower Co₂ and Pm₁₀. Progress report discussed at group – regular agenda item for future. Contributions made to the Air Quality Action Plan.</p> <p>2009: Climate Change - A climate change strategy and action plan is in development, supported by the EST and based on their preparatory questionnaires. The strategy and action plan will be adopted in 2010, with implementation over the following years.</p>
RBC procurement	Implement a green corporate procurement strategy to reduce pollution	Procurement officer (David Hayes)	L	S		<p>The Council published 'Green purchasing guidelines' in Jan 2004. The Council requires pre-qualification of suppliers to ensure that they practice equal opportunities and environmental policies. A procurement strategy is in place covering 2006-2009. Currently RBC is working toward a regional Sustainable Procurement with Improved environmental performance across the range of goods purchased being a key aim.</p> <p>2008: No further progress to report 2009: No further progress to report 2010: Procurement Strategy updated for 2009/2012 and still recognises broad impacts on sustainability. Link here: http://www.rushcliffe.gov.uk/upload/public/attachments/266/procurement_strategy_20092012final.pdf</p>

						No measurable air quality outputs from this strategy. COMPLETED 2010	
Local Plans. Development Control Strategies.	Develop Supplementary Planning Documents. Ensure air quality is a material consideration for key developments in the Borough. Prevention of a worsening of air quality through inappropriate development in or around the AQMA's	Development control (Richard Mappletoft) E&WMS (M Hickey)	M	2009 Ongoing ongoing	Draft has been produced and published on web in 2009 AQ4 AQ5 AQ6	Draft guidance produced. Planners have policy in place to refer applications with air quality impacts	Air quality is a material consideration in planning matters and specific conditions relating to land use and traffic impacts are being commented on and attached as planning conditions currently. A draft informal SPD has been drafted by EH&WM but requires further revision prior to consultation. An un adopted guide for developers is likely to be published this year but formal adoption by development control is yet to be discussed: 2009: non statutory guide has been produced and published. Planners have suggested SPD will be 2012/13 before published 2010 Consider some parts have been implemented and will continue to monitor and report changes and impacts. The SPD has not progressed due to change in Government policy toward the LDF. This delay has a knock on effect to the development of any proposed SPD's which is similarly delayed.
Control of industrial emissions	Liaise with Environment Agency to ensure that air quality is considered as part of the IPPC regime/ enforcement of ppc controls to air	E&WMS (M Hickey)	L	ongoing	LIEWM20	Incorporated into existing procedures. Measure implemented. 2010: : Policies and procedures in place and therefore action is COMPLETE. Will continue to monitor number of complaints and report to demonstrate on-going	

						commitment On-going as RBC have decided to carry over this Local Indicator for 2011/12	
Bonfires	Encourage composting recycling and enforce bonfire controls on demolition sites	E&WMS, neighbourhood (P Scotney)	L	ongoing	AQ2	Policies are already in place to investigate complaints within 5 days 2010: Policies and procedures in place and therefore action is COMPLETE. Will continue to monitor number of complaints and report to demonstrate on-going commitment.	
Smoke control	Enforce the requirements of the Smoke Control Areas In West Bridgford	E&WMS, neighbourhood (P Scotney)	L	ongoing	AQ1	Policies are already in place to investigate complaints within 5 days 2010: Policies and procedures in place and therefore action is COMPLETE. Will continue to monitor number of complaints and report to demonstrate on-going commitment.	
AQ monitoring/ information	Continued monitoring throughout the borough. Development of County wide AQ website and develop consistent monitoring procedures. Air quality monitoring data and reports published on Rushcliffe.gov.uk web site	E&WMS (M Hickey)	L	Implemented Updates in 2009 Annually June July 2009	Web site going live. Updates to web site design Published on web	Envitec & Casella employed by AQSG to install	Further training on the use of the software has been undertaken in 2008/09. Further web development needs to take place though the AQSG to further enhance the service. Initial meetings arranged to discuss updates made for July 2009 Web site went live in 2008. RBC real time data is now published on the web for Loughborough Road NO2. Previous data and reports are on RBC website. Meetings have continued in 2009 and further development is expected in 2010 and publicity given to the new site. 2009. This measure is now accessible to the public and is completed albeit amendments to the website will take place and new additions as time allows 2010 monitoring has continued through 2010. website has been accessible over the year also.
Local Strategic Partnership	Develop key actions on air quality improvement within the Environmental Issues Group	P Scotney/ P Philips	L	M	NI85 N194	Rushcliffe Community Partnership have developed an Action Plan ' A Better Future for Rushcliffe – Protecting and Improving Our Environment' Key actions with the aim of reducing Rushcliffe's Eco footprint and air quality being one aspect of the action plan. To be implemented over 08/09 2009 Local Strategic Partnership - The environmental action plan is being updated and will include specific actions on climate	

					<p>change, these are likely to concentrate on green travel and sustainable food issues. The LSP has supported the development of a green streets initiative (encouraging green travel) in the West Bridgford area. A role out of the "Greening Campaign" to parishes and neighbourhoods across Rushcliffe, encouraging communities to take first steps to reduce their impact, has been carried out with 10 communities so far signed up.</p> <p>2010: Rushcliffe Environmental Partnership on-going. Various community projects in place. Climate change action plan has been completed: http://www.rushcliffe.gov.uk/upload/public/attachments/271/rushcliffe_climate_change_action_plan_09d.pdf</p> <p>Measures of interest are, travel plan, energy advice, Planning policy.</p> <p>An Eco Houses group has been set up in West Bridgford, this has held open days PV demonstration day and evening seminars</p> <p>Rushcliffe Solar project has been established - providing advice on fitting solar PV - A survey of potential properties that could install solar PV has identified about 4500 in West Bridgford as suitable. Awareness raising through delivery of a letter to potential properties, a website and Saturday surgeries has led to 225 detailed reports being produced for home owners.</p> <p>The greening campaign phase 1 has been completed in Kinoulton, Ruddington and West Bridgford. Radcliffe and Sutton Bonington are beginning stage 1. Seven other communities considering involvement. Kinoulton started a phase 2 project in Dec 2010.</p> <p>Transition WB have established a number of food schemes - Garden Share; Food Co-op; Community Supported Agriculture scheme (Great Green Garden); Transition Allotment; Lembas buyers' group; Fruit tree planting; Abundance project. Melton Road market to be established, promoting local produce.</p> <p>A community food grant scheme is in development by the Rushcliffe Environmental Partnership.</p>
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Liaison with the Highways Agency	Develop further actions for the improvement of air quality within the AQMA's	E&WMS(M Hickey / Sarah Cairns)	L	2009/2010	Meet with HA at least annually. Forward any Air quality reports to the HA as a consultee Contact the Route manager in 2009 if necessary	<p>2009.The HA have attended one meeting of the AQSG in early 2009 and provided an update on air quality from their perspective to the group as a whole. Regarding RBC the HA are of the opinion that the levels of NO2 along the A52 in AQMA2 are expected to fall below the AQS objectives before projects such as the A453 become live. This is based on an Air Quality assessment undertaken by consultants on their behalf for the A453 widening project. HA are to undertake study in 2009/2010 as indicated in the following measure. Reports are forwarded to the HA annually from Rushcliffe. Sites in AQMA 2 have gone below AQO in 2009 therefore further action with HA not high priority for AQMA2. Rushcliffe has liaised with the route manager for the A52 to consult on moving the PM10 to Holme House and the exceedences for NO2 at the site.</p> <p>2010 levels in AQMA 2 are all showing below the AQO. As such this item has not been pursued as a priority and consideration is being given to revoking this AQMA. Contact has been maintained over 2010 with the route manager for the A52 with regards to the Stragglethorpe junction and support has been provided by the HA to install power and a base for the pm10 monitor at this site.</p>	
A52 Traffic Study	Determine traffic levels and air quality impacts along A52 from Widmerpool to Clifton and associated junctions.	Highways Agency	H	By end of 2010	Production of final report	<p>2009 study ongoing at this time 2010: contact has been made with route manager for the A52. The study data has not been forwarded as yet. Expected in 2011.</p>	
VOSA vehicle emissions testing	Liaise with NCC and evaluate feasibility of enforcement of emission standards within AQMA's	E&WMS (M Hickey)	L	2009/2010	Under take monitoring	The action was raised at the AQSG. 2 LA's agreed to part take in a joint scheme. This was insufficient to fund the project.	Item will remain open but no further progress has been made. 2009 no progress 2010 no progress made

