



2016 Air Quality Annual Status Report (ASR)

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

Date (June, 2016)

Rushcliffe Borough Council

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Executive Summary: Air Quality in Our Area

Rushcliffe Borough Council has three existing AQMA's for the exceedance of the NO₂ annual mean values. No other pollutants are now monitored or above the objectives. These are associated with major traffic routes/junctions into/out of the City and around the urban area on the A52.

The levels on the AQMA 2 have been consistently below the annual mean AQS and this report recommends revocation of this AQMA.

Monitoring in AQMA 1 indicates improvement in levels in the Trent Bridge area which are marginally below the annual mean in this reporting year, although previously levels have been both significantly above and below the AQS. Additional real time monitoring (funded in partnership with the County Council, LTP planning department) is to take place in this hot spot area to provide a greater degree of accuracy. The Millicent Road/Loughborough Road site has been a long standing monitoring site and has shown levels to be reduced to below the AQS. As such this location will cease to be monitored in 2017 or when the Trent Bridge site monitoring commences.

The AQMA1/2014 at the Stragglethorpe/A52 location has indicated much lower levels of NO₂; there has been a full year's monitoring with a real time monitor rather than in the previous year where we had part year annualised results along with triplicate diffusion tube monitoring. Levels are still elevated but better than predicted.

This report contains a full data set of air quality monitoring undertaken in 2015 and trends for the last 5 years

Table 2.2 in the report outlines the actions the Council (and its Partners) has and will be taking in order to achieve compliance with the AQS.

Air Quality in Rushcliffe Borough Council

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas^{1,2}.

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion³.

Rushcliffe currently has three active AQMA in the area. The locations of the current AQMAs can be seen at <http://uk-air.defra.gov.uk/aqma/list>,

The borough has had new poultry units approved which are regulated by the EA and have been subject to their assessments and the planning process. There has been small scale biomass processes approved and some changes to permitted Processes; these are in the rural area, have been assessed for air quality impacts and are not predicted to be a cause of exceedance of any air quality objectives. A number of housing construction projects have been started including the Sharphill Woods development (discussed in previous R&A reports); the site has been subject to air quality assessments in previous reports but still is not operational. The Cotgrave colliery site has commenced housing occupation in part and the former RAF Newton estate has been completed with other development still on-going. These sites have been discussed and assessed in previous R&A reports and are not within the main Urban area where air quality levels are elevated.

The NET2 tram system is now fully operational and passes through parts of Rushcliffe. However, the NET as a whole as the benefit of reducing traffic in the wider Nottingham area and will benefit commuter routes as well as the Nottingham City.

The air quality action plan is linked to the Local Transport Plan which is implemented by the County Council. In addition Rushcliffe Borough Council considers air quality impacts for planning applications and developments in the borough. Applications that

¹ Environmental equity, air quality, socioeconomic status and respiratory health, 2010

² Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

³ Defra. Abatement cost guidance for valuing changes in air quality, May 2013

can impact on the meeting of AQS are assessed at the planning application stage and where appropriate conditions are applied or the application is amended to address any concerns found.

Rushcliffe also looks at its own operations and has developed a travel plan that will be implemented as part of the move to the new Arena site in December 2016. Prior to this the authority is moving to a greater remote worker base with limited worker capacity at the Arena. This will result in low transport related impacts from our own operations.

The Neighbourhoods service (Env Health) also works with other local authorities in the area through the NEPWG, EMAQN (a newly set up body with the HPA and other LA's and stake holders) and works with other organisations to promote greener transport measures or measure to improve the air quality in the Nottingham urban area.

Actions to Improve Air Quality

The core actions of the plan are the integration of measures with the LTP which is implemented via the Nottinghamshire County Council Transport Planners. In addition Rushcliffe Borough Council reviews planning applications for potential adverse impacts and promotes air quality improvements within the borough boundary and wider by being a member of the NEPWG and more recently the EMAQN (East Midlands Air Quality Network) which is a group set up and chaired by the PHE to promote air quality improvements in the regional area.

In addition actions by the Nottingham City Council will have some impact on the levels in RBC. The NET has now fully opened and will reduce car vehicle journeys from the new tram stop and car park at Clifton which passes through and has stops in the RBC area before entering the City Centre.

The individual measures are shown later in this report.

Local Priorities and Challenges

The location of AQMA 1 (on the approaches to Lady Bay and Trent bridges) and the site constraints makes it difficult to remedy the problems with small-scale infrastructure improvements and therefore smarter choices measures (such as travel planning, and marketing and promotion of alternatives to the car) are more likely to

provide improvements. Measures that facilitate and encourage walking, cycling and bus use will therefore be the priority actions in the foreseeable future.

Monitoring of the Local Transport Plan actions shows that the transport indicators are on target (with minor exceptions) across the county.

The County Council has concerns about potential cumulative impacts of proposed future development on the Trent Bridge AQMA as the Local Development documents have identified areas around the district for significant growth which may potentially impact on the AQMAs, and traffic growth will be above those that are forecast without the development occurring. Objection to such growth may be difficult and section 38, 278 and 106 planning obligations will be used to mitigate localised traffic impacts of individual developments as far as is possible and seek to ensure sustainable development takes place.

There is currently only planned mitigation of the cumulative traffic growth from proposed development on the strategic road network and the planning authority also has no plans to undertake air quality modelling of the cumulative impacts (particularly on the AQMAs) of the proposed developments.