RBC fleet and fuel policy	Use good vehicle management. Evaluate cleaner fuels/vehicles	E&WMS (Robert Yarnall)	L	M	NI194 Review of fuel policy	Fleet operated on bio diesel mix. Currently have 1 Euro V vehicle with 2 more to be delivered in June 08. Older vehicles on 8 year rolling programme of change. Has 1 electric all terrain vehicles for country park. To review fuel policy again in 2009. Driver awareness training in place Progress on fleet composition to be update annually by RBC Fleet Manager 2009. Fleet manager has not provided and update for this measure in time for report publication. No progress to report 2010. (1) The fleet currently operates on a blend of Bio / diesel mix approximately 5%/95% (2) Currently we have 5 x Euro V vehicles on the fleet (3) There are another 6 Euro V vehicles due on the fleet before the end of this financial year. (4) We currently have one electric vehicle.(Rushcliffe Country Park) (5) Awareness training is being given to drivers during their annual CPC courses for fuel efficient driving. (6) Fleet composition reviewed annually for continuity of design , and any other environmental and fuel saving developments. (7) Progress is being made to introduce our refuse vehicles with Electric Bin lifters in a phased approach with the possibility of two of these units being in service by March 2012
LTP integration	Reduction/prevention of traffic increase in AQMA 1 through the LTP	LTP transport Planners (Sean Parks)	H	April 2010 During 2009	Production of indicators and targets for each LTP measure annually AQ7	LTP table reported in 2008 Met with LTP on 2 occasions in 2008. New table supplied by LTP with targets and indicators added for 2009 see attached table. 2009: progress and indicators table produced by LTP . Meeting continuing on target to progress measures and highlight areas for improvements/development 2010: targets are mostly in the green with only 4 measures showing no overall direction.
Reduction in NO2 in AQMA's	Measure NO2 concentrations at key receptor locations in AQMA's	E&WMS (M Hickey)	H	ongoing	AQ8 full details of NO2 results reported annually to Defra through R&A	Generally levels increased in 2007. Levels have reduced in 2008 such that a number of key sites are now at or below the annual AQS objectives. 2009 has seen levels fall again. Noted exceptions are the THF. Predictions using the Defra future year's tool suggest that all sites will be compliant in 2011 if traffic growth does not occur. 2010: AQMA 2 has again remained below the AQO for all monitored sites. AQMA1 two sites remain above the AQO and the NOX monitor is below the objective for this year again but did rise from the previous year.

Reduction in NO2 in AQMA's	Renew NO2 and PM10 monitors in AQMA 1	E&WMS (M Hickey)	H	April 2010	Implemented in 2009 and Jan 2010	<p>New Romon enclosure and new No2 analyser purchased from Casella through a joint procurement with Nottingham City to reduce costs. A grant toward the monitor was applied for and £1500 received from Defra 2010: monitor installed and now operational</p> <p>PM10, Sven Leckel EU monitor was renewed in 2009 purchased from Eti the current supplier. Measure completed in 2009.</p>
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Table 9.4 Rushcliffe BC Air Quality Action Plan indicators

Indicator	2006		2007		2008		2009		2010	
	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual
N185: Percentage CO2 reduction from LA operations	N/A	N/A	N/A	N/A	N/A	Base line established 2008/09 was 4,740,475 kg.	5% reduction	CO2 output for 2009/10 was 4,461,611 kg 6% reduction achieved	5% reduction	Not available yet see *1
N186: Per capita reduction in CO2 emissions in the LA area	N/A	7.1%	N/A	7.0%	N/A	6.9%	5% reduction	Not available yet	5% reduction	Not available yet NI186 is published 2 years in arrears Full data set available at http://www.decc.gov.uk
N187: Tackling fuel poverty - % of people receiving income based benefits living in homes with a low and high energy efficiency rating	N/A	N/A	N/A	2007/8 baseline. SAP below 35 6.32% Sap above 65 33.6	N/A	2008/9 baseline. SAP below 35 5.53% Sap above 65 40.32%	2009/10 SAP below 35 4.8% SAP above 65 43%	2009/10 SAP below 35 9.22% SAP above 65 32.26%	2010/2011 SAP below 35 4% SAP above 65 46%	2010/2011 SAP below 35 7.1% SAP above 65 30%

N194: Air quality – % reduction in NOx and primary PM10 emissions through local authority's estate and operations		N/A	N/A	N/A	N/A	5%	Base line established	5% reduction		5% reduction	6% reduction
LIEWM20: % of risk based inspections undertaken as part of the annual programme PPC				98%	100%	98%	100%	98%	100%	98%	100%
AQ1: Number of smoke control complaints investigated		N/A	2	N/A	2	N/A	2	n/a	5	n/a	9
AQ2: Number of bonfire complaints investigated		N/A	83	N/A	83	N/A	69	n/a	32	n/a	45 bonfires + 6 bonfires producing dark smoke
AQ3: Number of RBC staff remote working							25 home workers 21 occasional	increase	23 home workers 17 occasional	increase	2010 not available in time for publication
AQ4: Air quality assessments reviewed through the planning process	No of Assessments					n/a	6	n/a	4	n/a	4
AQ4 continued	No of properties affected covered by assessments					n/a	Approx 2125 units & 28,400 m2	n/a	09/01025/OUT 5,500 dwellings up to 30 hectares employment	n/a	crown estates bingham 1000 residential dwellings (C3); 15.6 hectares of employment development

							business park		A453 dueling consultation effects 13,304 properties		10/01853/FUL bingham Tescos, potential impacts on residents in Bingham area particularly Kighill
									09/01119/FUL 295m2 office use in AQMA		cotgrave colliery: Redevelopment of site for upto 470 dwellings; employment uses (B1, B2 and B8); open space; landscaping; footbridge crossing the canal; associated works including roads, cycleways, footpaths and car parking (revised scheme)
									08/00567/OUT 470-500 dwellings & business use (33.4Ha)		2 properties affected by John Brookes saw mills 3 MW wood fuelled renewable energy biomass plant (resubmission due to change in technology)
AQ5:	Number of pre application discussions					n/a	4	n/a	3	n/a	2
	Number of applications commented on for air quality					n/a	9	n/a	9	n/a	10
AQ6: Number of Travel plans conditioned through the planning process						n/a	1	n/a	0	n/a	1 *Travel to work plan for Cotgrave colliery (March 2011 decision notice)
AQ7: Number of meetings with LTP						3	2	3	3	3	3

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AQ7/2: Number of meetings with HA			1	0	1	1	1	1	1	0
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Definitions

SAP below 35 = % of people receiving income based benefits living on homes with a low energy efficiency rating.

SAP above 65 = % of people receiving income based benefits living on homes with a high energy efficiency rating.

*1 Please note for 2010/11 the method of calculation will change, these figures will be re-worked to give figures for 09/10 and 10/11. Data for 2010/11 is not available yet..

Rushcliffe BC Air Quality Action Plan Indicators –continued

Indicator		2006		2007		2008		2009		2010		2011	
		Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual
			µg/m ³		µg/m ³		µg/m ³		µg/m ³		µg/m ³		µg/m ³
AQ8: NO2 air quality in AQMA's at receptor locations	Key sites in AQMA												
NO2 Monitor annual mean, Loughborough Road, West Bridgford			N/A for 2006 2005 was 39.93	No increase	43.2	Reduction by 3.5 µg/m ³	38.4	No increase <40	34.1	No increase <40	39.24	<40	
Loughborough Road residential			36.14	No increase	45.8	Reduction by 6 µg/m ³	40	No increase <40	35.3	No increase <40	37.6	<40	
Radcliffe Road, West Bridgford			43.6		51.4		38.6	No increase <40	40.1	No increase <40	40.8	<40	
37 Radcliffe Road (formerly Midlands Communications on Radcliffe Road, West Bridgford			40.72	Reduction by 1 µg/m ³	48.2	Reduction by 8.5 µg/m ³	40.6	Reduction by 0-1 µg/m ³ <40 *1	(tube 40.6) assessed at receptor as 39.9	Reduction by 0-1 µg/m ³ <40 *1	(new tube location 33.3) assessed at receptor as 34.2	<40	

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Trent House Flats, Trent Bridge		44.67	Reduction by 5 µg/m ³	52.5	Reduction by 12.5 µg/m ³	39.6	No increase <40	43.3	No increase <40	42.0	Reduction by 2.5 µg/m ³	
Trent Boulevard B, Lady bay area		43.62	Reduction by 4 µg/m ³	50.6	Reduction by 11 µg/m ³	38.0 (revised)	<40	40.3	<40	38.8	<40	
Clover lands A52		39.84	No increase	48	Reduction by 8 µg/m ³	44.2	Reduction by 4.5 µg/m ³ <40	38.5	Reduction by 4.5 µg/m ³ <40	36	<40	
Windy Ways A52 (Nottingham Knight Island)		41.24	Reduction by 2 µg/m ³	44	Reduction by 4 µg/m ³	39.3	<40	38.8	<40	35	<40	

Red above AQO

Orange below AQO but increase on previous year

Green below AQO and fall on previous year

*1 this site was on a business premise (Not a relevant receptor). This tube has now been moved to the nearest first floor receptor for the later part of 2009 and on as recommend in the USA 2009.

Table 9.5 Traffic flows in AQMA's (and main roads into AQMA's)

(THIS DATA IS COMMERCIALY CONFIDENTIAL AND MAY NOT BE USED OR REPRODUCED WITHOUT THE PERMISSION OF THE TRANSPORT PLANNING TEAM AT NOTTINGHAMSHIRE COUNTY COUNCIL. ENQUIRIES SHOULD BE MADE TO ANDREI CRUDGINGTON IN THE TRANSPORT PLANNING TEAM (0115) 977 2393)

ROAD	LINK	AQMA		AADT	AADT	chang	AADT	chang	AADT	chang	AADT	chang	Chang
NO.	NO.	A	LOCATION (FROM - TO)	2006	2007	e from 2006- 2007	2008	e from 2007- 2008	2009	e from 2008- 2009	2,010	e from 2009- 2010	e from 2006- 2010
A 52	54	2	Clifton Boulevard: A 453 Clifton Lane - A 60 (Nottingham Knight roundabout)	50,550	51,600	1,050	50,050	-1,550	50,200	150	49,900	-300	-650
A 52	55	2	Clifton Boulevard: A 60 (Nottingham Knight roundabout) - A 606 (Wheatcroft roundabout)	34,150	36,700	2,550	35,650	-1,050	35,700	50	36,600	900	2,450
A 52	56		Gamston Lings Bar Road: A 606 (Wheatcroft roundabout) - Ambleside	25,550	24,950	-600	24,650	-300	24,950	300	24,750	-200	-800
A 52	57		Gamston Lings Bar Road: Ambleside - A 6011 (Gamston roundabout)	25,650	26,200	550	24,950	-1,250	25,250	300	25,000	-250	-650
A 52	58		Radcliffe Road: A 6011 (Gamston roundabout) - Sandy Lane (Holme House)	41,750	42,400	650	40,250	-2,150	40,900	650	40,600	-300	-1,150
A 60	122	1	Trent Bridge, Nottingham: B 685 Meadow Lane - A 6520 Radcliffe Road	46,700	43,100	-3,600	42,850	-250	43,000	150	40,550	-2,450	-6,150
A 60	123	1	Loughborough Road, West Bridgford: A 6520 Radcliffe Road - A 606 Melton Road	33,200	33,600	400	31,200	-2,400	30,800	-400	32,150	1,350	-1,050
A 60	124	1	Loughborough Road, West Bridgford: A 606 Melton Road - Rugby Road	13,050	13,200	150	13,250	50	14,300	1,050	14,150	-150	1,100
A 60	125		Loughborough Road, West Bridgford: Rugby Road - Boundary Road	13,500	13,650	150	13,550	-100	13,500	-50	13,400	-100	-100
A 60	126	2	Loughborough Road, West Bridgford: Boundary Road - A 52 (Nottingham Knight roundabout)	18,450	17,650	-800	17,550	-100	17,750	200	17,600	-150	-850
A 606	139	1	Melton Road, West Bridgford: A60 Loughborough Road - Musters Road	14,200	14,350	150	12,600	-1,750	12,550	-50	11,650	-900	-2,550
A 606	140		Melton Road, West Bridgford: Musters Road - Boundary Road	12,600	12,750	150	12,650	-100	12,600	-50	12,000	-600	-600
A 606	141		Melton Road, West Bridgford: Boundary Road - A52 (Lings Bar roundabout)	12,600	12,100	-500	12,050	-50	11,800	-250	11,550	-250	-1,050

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Rushcliffe Borough Council

A 6011	289	1	Lady Bay Bridge, Nottingham: Meadow Lane - A6520 Radcliffe Road	22,40 0	21,25 0	-1,150	21,10 0	-150	21,65 0	550	21,25 0	-400	-1,150
A 6011	290	1	Radcliffe Road, West Bridgford: Lady Bay Bridge - Davies Road	26,65 0	26,95 0	300	26,80 0	-150	26,65 0	-150	26,40 0	-250	-250
A 6011	291	1	Radcliffe Road, West Bridgford: Davies Road - Regatta Way	27,85 0	27,25 0	-600	27,10 0	-150	26,95 0	-150	26,70 0	-250	-1,150
A 6011	292	1	Radcliffe Road, West Bridgford: Regatta Way - A52 (Gamston roundabout)	26,00 0	26,30 0	300	25,90 0	-400	25,75 0	-150	25,50 0	-250	-500
A 6520	343	1	Radcliffe Road, West Bridgford: A60 Loughborough Road - A6011 Lady Bay Bridge	18,65 0	18,85 0	200	18,75 0	-100	n/a	n/a	n/a	n/a	n/a
A 6520	368	1	Radcliffe Road, West Bridgford: A60 Loughborough Road - Fox Road						17,05 0	-1,700	18,20 0	1,150	-450
A 6520	369	1	Radcliffe Road, West Bridgford: Fox Road - A6011 Lady Bay Bridge						18,65 0	-100	18,50 0	-150	-150
B 679	507	1	Wilford Lane: B 680 Ruddington Lane, Wilford - A 60 Loughborough Road, West Bridgford	17,05 0	17,25 0	200	15,55 0	-1,700	16,55 0	1,000	16,70 0	150	-350
				Overall change on all roads listed		-450		-13,650		1,350		-3,400	-16,050
				change in AQMA1		-3,650		-7,000		50		-2,150	-12,650
				change in AQMA2		2,800		-2,700		400		450	950

AADT: Annual Average Daily Traffic Flow

Commentary

Rushcliffe continue to work toward achieving a reduction in the impact of vehicle movements in the AQMA, however, the greatest positive impact is expected to be from national policy on transport and the implementation of the NCC LTP measures as the vast majority of transport is commuter traffic. The measures being currently worked on by the LTP are shown in Table 9.1. Rushcliffe are aware that the Nottingham City have extended their AQMA to the boundary with our AQMA1 and as such it is has been agreed to invite the city to attend the meetings with NCC LTP manager that we host to determine if a more coordinated approach can be adopted. The meetings can be used to explore other measures that can be adopted to improve air quality along this transport corridor. In 2010 a single meeting took place which discussed the approaches being used by Rushcliffe and the City to ensure a common approach is being adopted.

In 2010 Rushcliffe have put plans forward to move the main civic centre contact point away from Pavilion Road to a more easily accessible area in the West Bridgford Centre. The main driving force for this is the financial savings that can be gained in the long term by sharing the police station with the Nottinghamshire Police. However, due to the Civic centre being within the AQMA 1 area and attracting customers by car it is expected that this move will see reductions in trip movements to the civic centre. Rushcliffe can confirm this move took place in April 2011.

The transport data in Table 9.5 above indicates that there has been a decrease in traffic through the AQMA 1 last year and a very small increase in AQMA2 since last year. Overall since 2006 the table indicates traffic has reduced in the areas measured or remained stable. Given that over this time the vehicle fleet will have modernised, (and will continue to modernise) if the trend in traffic levels continues downward then NO2 should also fall.

The planning process will be used to seek to introduce mitigation measures both for climate change and air quality impacts where ever possible to mitigate any future development impacts that may put pressure on transport.

10 Conclusions and Proposed Actions

10.1 Conclusions from New Monitoring Data

New monitoring data for 2010 has indicated a number of diffusion tube sites are continuing to show a downward trend but also the variability of air quality monitoring with a minor number of sites experiencing an increase in 2010. The NO₂ Chemi-luminescent monitor has shown an increase over 2010 but is still below the AQO. However the lack of data capture and the reliance on unratified data to annualise it reduces the accuracy of this annual mean.

The exceedences in the AQMA1 relate to 2 sites that are consistently above the AQO for the annual mean. These two sites being the Trent House Flats and the Radcliffe Road site. These two sites are only marginally above the AQO in 2010 but roadside levels are higher particularly around the Trent Bridge junction highlighted by the TBI tube. It is therefore important to ensure no new receptors are allowed to develop in this situation which may make achieving the AQO in the future more difficult or impossible without major re-design of road layouts.

An assessment of the higher reporting site (THF) using the future years calculation in TG(09) suggests that this site will be below the AQO in 2012. However RBC is aware that the improvements in emissions assumed by this method have not occurred and as such this date may extend until other national measures begin to have a greater impact on the vehicle fleet mix and/or measures in the NCC Action plan and the Nottingham City Council take effect.

In AQMA 2 all sites have demonstrated compliance with the AQO for NO₂. Monitoring will continue unchanged at these sites to determine if levels remain below the AQO for a consistent period. The move of the A52 roadside site to 3BT now better reflects actual exposure from this stretch of the A52. The comparison with the 3BT and the Cloverlands sites indicates the Cloverland's site to be highest exposure site. The Windy Wayes' site has made significant reductions over 2010.

The monitoring undertaken around the Stragglethorpe Junction is gain significantly higher than the NO₂ annual mean AQO. These results are fully discussed in the detailed assessment report for this site but initial results indicate the creation of a further AQMA at this site.

The NO₂ Chemi-luminescent results indicate there is a continuing need to keep monitoring at the current site with no changes and hopefully achieve better data capture in 2011.