The cumulative impacts of developments will, however, impact on the AQMA on Trent Bridge without significant sustainable transport measures being introduced and maintained at the developments (funded through the development control process); and the planning authority does not currently have any planned mitigation of the traffic growth at AQMA locations as part of the housing development proposals.

Without significant mitigation at these locations to specifically address housing proposals (e.g. significant sustainable transport improvements), any measures subsequently included within an AQMA action plan would be very unlikely to mitigate this planned growth.

The top-slicing of 43% of the integrated transport block from 2015/16 onwards by the government and allocating it to the Local Growth Fund means that from 2015/16 the integrated transport funding allocated to Nottinghamshire County Council reduced by approximately £3.5m; significantly reducing the funding available for transport improvements that will deliver air quality improvements.

The cessation of the Local Transport Fund funding in March 2016 and the Department for Transport's decision to not award Sustainable Transport Transition

Year Funding 2016/17 to the D2N2 area bid also means that several of the proposed actions in the action plan will be delayed further until such time as funding becomes available from Central Government.

How to Get Involved

To get involve in improving the air quality in our area please contact the Neighbourhoods Service at Rushcliffe Borough Council. The contact details are at the front of this report. The LTP plan is implemented by the County Council Local Transport Planners and can be contacted via the Nottinghamshire County Council Website www.nottinghamshire.gov.uk or

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1 Local Air Quality Management

This report provides an overview of air quality in Rushcliffe Borough Council during 2015. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by Rushcliffe Borough Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England can be found in Table E.1 in Appendix E.

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority must prepare an Air Quality Action Plan (AQAP) within 12-18 months setting out measures it intends to put in place in pursuit of the objectives.

A summary of AQMAs declared by Rushcliffe Borough Council can be found in Table 2.1. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at <http://www.rushcliffe.gov.uk/environmentalhealth/pollution/airquality/airqualitymanagementareas/>. The maps are listed in the right hand pane. The current AQMA's are also present at <http://uk-air.defra.gov.uk/aqma/list>.

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Pollutants and Air Quality Objectives	City / Town	One Line Description	Action Plan
AQMA No 1 Trent Bridge	NO ₂ annual mean	West Bridgford	An area encompassing the Lady Bay Bridge/Radcliffe Road junction, the Trent Bridge/Loughborough Road/Radcliffe Road junction and the Wilford lane/Loughborough Road/Melton Road junction in West Bridgford.	Air Quality Action Plan for Rushcliffe updated 2010 http://www.rushcliffe.gov.uk/media/rushcliffe/media/documents/pdf/environmentandwaste/airquality/AQAP%20revision.pdf
AQMA No 2 Nottingham Knight/A52	NO ₂ annual mean	West Bridgford	An area encompassing the A52 southern ring road between the Borough boundary and the eastern side of Nottingham Knight Roundabout	Air Quality Action Plan for Rushcliffe updated 2010 http://www.rushcliffe.gov.uk/media/rushcliffe/media/documents/pdf/environmentandwaste/airquality/AQAP%20revision.pdf

AQMA Name	Pollutants and Air Quality Objectives	City / Town	One Line Description	Action Plan
AQMA no1, 2011	NO ₂ annual mean	Radcliffe on Trent	Land adjacent to the A52 at Stragglethorpe Junction.	Stragglethorpe Road AQAP 2013 http://www.rushcliffe.gov.uk/media/rushcliffe/media/documents/pdf/environmentandwaste/airquality/Stragglethorpe%20air%20quality%20action%20plan%202013.pdf

2.2 Progress and Impact of Measures to address Air Quality in Rushcliffe Borough Council

Rushcliffe Borough Council has taken forward a number of measures during the current reporting year of 2015 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. More detail on these measures can be found in their respective Action Plans. Key completed measures are

- Awareness and training undertaken by the County Council amongst staff and works promoters to ensure that powers are used effectively and to make works promoters aware of their requirement to reduce traffic disruption and encourage alternative working methods that reduce peak period working/disruption on County Council managed roads
- Optimisation of traffic signals within the AQMA
- Personalised travel planning undertaken in areas adjoining the AQMA and along the NET route which could impact on people travelling through the AQMA
- School travel plans developed by the County Council at schools in the borough

- Eco-driver training amongst County Council employees
- The introduction of advisory 20mph speed limits outside all schools in the borough and the introduction of mandatory area-wide 20mph speed limits in two areas of West Bridgford to encourage more people to walk and/or cycle
- NET tram extensions to the south and west of the city (the line travelling to the south travels through part of West Bridgford which could potentially reduce vehicle journeys through the AQMA)
- The introduction of enhanced rail services which serve populations that may potentially otherwise have to travel through the Trent Bridge and Stragglethorpe AQMAs
- Eco-Stars programme (which ceased to be delivered when the Local Sustainable Transport Fund funding ceased)
- Major transport scheme improvements such as the A453 trunk road and the A6514 ring road improvements.

Progress on the following measures has been slower than expected due to:

- Park and ride sites due to the lack of revenue funding available for undertaking the feasibility studies (and revenue running costs) for such measures; as well as the lack of major scheme funding available for the delivery of such measures
- Rushcliffe Borough Council travel plan , as part of the move of the Borough Council Offices to the Area the following travel plan has been produced.
https://planningon-line.rushcliffe.gov.uk/online-applications/files/DBBAACAFEE7E68975C71462C320F33CC/pdf/14_01290_FUL--667557.pdf
- Introduction of a car club in the county as this will only be introduced once the club in the City proves consistently successful over a period of time (the Nottingham City car club was only introduced in April 2014)
- Expansion of the cycle hire scheme due to the cessation of Local Sustainable Transport funding and the DfT decision not to allocate Sustainable Transport Transition Year 2016/17 funding to the D2N2 area-wide bid.

Rushcliffe Borough Council expects the following measures to be completed over the course of the next reporting year: Rushcliffe Borough Council's priorities for the coming year are predominantly through measures to make the best use of the transport networks and through smarter travel measures that will encourage people to travel more sustainably. These include:

- Traffic control and information provision to minimise disruption and delay on County Council managed roads (including the A610) such as contingency planning, the effective co-ordination of works and the provision of real-time travel information
- Parking enforcement on County Council managed roads to ensure that the traffic keeps moving
- Travel planning such as personalised travel planning undertaken at major workplaces within the AQMA, travel planning at the County Council, and the development of new travel plans at businesses across the county through planning conditions
- Measures to reduce the need to travel at peak times such as the provision and encouragement of flexible working arrangements
- The facilitation of smarter travel behaviour such as the provision of a car sharing scheme, small scale sustainable transport improvements (e.g. cycle parking facilities, cycling network enhancements) on County Council managed roads, and integrated and concessionary ticketing schemes
- The encouragement of smarter travel behaviour such as the marketing and promotion of passenger transport, walking and cycling, provision of cycling and walking route maps, cycle training programmes, web-based journey planners
- The encouragement of the uptake of low-emission vehicles through the delivery of the Nottingham Go Ultra Low City bid funding.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments																																				
1	Traffic control and information undertaken to minimise traffic disruption and unnecessary congestion as part of NCC's network management duty.	Traffic management	UTC, congestion management, traffic reduction	Nottinghamshire County Council		Ongoing	Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> • Provided through the jointly (County and City Councils) funded traffic control centre that monitors traffic movement and provides real time traffic control over many traffic signal installations, including all those within the Trent Bridge AQMA • The Travelwise centre remains in operation 24hrs a day, every day. <p>Detailed journey time monitoring is undertaken to determine the impacts of highways work programmes on the highway network. This monitoring shows that between 2009/10 and 2014/15 journey times on the main routes in the AQMA have been restrained despite the significant increases in traffic volumes in the county in 2013/14 and 2014/15. The table below shows the journey time per mile in the morning peak on the main routes into the AQMA.</p> <table border="1"> <thead> <tr> <th>Route</th> <th>2009/10</th> <th>2010/11</th> <th>2011/12</th> <th>2013/14</th> <th>2014/15</th> </tr> </thead> <tbody> <tr> <td>A6011</td> <td>5.0 mins</td> <td>4.7 mins</td> <td>4.6 mins</td> <td>5.3 mins</td> <td>4.9 mins</td> </tr> <tr> <td>A6520</td> <td>4.2 mins</td> <td>4.6 mins</td> <td>4.6 mins</td> <td>5.0 mins</td> <td>4.9 mins</td> </tr> <tr> <td>A60</td> <td>3.1 mins</td> <td>3.1 mins</td> <td>2.8 mins</td> <td>2.9 mins</td> <td>3.0 mins</td> </tr> <tr> <td>A606</td> <td>3.8 mins</td> <td>3.5 mins</td> <td>3.7 mins</td> <td>3.9 mins</td> <td>3.8 mins</td> </tr> <tr> <td>All routes</td> <td>3.7 mins</td> <td>3.6 mins</td> <td>3.5 mins</td> <td>3.7 mins</td> <td>3.7 mins</td> </tr> </tbody> </table>	Route	2009/10	2010/11	2011/12	2013/14	2014/15	A6011	5.0 mins	4.7 mins	4.6 mins	5.3 mins	4.9 mins	A6520	4.2 mins	4.6 mins	4.6 mins	5.0 mins	4.9 mins	A60	3.1 mins	3.1 mins	2.8 mins	2.9 mins	3.0 mins	A606	3.8 mins	3.5 mins	3.7 mins	3.9 mins	3.8 mins	All routes	3.7 mins	3.6 mins	3.5 mins	3.7 mins	3.7 mins	Ongoing Ongoing	
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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
2	<p>Contingency planning, and effective event and incident management undertaken to minimise traffic disruption and unnecessary congestion as part of NCC's network management duty.</p> <p>These are managed through the joint County/City control centre and travelwise web site.</p>	Traffic management	UTC, congestion management, traffic reduction	Nottinghamshire County Council		Ongoing	Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> The local operating agreement between the authority and HE 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 incidents and dissemination of information Key locations on the local network have been identified and associated diversion routes investigated in line with the developing network hierarchy Incidents dealt with through agreed procedures and regular partnership meetings held. Working in close collaboration with the City and HE, tactical diversion routes have been developed for the emergency diversion of traffic from any part of the strategic road network, to reduce the delay in rerouting traffic to ease congestion at the time of incidents Detailed journey time monitoring undertaken annually since 2005/06. 	Ongoing Ongoing Ongoing	