PM₁₀ monitoring has ceased in the AQMA following the demonstration that the long term trend is compliant with this AQO at this site in the AQMA. The monitor will be moved in 2011 to the Stragglethorpe/A52 junction.

10.2 Conclusions relating to New Local Developments

Rushcliffe confirms that there are no new developments that have been identified at this stage that will require more detailed consideration in the next USA or R&A report. The A46 has been subject to an air quality assessment as part of the EIA/public enquiry and this did not indicate there would be any air quality issues during the

construction or following the completion of the building works. The site is subject to dust control and management methods to control the impact of dust from the site and is in any case a temporary issue.

With regards to proposed development in the Bingham area this has highlighted that this area may be subject to future development and the centre of Bingham is a bottle neck for traffic. Current traffic levels are low but increased development will cause an increase in traffic going through this area. As such, despite AQ assessments indicating levels will be comfortably below the AQO Rushcliffe have placed 2 new NO₂ tube monitoring sites on Kighill in Bingham. Results should help to identify if this area is a concern should future expansion of Bingham take place.

10.3 Other Conclusions

In general the vast majority of the Rushcliffe area experiences good air quality and the continuing levels of NO₂ at the chemi-luminescent monitor being below the AQO indicates that on this road link NO₂ is still compliant in 2010 but air quality remains a concern due to the upward move in 2010 to just below the AQO annual mean. Where problems are shown to exist these are attributed to commuter traffic going into and out of Nottingham. As such any measures that reduce traffic in the City will also benefit Rushcliffe for air quality impacts.

Given that funding for the tram system extension known as NET2 has been given the go ahead and subject to final negotiations and the contract being awarded in late summer 2011, construction work on the new lines could start by the end of the year. Passenger services across the extended tram network could be fully operational by the end of 2014. Rushcliffe will therefore expect to see some reductions in commuter traffic once these lines are running.

Two new tram lines to Chilwell and Clifton connecting with the existing Line One at the redeveloped Hub interchange at Nottingham Railway Station. The Chilwell line will serve key locations such as the Meadows, Queens Medical Centre, Nottingham University, Nottingham Science Park, Beeston, Chilwell and a new 1300 space Park and Ride site near to the A52 'Bardills' roundabout. The Clifton line will serve key locations including the Meadows, Wilford, Compton Acres, Clifton and a new 1000 space Park and Ride site adjacent to the A453.

This measure is a major project that has the potential to remove commuter traffic from the road network once operational with the existing tram system being very well used in the city area. Again though this measure has been the subject of considerable controversy over the route and the financing approach being adopted (workplace parking levy).

The detailed assessment for Stragglethopre has recommended a further AQMA at this site. Monitoring will continue.

In early 2011 the PM₁₀ monitor was moved to this site and is now operational at the time writing.

Rushcliffe's AQAP is linked to the County Council's LTP as the traffic that is the cause of the exceedences is commuter traffic from within, and outside of, Rushcliffe making its way into and out of Nottingham over the River Trent crossings. The County Council are best placed to influence regionally the behaviour of commuters and as such Rushcliffe are not in direct control of implementing the measures that

may have the greatest impact on levels of traffic in the area. NCC has provided an update on the LTP measures which are indicating they are on target (with minor exceptions) across the county. The nature of these locations makes it difficult to remedy the problems with infrastructure and therefore smarter choices measures (such as travel planning, marketing and promotions of alternatives to the car) are more likely to provide the solution. Unfortunately, the types of such measures do not always make it possible to calculate the effects of the measures specifically in the AQMA 1 or 2 areas. Rushcliffe is aware of the suggested reporting format to quantify the impacts on the AQMA's on NO₂, these impacts, however, are not always available but where possible these have been included within the report. Traffic volumes as well as journey times have decreased along the monitored NCC routes within the AQMA1. Correspondingly, cycling levels have increased within Rushcliffe.

NCC has noted that due to finance pressures, the capacity to impact on air quality may be reduced in future years. This is apparent in the reduction in funding from Central Government. Smarter choices as detailed above are predominantly funded through revenue funding which historically has been difficult for the County Council to fund. The LSTF bid may offer significant opportunities to increase the level of such measures, if successful.

Rushcliffe is aware that the City has recently extended the AQMA toward Trent Bridge (to the border with AQMA1) acknowledging the air quality impacts of this transport corridor. As such work undertaken by the city in their AQAP should also lead to benefits in AQMA1.

In March 2011 the Government confirmed that funding is to be made available to enable the construction of the tram extension NET Phase Two after cost savings were identified to make the project more affordable. A preferred bidder has been selected to build the two new tram lines and it is hoped that construction will begin towards the end of this year and the extended network fully operational by 2014. This measure is a major project that has the potential to remove commuter traffic from the road network once operational with the existing tram system being very well used in the city area. Again though this measure has been the subject of considerable controversy over the route and the financing approach being adopted (workplace parking levy).

10.4 Proposed Actions

Action is required with regard to the exceedences at the Stragglethorpe/ A52 junction at Holme House. The proposed action is the set-up of a further AQMA following acceptance of the Detailed Assessment.

Consultations will need to take place with regard to any new AQMA.

The PM10 monitor will be moved to the above site in 2011.

NO2 diffusion tube sites will be established at sites on Kighill in Bingham to help identify if future development in or around Bingham could lead to local concerns about AQO for NO2 being exceeded.

Heather Vale NO2 diffusion tube to be relocated to a relevant receptor closer to the road source.

Monitoring will continue on the sites in AQMA 2 over 2011. If the results indicate all sites are again compliant over 2011 a decision will be made in 2012 as to continue to monitor further or to consider steps to revoke the AQMA.

Monitoring has indicated the need to continue to keep the AQMA1 area unchanged and to continue with monitoring in this area.

Rushcliffe will continue liaise with the City and County on the new extension of the city AQMA and action plan.

Rushcliffe will review the A52 traffic study when published and review the findings of the report with regard to air quality impacts.

The next report due by Rushcliffe will be a USA 2012 and if the detailed assessment for Holme House is accepted by Defra a Further Assessment will be required within 12 months of the declaration.

11 References

Highways Agency's Design Manual for Roads and Bridges (DMRB), Volume 11, Section 3, Part 1 Air Quality, May 2007, and accompanying spreadsheet DMRB Screening Method V1,03.xls. July 2007

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Local Transport Plan for Nottingham, 2006-2011, Nottinghamshire County Council

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Air Quality Considerations for Developers, Rushcliffe Borough Council, 2010

GLM7, Gradko Laboratories NO2 Laboratory Method

BSEN 123412, EC reference Method, British Standard

MDHS 14/2, General methods for the sampling and gravimetric analysis of respirable and total inhalable dust, HSE

Policy G1, Non statutory Local Plan, Rushcliffe Borough Council

PPG 13, planning policy guidance 13, transport, Communities and Local Government (formerly OPDM)

PPS 23, Planning policy statement 23, Planning and pollution control, Communities and Local Government (formerly OPDM)

Policy 36 East Midlands Regional Plan, East Midlands Regional Assembly, 2006

LDF, Local Development Framework, Rushcliffe Development Framework - Core Strategy Option for Consultation. (Consultation document)

Rushcliffe Borough Council published documents are available from www.Rushcliffe.gov.uk. Air quality reports are located on page <http://www.rushcliffe.gov.uk/doc.asp?cat=10437>

12 Glossary of terms

Air Quality Standard – these standards represent minimal/no risk health based standards, for ambient concentrations of pollutants. They are based purely on medical evidence, taking no account of costs, benefits or technical feasibility.

Air Quality Objective – these objectives take account of both costs and benefits, forming benchmarks in time, against which “Air Quality Standards” can be achieved.

Annual mean – The average of the concentrations measured or calculated for each pollutant for one calendar year.

AQMA – Air Quality Management Area

AQAP – Air Quality Action Plan

Assessment – The consideration of whether estimated levels for the relevant future period are likely to exceed the levels set in the objectives.

AURN – Automated Urban and Rural Network of air quality monitoring stations

Background concentration – Concentration of a particular pollutant thought to be present in an area, which cannot be accounted for by dispersion modelling from local emissions. It is generally caused by transportation of pollutants over long distances.

CO – Carbon Monoxide

Data Capture – The percentage of all the possible measurements for a given period that were validly measured

DEFRA – Department for Environment, Food and Rural Affairs

DETR – Department for the Environment and the Regions (Now DEFRA)

Emissions Inventory – A full list of sources that emit pollutants into the atmosphere over a sustained period of time.

Exceedences – A period of time where the concentration of a pollutant is greater than, or equal to, the appropriate air quality objective.

IPPC – Integrated Pollution, Prevention and Control Act 2000

Maximum hourly average – The highest hourly reading of air pollution obtained during the time period under study.

NETCEN – National Environmental Technology Centre

NO₂ – Nitrogen Dioxide

NO_x – Nitrogen Oxides

Part A installations – Large emitters of pollution, which are regulated by either the Environment Agency (A1) or Local Authorities (A2)

Part B installations – **Smaller emitters of pollution, which are regulated by local authorities**

Percentile – A value found by listing a set of numbers in order and calculating the number below which a certain percent of the data set lies. For example, the 99th percentile of values in a data set, is the value below which 99% of the data falls.