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
3	Co-ordination of streetworks undertaken to minimise traffic disruption and unnecessary congestion as part of NCC's network management duty.	Traffic management	UTC, congestion management, traffic reduction	Nottinghamshire County Council		Ongoing	Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> • 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 undertaken to ensure that powers are used effectively • Street designations/network hierarchy review is ongoing to improve data quality for works promoters and network managers and to prioritise works management • Regular coordination meetings held between all works promoters and regional partners in addition to regular meetings between HE and regional partners to create a framework programme of planned works affecting strategic and local routes • Workshops held with major works promoters incl. utility companies to raise awareness of their requirements to reduce traffic disruption, to promote good practice and encourage alternative working methods that reduce peak period working/disruption • Detailed journey time monitoring undertaken annually since 2005/06. 	<p>Ongoing</p> <p>Complete</p> <p>Ongoing</p> <p>Ongoing</p> <p>Complete</p> <p>Ongoing</p>	

Rushcliffe Borough Council

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
4	Traffic signal upgrades	Traffic management	Strategic highway improvements, re-prioritising road space away from cars, including access management, selective vehicle priority, bus priority, high vehicle occupancy lane	Nottinghamshire County Council		2012/13 2012	Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> • Introduction of SCOOT/MOVA within AQMA was completed during 2012/13 • Upgrades to traffic signals on Bridgford Road/A60 junction in 2012 to enable alterations to the phasing of the signals leading to significant improvements to the operation of the A60/Radcliffe Road junction during the peak traffic period and off peak times, most significantly to allow the left turn manoeuvre from A60 London Road over Trent Bridge onto A6011 Radcliffe Road to go green earlier than before. This has the potential to significantly reduce the amount of time traffic is standing outside the Trent House flats on the A60 London Road (although it is dependent upon the length of queues through the junction). 	Complete 2012/13 Complete 2012	
5	Real time travel information	Public information	Via radio, television, internet, other	Nottinghamshire County Council		Ongoing	Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> • Information conveyed onto the local media and disseminated via NCC's web site, 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. 	Ongoing Ongoing	
6	Civil Parking Enforcement	Traffic management	Strategic highway improvements, re-prioritising road space away from cars, including access management, selective vehicle priority, bus priority, high vehicle occupancy lane	Nottinghamshire County Council		Ongoing	Manage parking to improve journey time reliability		<ul style="list-style-type: none"> • Introduced on county roads in May 2008 to help parking does not interfere with the free flowing traffic. 	Ongoing	

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
7	Pocket park and ride	Alternatives to private vehicle use	Bus based park & ride	Nottinghamshire County Council		2010	Increased public transport patronage / Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> Schemes were introduced along the A46 and A52 corridors in 2010. <p>The last monitoring of the two sites indicated that approx.6 vehicles use the A46 corridor site daily as a park and ride facility; and approx.6 vehicles use the A52 corridor site daily as a park and ride facility.</p>	Complete 2010	
8	Park & ride site to the east of Nottingham	Alternatives to private vehicle use	Bus based park & ride; rail based park and ride	Nottinghamshire County Council	2016-2021	Dependant on feasibility study findings	Increased public transport patronage / Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> Recognised in the LTP as a potential future scheme to help ease congestion on the A52 and the route into Nottingham (including the AQMA). Therefore further investigations are being undertaken to identify a site (potentially linked to new housing/employment development). A study on potential bus improvements along the A52 corridor has been commissioned including the identification of possible park and ride locations. 	Dependant on outcome of feasibility studies	
9	East Midlands Parkway station	Alternatives to private vehicle use	Rail based park and ride	Network Rail		2007-2009	Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> Construction of the East Midlands Parkway station on the A453 with adjoining park and ride site started in December 2007 and the station opened in January 2009 <p>In 2014/15 304,000 passengers (combined total arriving and departing) an 8% increase from 2012/13.</p>	Complete 2009	

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
10	The workplace parking levy (WPL)	Traffic management	Workplace Parking Levy, parking enforcement on highway	Nottinghamshire County Council		2012	Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> Aiming to reduce traffic volumes entering the City Centre the WPL scheme became fully operational in Nottingham City in April 2012. There are no plans to extend the scheme outside the City centre. The WPL provided funding for NET Phase 2; redevelopment of Nottingham Railway Station; and is also intended to support the Link Bus network, all of which may positively impact on the AQMA. 	Ongoing	
11	NCC travel plan	Promoting travel alternatives	Workplace travel planning	Nottinghamshire County Council		Ongoing	No. of people travelling by sustainable transport / Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> Operational for over 15 years and has been incorporated into the climate change action plan for the County Council NCC staff at work locations in the AQMA are surveyed annually to determine how people travel to work A variety of measures have been undertaken to promote alternatives to the car, including involvement in 'walk week', 'bike week', car sharing, and personalised travel planning etc. <p>The surveys undertaken during the 2015/16 financial year indicated that of the staff working at the West Bridgford campus 8% cycled (almost three times the county average) ;10% walked (county average 8%); 14% travelled by public transport (county average 9%); and 7% car share (county average 5%). These figures are much better than the mode of travel to work for all people in Nottinghamshire detailed in the 2011 census (3% cycled; 8% walked; 9% by public transport; and 5% car share).</p>	Ongoing Ongoing Ongoing	