PM₁₀ – Particulate Matter with a diameter of 10µm or less.

QA/QC – Quality Assurance/Quality Control.

Running Mean – A mean or series of means, calculated for overlapping time periods. For example, a daily running 8 hour mean equals any 8 hour period within that day.

SO₂ – Sulphur Dioxide.

µg/m³ – Microgrammes per cubic metre of air. A measure of concentration in terms of mass per unit volume. A concentration of 1µg/m³ means that one cubic metre of air contains one microgram (millionth of a gram) of pollutant.

PPB – Parts per Billion

LDF – Local Development Framework

13 Further information

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May 2011

Rushcliffe Borough Council

Appendix A: Bias Calculation using AEA DIFFTPAB version 3.

No local Bias calculation used in this round of the R&A

Appendix B: Calculations of fall off with distance at receptors

Calculation of fall of with distance for WL3



This calculator allows you to predict the annual mean NO₂ concentration for a location ("receptor") that is close to a monitoring site, but nearer or further the kerb than the monitor. The next sheet shows your results on a graph.

Enter data into the yellow cells

Step 1	How far from the KERB was your measurement made (in metres)? (Note 1)	2.1	metres
Step 2	How far from the KERB is your receptor (in metres)? (Note 1)	7.3	metres
Step 3	What is the local annual mean background NO ₂ concentration (in µg/m ³)? (Note 2)	20.00662	µg/m ³
Step 4	What is your measured annual mean NO ₂ concentration (in µg/m ³)? (Note 2)	40.3	µg/m ³
Result	The predicted annual mean NO ₂ concentration (in µg/m ³) at your receptor (Note 3)	34.3	µg/m ³

Calculation of fall off with distance for A453



This calculator allows you to predict the annual mean NO₂ concentration for a location ("receptor") that is close to a monitoring site, but nearer or further the kerb than the monitor. The next sheet shows your results on a graph.

Enter data into the yellow cells

Step 1	How far from the KERB was your measurement made (in metres)?	(Note 1)	2.1	metres
Step 2	How far from the KERB is your receptor (in metres)?	(Note 1)	23.8	metres
Step 3	What is the local annual mean background NO ₂ concentration (in µg/m ³)?	(Note 2)	14.43716	µg/m ³
Step 4	What is your measured annual mean NO ₂ concentration (in µg/m ³)?	(Note 2)	41.4	µg/m ³
Result	The predicted annual mean NO ₂ concentration (in µg/m ³) at your receptor	(Note 3)	25.9	µg/m ³

Warning: your receptor is more than 20m further from the kerb than your monitor, treat result with caution

Calculation of fall off with distance for A46 East Bridgford Site



This calculator allows you to predict the annual mean NO₂ concentration for a location ("receptor") that is close to a monitoring site, but nearer or further the kerb than the monitor. The next sheet shows your results on a graph.

Enter data into the yellow cells

Step 1	How far from the KERB was your measurement made (in metres)?	(Note 1)	12	metres
Step 2	How far from the KERB is your receptor (in metres)?	(Note 1)	7	metres
Step 3	What is the local annual mean background NO₂ concentration (in µg/m³)?	(Note 2)	11.3	µg/m ³
Step 4	What is your measured annual mean NO₂ concentration (in µg/m³)?	(Note 2)	27.5	µg/m ³
Result	The predicted annual mean NO₂ concentration (in µg/m³) at your receptor	(Note 3)	31.0	µg/m ³

Fall off with distance for 37RR site



This calculator allows you to predict the annual mean NO₂ concentration for a location ("receptor") that is close to a monitoring site, but nearer or further the kerb than the monitor. The next sheet shows your results on a graph.

Enter data into the yellow cells

Step 1	How far from the KERB was your measurement made (in metres)?	(Note 1)	13.8	metres
Step 2	How far from the KERB is your receptor (in metres)?	(Note 1)	10.5	metres
Step 3	What is the local annual mean background NO ₂ concentration (in µg/m ³)?	(Note 2)	25.19431	µg/m ³
Step 4	What is your measured annual mean NO ₂ concentration (in µg/m ³)?	(Note 2)	33.3	µg/m ³
Result	The predicted annual mean NO ₂ concentration (in µg/m ³) at your receptor	(Note 3)	34.2	µg/m ³

Appendix C: Diffusion tube bias

Diffusion Tube Bias Adjustment Factors

Gradko International Limited, 20%TEA in Water, R&A bias factor is 0.92 available from [http://laqm.defra.gov.uk/documents/Diffusion Tube Bias Factors v04_11_v6.xls](http://laqm.defra.gov.uk/documents/Diffusion_Tube_Bias_Factors_v04_11_v6.xls)

Factor from Local Co-location Studies (if available)

No local bias calculation has been undertaken for this R&A report due to lack of data capture at the NO2 monitor.

Discussion of Choice of Factor to Use

A bias factor of 0.92 has been used based on the national factor for gradko Labs using 20%TEA in water. The resultant 0.92 is consistent with previous reporting bias values with the national factor being used due to poor data capture of 64% at the NO2 monitor on Loughborough Road being well below the %90 required for a local study.

PM Monitoring Adjustment

There is no adjustment factor required for the PM10 monitor as the monitor is a gravimetric monitor that is EU equivalent.

Short-term to Long-term Data adjustment

PM 12 April to 31 December 2010

	AM	PM	AM/PM
Chesterfield UB	19.26	17.13	1.12
Northampton UB	20.92	19.72	1.06
Nottingham UB	39.73	37.02	1.07
Market Harborough Rural	13.28	12.08	1.10
	Average (Ra)=		1.089

Annualised result = 1.089 x 36.02 = **39.23**

QA/QC of automatic monitoring

The PM10 was serviced twice annually by ETI in 2010 under a contract arrangement. The operation of the monitor and the filter changes and data handling is by trained council employees with filters being conditioned and weighed by TES Bretby using in house procedures.

The NOx monitor was new in February 2010 and has been serviced twice in the year by Casella Measurement under a contract arrangement. Data handling is undertaken using Envista software and rescaling of data is carried out by trained council operators. Calibration checks of the NOx monitor take place at least fortnightly with certified gas supplied by BOC. Zero calibration is undertaken using an air scrubber which is replenished as part of the service contract. Further details of the QA/QC procedures is contained in Chapter 2.2 Quality Control (QA/QC).

Appendix D: Nitrogen Dioxide Continuous Monitoring Results for 2010

Nitrogen Dioxide Continuous Monitoring Results 2010

Air Quality Objectives for Nitrogen Dioxide

There are two objectives for NO₂:

(i) 200µg/m³ measured as a 1 hour mean, not to be exceeded more than 18 times a year

(ii) 40µg/m³ measured as an annual mean (µg/m³ = micrograms/cubic metre)

NO₂ results based on 1 hour exposure

	%data capture	average 1 hr (µg/m ³)	min 1 hr (µg/m ³)	max 1 hr (µg/m ³)
Jan-10	No Data	No Data	No Data	No Data
Feb-10	No Data	No Data	No Data	No Data
Mar-10	No Data	No Data	No Data	No Data
Apr-10	62	42.91	8.06	119.94
May-10	99	28.97	3.97	116.94
Jun-10	100	28.12	4.70	103.00
Jul-10	99	30.27	5.49	109.10
Aug-10	73	27.96	5.57	73.98
Sep-10	59	31.83	86.76	86.76
Oct-10	96	37.68	4.73	100.76
Nov-10	99	42.10	2.74	147.22
Dec-10	84	56.27	6.67	162.0
annual mean		36.016		
Overall % data capture	64.0%			
No > 200µg/m ³ (105 ppb)		0		
99.8th percentile for 2010		131.56		

Monitoring location: Loughborough Road, West Bridgford, Nottingham

Grid:

458173,	337771
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Please note: The grid location is provided to *indicate* the position of the monitor only
For a more accurate location you should contact the E&WMS

Appendix E: Diffusion tube 2010 monthly results for all sites

Grid Reference	AQMA	Name	Location	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Mean ug/mg3	co-located mean	Bias adjusted mean
458716, 338238	1	EDWARD ROAD, LADY BAY	ER	50.84	53.74	42.94	32.59	30.24	27.87	24.51	31.10	29.44	36.66	51.57	53.82	38.78		35.7
458126, 337727	1	LOUGHBOROUGH ROAD (RES)	LR	50.02	46.11	44.44	36.79	39.14	33.25	31.49	34.60	39.70	43.14	47.75	43.81	40.85		37.6
458174, 337771.5	1	1 LOUGHB'H RD W/B	NA1	36.31	48.17	34.04	34.92	29.53	28.04	28.99	33.89	32.16	41.23	44.34	44.07	36.31	37.54	34.5
458174, 337771.5	1	1 LOUGHB'H RD W/B	NA2	47.71	42.24	38.05	35.58	30.17	27.81	31.70	33.52	28.16	39.86	48.93	49.84	37.80		
458174, 337771.5	1	1 LOUGHB'H RD W/B	NA3	49.61	47.50	39.65	36.24	n/a	27.92	31.10	34.79	27.98	35.97	50.05	42.93	38.52		
458090, 337527	1	PARTICULATE MONITOR	PM10	52.12	49.71	38.83	33.41	34.10	33.74	22.98	27.93	34.49	39.25	48.65	40.97	38.02		35.0
458114, 337518	1	THE POINT	POINT	39.23	42.00	32.82	17.93	26.01	26.24	24.73	24.10	28.57	31.29	38.40	39.85	30.93		28.5
458284, 338150	1	RADCLIFFE ROAD	RR	52.84	55.57	45.41	41.81	42.56	45.66	32.16	41.01	39.98	40.71	49.26	45.74	44.39		40.8
458919, 338120	1	SWANS HOTEL	SH	49.24	43.00	34.21	31.62	27.41	27.97	20.96	26.18	32.92	44.24	42.72	39.88	35.03		32.2
458274, 338117	1	TRENT BRIDGE INN	TBI	64.39	58.23	57.29	52.21	49.96	45.69	44.11	50.90	51.70	47.96	65.72	48.74	53.08		48.8
458752, 338278	1	TRENT BOULEVARD A	TBLA	47.19	40.77	40.54	41.22	33.82	31.65	32.96	33.30	35.25	35.71	39.79	39.56	37.65		34.6
458756, 338267	1	TRENT BOULEVARD B	TBLB	52.76	42.20	44.77	47.19	35.45	42.62	33.92	39.70	44.72	35.01	40.73	47.14	42.18		38.8

458227, 338197	1	TRENT HOUSE	THF	49.91	57.28	n/a	51.53	39.55	43.68	34.70	36.95	42.44	46.81	45.74	48.17	45.16	45.67	42.0
458227, 338197	1	TRENT HOUSE	THF2	58.56	57.88	n/a	45.51	46.79	n/a	31.93	35.97	44.32	49.51	42.00	49.23	46.17		
458134, 337581	1	WILFORD LANE 3	WL3	55.21	49.42	49.82	35.13	43.29	28.17	39.83	36.48	41.71	51.94	47.51	47.53	43.84		40.3
457266, 335008	2	3 BOTANY CLOSE	3BT	42.83	43.69	37.90	32.51	20.02	n/a	24.61	n/a	30.12	36.74	33.48	34.69	33.66		31.0
457223, 335033	2	CLOVERLANDS	CL	50.35	41.83	47.09	36.59	30.76	n/a	n/a	30.92	35.22	40.72	44.66	39.42	39.76	39.10	36.0
457223, 335033	2	CLOVERLANDS	CL2a	45.25	44.93	43.32	35.49	n/a	n/a	n/a	29.94	31.72	39.92	35.75	39.64	38.44		
456785, 335359	2	LANDMERE NURSING HOME	LL	40.82	44.01	33.29	32.14	25.71	22.22	n/a	25.60	27.54	27.53	37.16	38.63	32.24		29.7
457612, 334813	2	A60/A52 JUNCTION (Nott Knight PH)	NK	60.84	58.16	64.70	47.84	42.79	45.56	38.08	37.97	52.06	43.52	45.99	39.90	48.12		44.3
456970, 335222	2	8 SALTBY GREEN	SG	44.02	36.99	33.73	28.83	24.65	24.98	25.01	26.05	27.64	35.97	33.07	36.38	31.44		28.9
457651, 334840	2	WINDYWAYS	WW	39.67	40.92	43.04	37.16	24.43	32.95	39.44	37.27	39.86	38.96	46.21	37.24	38.10		35.0
458457, 338215	no	RADCLIFFE ROAD	37RR	50.75	43.51	44.23	30.89	30.82	22.87	n/a	25.88	n/a	n/a	37.46	38.98	36.15		33.3
451697, 330925	no	A453	A453	50.72	46.45	55.80	40.00	45.51	45.04	36.47	44.77	46.24	49.19	41.09	38.30	44.97		41.4
470371,3 42046 (april 08 on)	no	A46 EAST BRIDGFORD	A46/EB	42.46	36.84	26.99	26.48	24.49	22.79	20.44	28.75	24.92	32.39	41.51	31.61	29.97	29.90	27.5
470371,3 42046 (april 08 on)	no	A46 EAST BRIDGFORD 2	A46/EB2	39.92	41.54	29.77	30.15	20.55	23.90	21.34	26.51	25.31	33.54	36.93	28.56	29.84		
463011, 338213	no	A52 HOME HOUSE(façade) STRAGGLETHORPE	A52/HHF 1	72.40	68.47	68.03	56.87	57.12	51.86	46.31	46.12	48.93	54.96	52.95	49.52	56.13	56.48	52.0
463011, 338213	no	A52 HOME HOUSE(façade) STRAGGLETHORPE	A52/HHF 2	67.25	66.49	60.20	56.22	52.74	53.51	48.59	44.68	52.52	55.41	60.28	84.06	58.50		
463011, 338213	no	A52 HOME HOUSE(façade) STRAGGLETHORPE	A52/HHF 3	68.07	65.69	61.02	54.75	52.84	48.84	44.16	45.44	52.89	53.69	51.94	58.59	54.83		

463040, 338232	no	A52 HOME HOUSE(�a�ade) STRAGGLETHORPE HHF4	A52/HHF 4	not sampled									48.61	42.05	44.96	42.77	44.60		41.0
464644, 338730	no	RADCLIFFE A52	A52/RT	49.08	45.66	47.18	43.18	44.01	35.75	31.38	35.99	41.55	39.78	48.34	42.94	42.07		38.7	
466630, 339652	no	A52 SAXONDALE	A52/S	57.93	45.48	41.81	39.42	36.36	37.41	24.54	34.23	34.34	38.07	48.56	45.87	40.34		37.1	
465929, 339543	no	A52 SOUTH AVE, RADCLIFFE	A52/SA	52.15	52.19	40.24	38.06	35.38	40.34	24.00	29.38	33.32	39.00	40.11	43.56	38.98		35.9	
457701, 337342	no	THE BEECHES HOTEL	BH	41.40	40.28	33.80	31.39	30.09	25.05	27.17	26.74	30.00	41.20	37.49	36.10	33.39		30.7	
458501, 337854	no	34 BRIDGFORD ROAD	BR	36.39	34.84	32.13	28.20	25.29	21.62	21.69	25.64	25.97	23.96	29.74	34.74	28.35		26.1	
460662.7 , 336513.5	no	A52 LINGS BAR Hospital	GLB HOS	38.95	35.77	27.05	24.15	n/a	19.26	15.12	18.70	20.50	25.68	27.25	33.75	26.02		23.9	
458049, 337340	no	HICKORY HOUSE	HH	35.05	42.47	32.27	29.27	25.33	23.64	22.26	23.07	25.39	30.81	41.82	36.67	30.67		28.2	
458326, 336714	no	HAMPTON ROAD	HR	34.32	30.73	24.45	18.89	17.65	13.99	15.49	17.50	19.49	26.27	33.55	34.03	23.86		22.0	
456893, 336768	no	21 HEATHERVALE	HV	44.46	38.27	34.84	26.27	21.90	21.66	17.62	20.46	22.34	23.74	30.65	35.07	28.11		25.9	
458399, 337172	no	PEVERIL COURT	PC	48.34	42.17	34.70	31.47	27.62	28.13	23.63	27.65	30.40	35.78	44.25	42.93	34.76	33.52	30.8	
458399, 337172	no	PEVERIL COURT 2	PC2	46.71	44.59	32.17	32.33	27.50	23.75	25.31	25.93	reduced to one tube				32.29			
457366, 337091	no	Roam(1110 Wilford Lane lamp post)	Roam(11 0 WL)	44.27	45.03	39.54	36.34	n/a	29.77	n/a	n/a	n/a	34.97	47.94	N/A	39.69		36.5	
463005, 338204	no	STRAGGLETHORPE ROAD	SR	50.62	57.15	42.34	44.02	40.68	39.71	27.48	36.12	38.59	30.18	45.85	38.44	40.93		37.7	
457873, 337426	no	39/41 WILFORD LANE	WLR/2	43.58	40.96	35.21	32.34	26.96	25.91	21.80	25.92	28.18	32.63	39.75	33.32	32.21		29.6	
		blank	blank	0.31	0.24	0.32	0.45	0.08	0.43	0.09	0.16	0.2	0.09	0.08	0.18	0.22			
		Comments		20% TEA in water	20% TEA in water	20% TEA in water	20% TEA in water	20% TEA in water	20% TEA in water	20% TEA in water	20% TEA in water	20% TEA in water	20% TEA in water	20% TEA in water	20% TEA in water				

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Appendix F: New roads progress in Rushcliffe with sect 38 agreements with the Nottinghamshire transport planners.