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
12	Workplace travel plans	Promoting travel alternatives	Workplace travel planning	Businesses/ developers		Ongoing	No. of travel plans developed / Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> Workplace travel plans are developed with businesses as part of planning conditions and through voluntary arrangements. For example, Nottingham Forest has developed an approved travel plan which covers not only its employees but also supporters and includes match day smarter choices promotion <p>During 2015/16 a further 3 travel plans have been approved in Rushcliffe Borough including 1 in West Bridgford itself. Targeted travel planning (funded by the County Council) has also started at targeted employment sites in the Trent Bridge AQMA.</p>	Ongoing Ongoing	
13	Personalised travel planning	Promoting travel alternatives	Personalised travel planning; Intensive active travel campaign & infrastructure	Nottinghamshire County Council Rushcliffe Borough Council		2004 2015/16 2016 Dependent on availability of Central Govt funding Ongoing	No. of people travelling by sustainable transport / Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> Undertaken in 2003/04 in the Meadows and Lady Bay areas adjoining the AQMA Targeted personalised travel planning (funded by the County Council) undertaken along the NET Phase 2 routes – the outcomes from this work will not be available until Summer 2016 Personalised travel planning events are also planned for the major employment sites within the AQMA – the outcomes from this work will not be available until Autumn 2016 Future PTP will be dependent on the outcome of funding bids such as the 2016/17 Sustainable Transport Transition Year Funding which was unsuccessful Requests for funding from developers for travel planning at new residential developments are made to the planning authority by the County Council through the planning process where necessary. 	Complete 2004 Complete 2016 2016 Dependent on availability of Central Govt funding Ongoing	

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
14	School travel plans	Promoting travel alternatives	School travel planning	Nottinghamshire County Council		2000-2011	Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> School travel plans have been developed and approved at all the schools in Rushcliffe 	Complete March 2011	
15	Flexible working arrangements	Promoting travel alternatives	Encourage / facilitate home-working	Nottinghamshire County Council Rushcliffe Borough Council		Ongoing	Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> Flexible working arrangements for staff are operated by the County Council including provision of equipment to allow them to work from home. All office-based County Council employees are able to work from home or from 'touch down' offices nearer to home and are provided with remote access facilities. Arrangements remain in place and are ongoing During 2015, Rushcliffe Borough Council has begun the move to a new site, where all staff will be expected to incorporate Remote Working into their way of working. Therefore, a reduction in vehicle use within the AQMA's (and the Borough) and subsequent reduction in emissions. 	Ongoing Ongoing	
16	Eco-driver training sessions	Vehicle fleet efficiency	Driver training and ECO driving aids	Nottinghamshire County Council		2012	Improve air quality within the AQMA		<ul style="list-style-type: none"> Eco-driver training sessions to enable County Council employees to drive more efficiently and sustainably have been provided free to NCC staff. 	Complete 2012	

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17	Car sharing scheme	Alternatives to private vehicle use	Car & lift sharing schemes	Nottinghamshire County Council		2006 and ongoing	Increase the no. of people car sharing / Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> A car sharing scheme at NCC and throughout the county (nottinghamshare.com) was launched in April 2006 and continues to be promoted across the county. Whilst nottinghamshare is promoted throughout the year additional activities and promotion was held during liftshare week including features in the local press and other publications. <p>The number of current registered users on the website has increased to 2,788 in 2016 (an increase of 484 from 2015). The number of NCC staff registered on the website is 368. NCC staff are estimated to save 41,913 miles making emission savings of 13.8 tonnes of CO₂; and approximately 125kg nitrogen oxides over the next 12 months as a result of car sharing through the website.</p>	Ongoing	
18	Introduction of car club	Alternatives to private vehicle use	Car clubs	Nottinghamshire County Council	2014-2017	Dependant on monitoring of Nottm scheme	Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> Feasibility study undertaken by consultants on the merits of introducing such a scheme in the wider Nottingham area concluded that the greatest benefits would be seen by a scheme evolving out of a car share club introduced in the City. A car club was introduced in Nottingham City in April 2014. The scheme was funded through the Local Sustainable Transport Fund and the Nottingham City workplace parking levy. The contract for the scheme allows for the expansion of the car club in to the county at a later date if the club proves consistently successful over a period of time. The possibility of expanding the existing scheme with electric vehicles into the county is also being considered for inclusion as part of the successful Nottingham Go-Ultra Low City OLEV funding bid. 	Dependant on monitoring of Nottingham scheme	

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
19	Cycle parking facilities	Transport planning and infrastructure	Cycle network	Nottinghamshire County Council		Ongoing 2015	Increases in cycle trips / Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> • Cycle parking facilities are provided at various locations throughout West Bridgford and elsewhere in the county and city to encourage cycling for short journeys • Additional secure cycle parking was installed in West Bridgford in April 2015 to provide better integration for cyclists to make longer distance journeys by bus. These facilities will be accessible by bus smartcard. The Cycle Hub which is accessible by bus smartcard is located on the main bus route into Nottingham City as well as to outlying villages/towns elsewhere. 	Ongoing Complete 2015	

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
20	Cycling infrastructure	Transport planning and infrastructure	Cycle network	Nottinghamshire County Council Nottm City Council Nottinghamshire County Council	2015-2016	2016/17	Increases in cycle trips / Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> The Big Track, a 10mile car free route linking the AQMA to the City, employment centres, tourist attractions, the University, national cycle route networks and further afield has been introduced. The Big Track continues to be marketed through the Big Wheel and promotional maps/leaflets Lady Bay Bridge cycle lane is planned as part of Eastside Regeneration scheme. 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 dependent upon securing external funding Advance cycle stop lines have been installed at all feasible major signal junctions within the AQMA Wilford Lane cycle route, a 330m off-road 3m wide shared-use cycle route was installed on Wilford Lane in 2007/08 A coherent strategic cycling network has been developed for West Bridgford which is currently being consulted on Development control contributions are collected by Rushcliffe Borough Council and used to provide cycling, walking and public transport improvements within the AQMA. No funding was released by Rushcliffe Borough Council during 2015/16 for improvements that will help provide benefits across the AQMA. 	Complete Dependent upon external funding Complete 2006/7 Complete 2007/8 2017 Ongoing	

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
21	Cycle maps	Promoting travel alternatives Public information	Promotion of cycling Via leaflets	Nottinghamshire County Council		Ongoing	Increases in cycle trips / Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> Cycle maps of Greater Nottingham area have been produced and are updated when required. Maps continue to be distributed throughout the county, and are available as a hard copy and on-line. 	Ongoing	
22	Cycle training	Promoting travel alternatives	Promotion of cycling	Nottinghamshire County Council		Ongoing	Increases in cycle trips / Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> Cycle training continues to be offered free of charge. The County Council continues to offer nationally accredited cycle training to people of all ages and abilities. Cycle training is offered free of charge to children in the county and adult training is also available free to members of the public; whilst training is offered at workplaces at a cost to employers <p>In 2015/16 6,026 children received cycle training.</p>	Ongoing	

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
23	Marketing of walking and cycling	Promoting travel alternatives Public information	Promotion of cycling / promotion of walking Via leaflets /via other mechanisms /via radio /via television /via the internet / other	Nottinghamshire County Council		Ongoing	Increases in cycle trips / Increased footfall in town centre / Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> Marketing of walking and cycling is undertaken in a variety of formats. Various campaigns have been undertaken The Big Wheel marketing organisation was established to deliver year round marketing campaigns in the Greater Nottingham area The County Council also undertakes its own marketing, such as developing and distributing a walking map for West Bridgford employees/ households (the map was launched to coincide with 2007 Walk Week and remain available on-line to download.). Various campaigns undertaken including marketing of bike week, walk week, walk to school week. Nottinghamshire County Council, in partnership with Nottingham City Council, held a Greater Nottingham cycle forum during Bike Week and Cycle Live (including mass participation cycle rides and activities such as the Great Notts Bike Ride) was held in June to promote cycling Involvement in Walk Week during May includes guided walks, a chance to try out activities. Media campaigns were held internally with members of staff and externally to promote walk week. Activities included organised lunchtime walks. National walk to school week was also promoted by the County Council in schools across the county. It is hoped that the events in Walk Week will encourage people to continue walking and lead healthier lifestyles. All of the work undertaken by the officers undertaking travel planning duties (e.g., publicity campaigns, personalised travel planning etc.) aim to deliver increases in the walking and cycling mode share Smarter choices marketing campaigns have been undertaken during 2015/16 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 their respective season 	Ongoing	
	AQM Annual Status Report 2016								<p>Cycling in Rushcliffe district there has increased by 14% between 2010 and 2014 (latest available data). It is not possible to analyse these figures at a more local level.</p> <p>Footfall in West Bridgford town centre (Mon-Fri)</p>		18

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
34	Web based journey planners	Promoting travel alternatives / Public information	Promotion of cycling / promotion of walking/ promotion of bus and rail services Via leaflets /via other mechanisms /via radio /via television /via the internet / other	Nottinghamshire County Council		Ongoing	Increases in cycle trips / Increases in passenger transport trips / Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> • Web based journey planners are used to help people plan and make walking, cycling and passenger transport journeys • Nottinghamshire is 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 • Further enhancements to web based journey planners in the county will be developed as part of the emerging Integrated Passenger Transport Strategy which was approved in 2015. 	Ongoing	
25	Cycle hire scheme	Transport planning and infrastructure	Public cycle hire scheme	Nottinghamshire County Council Nottm City Council	2015/16	Dependent on 2016/17 STTY funding bid	Increases in cycle trips / Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> • Nottingham City Council implemented a cycle hire scheme within the City as part of its successful LSTF bid. The intention was to extend the scheme into the county but funding did not permit this and the scheme has subsequently been reduced following the cessation of the LSTF in March 2016 • An unsuccessful Sustainable Transport Transition Year 2016/17 funding bid was submitted to DfT by the D2N2 highway authorities, which included funding for the expansion of the City cycle hire scheme into areas of the county, including West Bridgford. 	Dependent on funding becoming available	

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
26	20mph speed limits	Traffic management	Reduction of speed limits, 20mph zones	Nottinghamshire County Council		2013-2016 2015/16	Increases in cycle trips / Increased footfall in town centre / Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> Advisory 20mph speed limits have been introduced outside all schools in the county where feasible to improve safety around schools and to encourage more pupils to walk and cycle to school Mandatory area wide 20mph speed limits have been implemented during 2015/16 in two locations in West Bridgford to determine if they encourage more people in those areas to walk and/or cycle. 	Complete 2015/16 2016/17	
27	City centre to Trent Bridge primary pedestrian route	Traffic management	Strategic highway improvements, re-prioritising road space away from cars, including access management, selective vehicle priority, bus priority, high vehicle occupancy lane	Nottm City Council	2015	Will not proceed	Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> A Maintenance Challenge Fund bid, rejected by DfT, was submitted by Nottingham City Council which included upgrading the main walking route from Nottingham City to Trent Bridge (where two sporting facilities are located). 	Will not proceed	