S38 AGREEMENTS						
Rushcliffe Development Control		KEY	S38 in place			
APC No.	Location	Developer	Road Length (m)	S38 Agreement Date	Application ref.	Comments
	East Leake Hall (Walnut Gardens)	David Wilson Homes		01/10/2008		05/00956/FUL
R94	Belvoir Vale Adult Training Centre, Grantham Road, Bingham	Ben Bailey Homes	170	16/06/2006	05/00291/REM	Some drainage issues, gullies blocked - Gary to check.
R95	Clifton Road, Ruddington, Former Station Yard	Crest Nicolson	430	06/06/2007	05/01438/REM	GE to arrange final inspection before adoption
R96	Land to the South of Nottingham Road, Bingham	Fairclough/Miller Homes	2460		05/00683/REM	on going
	Phase 1A	"	230	13/09/2006		Problem of sways
	Phase 1B	"	167	21/11/2006		Problem of sways

	Centre Section (see R102)	"	869			MG
	Phase 2 (Eastern End)	"	1194	21/11/2006		
R98	Gables Farm, Bars Hill, Costock	Infrastructure Design Ltd for Charles Church South Midlands	275	13/04/2007	06/00040/ REM	S104 received, David Collins to check on standing water adjacent to entrance
R99	Hill Drive, Bingham	Rushcliffe Homes/Metropolitan Housing Trust	75	Requested 30/1/07		
R100	Gotham Primary School, Kegworth Road, Gotham	Ivan Poole	97	10/06/2008	06/01009/ REM	Achieve/Completed
R101	Camelot Street, Ruddington, Depot	Crest Nicolson	440	19/06/2008	04/01632/ REM	Granted on appeal - sent to Niz for checking 8/9/06. DC to sort problems of different drawings
R102	Land South of Mallow Way and Mill Hill Road, Bingham	Redrow Homes	869		07/00353/ REM	on-going
	Phase 1			13/11/2008		on-going
	Phase 2			13/11/2008		on-going
	Phase 3			13/11/2008		on-going
R103	Debdale	William Davis	74	15/04/2008	06/02056/F	Achieve/Completed

	Lane, Keyworth				UL	
R104	Hawthorne Farm, Main, Road, Shelford	JMS/G2 Developments	79	06/01/2010	06/00967/F UL	Sewers Adopted GE to check
R105	Plumtree Road, Cotgrave	Miller homes	121	28/07/2008	07/02056/F UL	GE to check. DC to check on state .
Filed with s38s	Closes Side Lane, East Bridgford	Eastern Shires Housing Association	99	10/09/2009	06/02127/F UL	GE to chase up
R106	Windmill Inn, 34 Nottingham Road, Gotham	Whytehall Homes	52	20/06/2008	07/01531/F UL	Placed on Maintenance GE to chase up adoption drawings.
R107	Yew Tree Farm, Lombard Street, Orston	Exemption				
R108	Rectory Sutton Bonnington	David Wilson Homes	195	22/10/2008	07/00410/F UL	on-going
Filed with s38s	Bruce Drive, West Bridgford	Westbury Homes				Old RBC APC Not served
R109	Croyde House, Radcliffe Rd, Gamston.	Bovis Homes	47		Withdrawn 08/00501/F UL	with the planning application

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R111	Land rear: 2-8 Hoe View Rd, Cropwell Bishop.	Eastern Shires Housing Association	90		08/01703/F UL	Section 38 signed and works completed to binder course. Problem with surface water drainage outfall
R112	Land off Gotham Road, East Leake.	Barratt/David Wilson Homes North Midlands Ltd	517			Section 38 design check undertaken and approved no request for section 38 agreement . Works have commenced on site.
R113	Land off Gotham Road, East Leake.	J.S. Bloor (Measham) Ltd	515			Section 38 design check undertaken and approved no request for section 38 agreement . Works have commenced on site.
R114	RAF Newton 83 Dwellings	Bellway	580		06/01226/ OUT	No progress
R115	RAF Newton 82 Builds (in same file as R114)	David Wilson Homes	1030			
R116	Land S/East of Tithby Rd, Bingham	Davidsons Developments Ltd	1600			
R117	Sharphill Melton Rd, Edwalton. 300 dwellings	David Wilson Homes North	est			
R118	Sharphill Melton Rd, Edwalton. 1200 builds	Bovis Homes Central	esr			
R119	97 Bingham Rd Radcliffe	W Westerman Ltd	200			

Appendix G: Traffic flows from 2009 to 2010.

ROAD NO.	LINK NO.	LOCATION (FROM - TO)	AADT 2009	AADT 2010	difference
A 46	33	Leicestershire boundary - A 606 Melton Road	24300	23750	-2%
A 46	34	A 606 Melton Road - Nottingham Road (Cotgrave crossroads)	16600	15850	-5%
A 46	35	Nottingham Road (Cotgrave crossroads) - A 52 (Saxondale roundabout)	18250	17400	-5%
A 46	36	A 52 (Saxondale roundabout) - A 6097 (Margidunum roundabout)	26350	26050	-1%
A 46	37	A 6097 (Margidunum roundabout) - Main Street, Farndon	22600	22450	-1%
A 52	54	Clifton Boulevard: A 453 Clifton Lane - A 60 (Nottingham Knight roundabout)	50200	49900	-1%
A 52	55	Clifton Boulevard: A 60 (Nottingham Knight roundabout) - A 606 (Wheatcroft roundabout)	35700	36600	2%
A 52	56	Gamston Lings Bar Road: A 606 (Wheatcroft roundabout) - Ambleside	24950	24750	-1%
A 52	57	Gamston Lings Bar Road: Ambleside - A 6011 (Gamston roundabout)	25250	25000	-1%
A 52	58	Radcliffe Road: A 6011 (Gamston roundabout) - Sandy Lane (Holme House)	40900	40600	-1%
A 52	59	Sandy Lane (Holme House) - Nottingham Road, Radcliffe-on-Trent	34850	34650	-1%
A 52	60	Radcliffe Bypass: Nottingham Road - Cropwell Road	30650	30450	-1%
A 52	61	Radcliffe Bypass: Cropwell Road - Bingham Road	25550	25400	-1%
A 52	62	Bingham Road, Radcliffe-on-Trent - A 46 (Saxondale roundabout)	26500	26350	-1%
A 52	63	Bingham Bypass: A 46 (Saxondale roundabout) - Grantham Road, Bingham	15900	15450	-3%
A 52	64	Grantham Road, Bingham - C 3, Elton	17050	16550	-3%
A 52	65	C 3, Elton - Leicestershire boundary	15400	14950	-3%
A 60	122	Trent Bridge, Nottingham: B 685 Meadow Lane - A 6520 Radcliffe Road	43000	40550	-6%
A 60	123	Loughborough Road, West Bridgford: A 6520 Radcliffe Road - A 606 Melton Road	30800	32150	4%
A 60	124	Loughborough Road, West Bridgford: A 606 Melton Road - Rugby Road	14300	14150	-1%
A 60	125	Loughborough Road, West Bridgford: Rugby Road - Boundary Road	13500	13400	-1%
A 60	126	Loughborough Road, West Bridgford: Boundary Road - A 52 (Nottingham Knight roundabout)	17750	17600	-1%
A 60	127	Loughborough Road, Ruddington: A 52 Clifton Boulevard - B 680 Kirk Lane	15700	15650	0%
A 60	128	Loughborough Road, Ruddington: B 680 Kirk Lane - Mere Way	17600	17550	0%
A 60	129	Mere Way, Ruddington - Pendock Lane, Bradmore	13700	13650	0%
A 60	130	Pendock Lane, Bradmore - Gotham Lane, Bunny	12150	12150	0%
A 60	131	Gotham Lane, Bunny - C 26, Costock	8950	8950	0%
A 60	132	C 26, Costock - A 6006, Rempstone	8500	8500	0%