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
28	Bus infrastructure	Transport planning and infrastructure	Public transport improvements - interchanges stations and services	Nottinghamshire County Council		Ongoing	Increased public transport patronage / Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> Timetable cases carrying commercial bus operator and NCC supported service timetables are provided at all stops in the AQMA. An annual programme of updates and maintenance of all stops in the AQMA including updating network maps to ensure all information is current and accurate is ongoing At-stop timetable cases are used to promote public transport journey planners, traveline, apps and other sources of information. NCC also displays area network maps showing bus and tram routes in bus shelter information display cases wherever these exist. The County Council's website provides information on local bus networks and links to operators' websites, the traveline journey planner and bus timetables Updates and maintenance of all stops in the AQMA is ongoing. Network maps are also reviewed and updated as necessary to ensure all information is current and accurate. All data from timetable changes is also updated to ensure that traveline journey planner and website information is current and accurate. Bus stops along each of the corridors in the AQMA have been upgraded to feature real time information Automatic vehicle detection, bus lanes etc. is provided at a number of key signal junctions in the AQMA to make bus travel more reliable and attractive to the public The Bridgford Road bus lane is to be amended and monitored for 12 months with a view to introducing bus lane enforcement cameras to improve the efficiency of the junction for car drivers and to encourage less contraventions of the bus lane. <p>Rushcliffe now has 89 real time displays at bus stops, of which 37 were installed during 2015/16.</p> <p>Public transport patronage in the county has increased by 4% between 2005/06 and 2014/15.</p>	<p>Ongoing</p> <p>Complete</p> <p>Ongoing</p> <p>Complete</p> <p>Complete</p> <p>Potentially 2017/18 but dependent on outcome of monitoring</p>	

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
29	Light rail tram infrastructure	Transport planning and infrastructure	Public transport improvements - interchanges stations and services	Nottm City Council		2013-2016	Increased public transport patronage / Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> Construction of NET Phase 2 is being delivered by Nottingham City Council. NET Phase 2 extends the tram system to incorporate two new lines to the south and west of Nottingham city centre totalling 17km in length, commenced in early 2013; and opened in 2015. The line to the south of the City travels through part of West Bridgford and could potentially reduce vehicle journeys through the AQMA. 	Essentially complete 2015	
30	Marketing and promotion of passenger transport	Promoting travel alternatives Public information	Promotion of cycling / promotion of walking Via leaflets /via other mechanisms /via radio /via television /via the internet / other	Operators Nottinghamshire County Council		Ongoing	Increased public transport patronage / Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> Various marketing campaigns undertaken in partnership with operators and Nottingham City Council, co-ordinated through the Greater Nottingham Bus Quality Partnership 100 years of no.6 route (ongoing); promotion of the 'Rushcliffe Greens' services (March – June 2015) Marketing of new Robin Hood smartcard integrated ticketing scheme to replace Kangaroo ticket. 	Ongoing	

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
31	Integrated ticketing	Transport planning and infrastructure	Public transport improvements - interchanges stations and services	Nottinghamshire County Council Operators		Ongoing	Increased public transport patronage / Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> An integrated ticketing strategy for the county was developed during 2014/15 and will inform the future development of ITSO smartcard ticketing options as well as the use of contactless ticketing etc. A new smartcard platform was introduced in April 2014 allowing passengers to have a more robust ticket than the paper alternative. In 2013/14 over 600,000 day tickets were sold and over 10,000 smartcards were issued. MANGO smartcards were also expanded in April 2014 to include use on NET tram network The long-running kangaroo integrated ticket scheme was replaced by the Robin Hood card scheme in 2015. The Robin Hood card scheme offers customers an all-operator ticket through the AQMA corridors 	Ongoing	

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
32	Concessionary fare schemes	Transport planning and infrastructure	Public transport improvements - interchanges stations and services	Nottinghamshire County Council		Ongoing	Increased public transport patronage / Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> A countywide off-peak concessionary fare scheme for elderly and disabled residents has been in place since 1985. This has undergone significant changes in subsequent years and is now part of the English National Concessionary Travel Scheme. Nottinghamshire offers additional discretionary travel entitlements for pass holders which allows travel on the Nottingham tram network. 2014 saw the enhancement of travel entitlement of tram travel with the removal of the evening peak restriction and the extension of the scheme to cover new NET lines. A further facility is offered which allows a companion to travel without charge for residents with severe mobility issues. Concessionary fares for young people continue through the under 16 Travel Assistance scheme for school pupils which offers free bus passes to eligible children, and season passes to those who are not eligible. Nottinghamshire County Council refers pupils to all available bus operators for their route to promote the use of public transport. A continued Post 16 Travel Assistance scheme for further education pupils which offers either a half-fare pass or season pass. <p>23,259 elderly/disabled people living in the Rushcliffe area have a concessionary travel pass.</p> <p>There are approximately 8,000 valid home to school transport passes currently in circulation in the county. In 2015 2,212 free under-16 home to school transport passes were issued in Nottinghamshire; 415 under-16 home to school season passes were issued in Nottinghamshire; 132 pupils received an under-16 waived season pass in Nottinghamshire; and 461 post-16 travel passes were issued in Nottinghamshire.</p>	Ongoing	