A 60	133	131	A 6006, Rempstone - Leicestershire boundary	6450	6450	0%
A 453	137	135	Leicestershire boundary - Kegworth Road, Ratcliffe-on-Soar	26200	26750	2%
A 453	138	136	Kegworth Road, Ratcliffe-on-Soar - C 4 Clifton Lane (Crusader roundabout)	22500	23000	2%
A 606	139	137	Melton Road, West Bridgford: A60 Loughborough Road - Musters Road	12550	11650	-8%
A 606	140	138	Melton Road, West Bridgford: Musters Road - Boundary Road	12600	12000	-5%
A 606	141	139	Melton Road, West Bridgford: Boundary Road - A52 (Lings Bar roundabout)	11800	11550	-2%
A 606	142	140	A52 (Lings Bar roundabout) - Clipstone Lane (Plumtree turn)	23250	23150	0%
A 606	143	141	Clipstone Lane (Plumtree turn) - A46	15700	14800	-6%
A 606	144	142	A46 - Upper Broughton	6500	6450	-1%
A 606	145	143	Upper Broughton - Leicestershire boundary	5000	5000	0%
A 6006	289		Leicestershire boundary - Park Lane, Sutton Bonington	10600	10200	-4%
A 6006	290		Park Lane, Sutton Bonington - C4 (East Leake Turn)	7700	7650	-1%
A 6006	291		C4 (East Leake turn) - A60, Rempstone	8550	8500	-1%
A 6006	292		A60, Rempstone - Leicestershire boundary	8200	7050	-16%
A 6011	308		Lady Bay Bridge, Nottingham: Meadow Lane - A6520 Radcliffe Road	21650	21250	-2%
A 6011	309		Radcliffe Road, West Bridgford: A6520 Radcliffe Road - Davies Road	26650	26400	-1%
A 6011	310		Radcliffe Road, West Bridgford: Davies Road - Regatta Way	26950	26700	-1%
A 6011	311		Radcliffe Road, West Bridgford: Regatta Way - A52 (Gamston roundabout)	25750	25500	-1%
A 6520	368		Radcliffe Road, West Bridgford: A60 Loughborough Road - Fox Road	17050	18200	6%
A 6520	369		Radcliffe Road, West Bridgford: Fox Road - A6011 Lady Bay Bridge	18650	18500	-1%

B&C roads

NO.	NO.	LOCATION (FROM - TO)	2009	2010	
B 679	409	Wilford Lane: B 680 Ruddington Lane, Wilford - A 60 Loughborough Road, West Bridgford	16550	16700	1%
B 680	410	Ruddington Lane, Wilford: B 679 Wilford Lane - Landmere Lane	5600	5550	-1%
B 680	411	Wilford Road: Landmere Lane - Clifton Road, Ruddington	6450	7200	10%
B 680	412	High Street, Ruddington: Clifton Road - Kirk Lane	7150	8800	19%
B 680	413	Kirk Lane, Ruddington: High Street - A 60 Loughborough Road	7550	6700	-13%
C 3	717	Stragglethorpe Lane: A 52, Bassingfield - Main Road, Cotgrave	7150	7000	-2%
C 3	718	Stragglethorpe Lane, Cotgrave: Main Road - Hollygate Lane	2700	2650	-2%
C 3	719	Stragglethorpe Lane, Cotgrave: Hollygate Lane - A 46	5350	5250	-2%
C 3	720	Nottingham Road: A 46 Fosse Way - Church Street, Cropwell Bishop	4950	5050	2%
C 3	721	Church Street, Cropwell Bishop - Langar	2600	2650	2%
C 3	722	Langar - A 52, Elton	n/a	n/a	n/a

C 3	723	A 52, Elton - Staunton-in-the-Vale	1200	1200	0%
C 4	726	Clifton Lane/Nottingham Road: Farnborough Road, Clifton - Kegworth Road, Gotham	5900	5750	-3%
C 4	727	Leake Road: Kegworth Road, Gotham - Bunny Lane, East Leake	3450	3800	9%
C 4	728	Gotham Road, East Leake: Bunny Lane - Main Street	6850	7550	9%
C 4	729	Castle Hill/Loughborough Road: Main Street, East Leake - A 6006	5500	5400	-2%
C 4	730	Leake Road: A6006 Melton Road - Main Street, Stanford on Soar	n/a	n/a	n/a
C 26	768	Main Street/Kinoulton Lane: Hickling Road, Kinoulton - A46	1,200	1200	0%
C 26	769	Kinoulton Lane: A46 - A606 Melton Road	250	250	0%
C 26	770	Station Road: A606 Melton Road - Keyworth Road, Widmerpool	n/a	n/a	n/a
C 26	771	Wysall Road/Widmerpool Road: Willoughby Road, Widmerpool - Main Street, Wysall	550	550	0%
C 26	772	Costock Road/Wysall Road: Wymeswold Road, Wysall - A60, Costock	900	900	0%
C 26	773	Costock Road, Leake Road: A60, Costock - Castle Hill, East Leake	3900	4000	3%
C 26	774	Main Street, East Leake: Caslte Hill - Gotham Road	6800	6700	-1%
C 26	775	Main Street, East Leake: Gotham Road - Station Road	5350	5250	-2%
C 26	776	Station Road/West Leake Road: Main Street, East Leake - Dark Lane, West Leake	2200	2300	4%
C 26	777	Pithouse Lane, West Leake: Dark Lane - Brickyard Lane	1700	1650	-3%
C 26	778	Melton Lane: Pithouse Lane, West Leake - College Road, Sutton Bonington	2,200	2150	-2%
C 26	779	Station Road: College Road, Sutton Bonington - Kingston Lane, Kegworth	n/a	n/a	n/a
C 26	7790	Station Road, Kegworth: Kingston Lane - Leicestershire boundary	n/a	7100	7100
C 28	780	Chapel Lane/Kirkhill: A 46 (Margidunum roundabout) - Newgate Street, Bingham	7200	7050	-2%
C 28	781	Fairfield Street, Bingham: Newgate Street - Nottingham Road	7450	7300	-2%
C 28	782	Tithby Road, Bingham: Nottingham Road - A 52 Bingham Bypass	3900	3850	-1%
C 28	783	Tithby Road: A52, Bingham - Bingham Road, Tithby	3200	3050	-5%
C 28	784	Bingham Road: Tithby - Langar	n/a	n/a	n/a
C 28	785	Langar Lane/Harby Road: Langar - Leicestershire boundary	2550	2500	-2%
C 43	794	Nottingham Road/Main Road, Radcliffe on Trent: A52 - Shelford Road	9350	9200	-2%
C 43	795	Shelford Road, Radcliffe on Trent: Main Road - Queen's Road	7600	7450	-2%
C 43	796	Shelford Road: Queen's Road, Radcliffe on Trent - Shelford Hill	6100	6000	-2%
C 43	797	Shelford Hill - Newton	4150	4100	-1%
C 43	798	Newton - A 6097	3850	3800	-1%
C 43	799	Kirk Hill, East Bridgford: A6097 - Trent Lane	2700	2650	-2%
C 43	800	Main Street/Butt Lane: Kirk Hill, East Bridgford - A46	2100	2050	-2%
C 47	801	Station Road: The Green, Kingston on Soar - Melton Lane, Sutton Bonington	1100	1100	0%
C 47	802	College Road, Sutton Bonington: Melton Lane - Landcroft Lane	1900	1850	-3%
C 47	803	Main Street/Park Lane, Sutton Bonington: Landcroft Lane - A6006	2300	2250	-2%

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C 47	804	Main Street/Moor Lane, Normanton on Soar: A 6006 - Butt Lane	1950	1900	-3%
C 47	805	Stanford Road/Normanton Lane: Normanton on Soar - Stanford on Soar	n/a	n/a	n/a
C 47	806	Main Street, Stanford on Soar: Leake Lane - Leicestershire Boundary	n/a	4700	n/a
C 60	807	Normanton Lane/Nottingham Road, Keyworth: Station Road - The Square	5350	5250	-2%
C 60	808	Wysall Lane: Main Street, Keyworth - Widmerpool Road, Wysall	750	700	-7%
C 60	8080	Wymeswold Road: Widmerpool Road, Wysall - Leics Boundary	n/a	n/a	n/a
C 74	813	Bradmore Lane: A60, Bradmore - Station Road, Plumtree	2000	1950	-3%
C 74	814	Church Hill/Old Melton Road, Plumtree: Station Road - A606	2650	2600	-2%
C 74	815	Cotgrave Road, Tollerton: A 606 - Cotgrave Lane	n/a	n/a	n/a
C 74	816	Plumtree Road: Cotgrave Lane - Main Road, Cotgrave	8100	7950	-2%
C 74	817	Main Road, Cotgrave: Plumtree Road - Candleby Lane	8600	8450	-2%
C 74	818	Bingham Road, Cotgrave: Candleby Lane - Hollygate Lane	6600	6500	-2%
C 74	819	Colston Gate, Cotgrave: Hollygate Lane - Ring Leas	2400	2350	-2%
C 74	820	Colston Gate, Cotgrave: Ring Leas - A46	1700	1650	-3%
C 74	821	Colston Road: A46 - Colston Bassett	1650	1600	-3%
C 74	822	Harby Lane: Colston Bassett - Hose Lane	n/a	n/a	n/a
C 74	823	Harby Lane: Hose Lane - Leicestershire boundary	1150	1150	0%
C 127	830	Nottingham Road, Bingham: A 46 / A 52 (Saxondale roundabout) - Tithby Road	7000	6700	-4%
C 127	831	Long Acre, Bingham: Tithby Road - Market Street	8250	8100	-2%
C 127	832	Long Acre, Bingham: Market Street - Cherry Street	7100	6950	-2%
C 127	833	Grantham Road, Bingham: Cherry Street - The Banks	7950	7800	-2%
C 127	834	Grantham Road, Bingham: The Banks - A 52 Bingham Bypass	6150	7300	16%

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