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
33	Bus service improvements	Transport planning and infrastructure	Public transport improvements - interchanges stations and services	Nottinghamshire County Council Operators		Ongoing	Increased public transport patronage / Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> NCC periodically undertakes a review of all of the bus services in the county, including commercial, supported and specialist services. The aim of this work is to review and design cost effective services that meet local needs Increased capacity at peak times and introducing feeder services to high quality bus routes serving key towns in Nottinghamshire are considered when identified through the periodic service reviews and through the ongoing Bus Quality Partnership work with operators Capacity increases will be considered should passenger information demonstrate that there is insufficient capacity on existing services. 'Double decker' bus services already operate along some of the routes travelling through and within the AQMA where capacity had been highlighted as an issue In August 2014 the Council introduced new commuter services from villages in the south of Rushcliffe linking in to high frequency urban services providing car free journeys to access work, health and leisure services The SkyLink direct 24 hour bus service to the airport began operating via Trent Bridge through the AQMA in May 2004. In 2011 the franchise for the Skylink service was re-tendered and the new operator revised the route which no longer operated through the AQMA. The operator, however, reintroduced the service through the AQMA in 2016. 	Ongoing	

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
34	Nottingham to Lincoln rail line service improvements.	Transport planning and infrastructure	Public transport improvements - interchanges - stations and services	Nottinghamshire County Council		Ongoing	Increased public transport patronage / Restrain average journey times in the morning peak to a 1% increase per year		<ul style="list-style-type: none"> Funding has been secured by the County Council from Central Government and other partners for 3 years (up to 2017/18) to increase the frequency of the service throughout the day and to enable a faster peak time service. Residents of many of the outlying villages/settlements that lie along the Nottingham-Lincoln rail line could use the rail service instead of driving if the service is quicker and more frequent The required subsidy to continue the service will be sought as part of the East Midlands rail franchise renewal. 	Ongoing 2018/19	

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
35	Encouragement of low-emission public transport fleets	Vehicle fleet efficiency	Promoting low emission public transport	Operators		Ongoing			<ul style="list-style-type: none"> 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 was 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 transport development group which is held every two months; and the Greater Nottingham Bus Quality Partnership which meets quarterly. The groups help determine future service and public transport scheme improvements Vehicle emissions standards included in procurement of contracted services operating within AQMAs The Statutory Quality Partnership Scheme (SQPS) – the vast majority of buses travelling through the AQMA go into the SQPS area – ensures that services operating into the city centre (including those travelling through the AQMA) meet a minimum standard for emissions with many vehicles operating at higher standards. Monitoring of operator standards and operation of the SQPS is ongoing A Green Bus Fund bid, made to fit equipment on services running through AQMA to reduce emissions, was rejected by DfT An OLEV bid has been submitted to implement a bus low emission corridor which includes NCT buses travelling through the AQMA, and part of the bid includes higher Euro standards (VI) vehicles. NCC plan to continually improve the emission standards of their fleet vehicles. The majority of the Council's bus fleet is now Euro V standard NCC has submitted an OLEV bid to accelerate bringing in low emission vehicles. 	Ongoing	
				Nottinghamshire County Council		Ongoing				Ongoing	
				Nottm City Council		Ongoing				Ongoing	
				Nottm City Transport		Will not proceed				Will not proceed	
						Dependent on outcome of OLEV bid				Dependent on outcome of OLEV bid	
				Nottinghamshire County Council		Dependent on outcome of OLEV bid				Dependent on outcome of OLEV bid	

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
36	Eco-Stars programme	Vehicle fleet efficiency	Fleet efficiency and recognition schemes	Nottinghamshire County Council		2013-2015	Reduced emissions		<ul style="list-style-type: none"> Eco-Stars was introduced in the Greater Nottingham area in March 2013 as part of the LSTF programme – SAFED driver training is included as part of the scheme. A total of 51 members have joined the scheme. Funding expired in March 2015 (when LSTF funding expired). 	2015	
37	Nottingham Go-Ultra Low City bid	Promoting low emission transport	Company vehicle Procurement - prioritising uptake of low emission vehicles/ priority parking for LEVs/ procuring alternative refuelling infrastructure to promote LEV recharging/ public vehicle procurement - prioritising uptake of low emission vehicles	Nottingham City Council Nottinghamshire County Council	2015-2016	2016-2021	Ongoing take-up of cleaner vehicles		<ul style="list-style-type: none"> Nottinghamshire County Council, in partnership with Nottingham City and Derby City Councils has been successful in securing £6.1m OLEV funding for the period April 2016 - March 2021 to accelerate the take-up of electric vehicles. The bid will include <ul style="list-style-type: none"> Grants, loans and advice to support businesses to introduce low-emission vehicles and electric charging at workplaces Expansion of the Council's electric vehicle fleet (e.g. pool cars and vans and associated charging facilities at County Council sites) Expansion of the public electric vehicle charging infrastructure to create an area-wide network of charging infrastructure Expansion of the existing car club into the county A programme of targeted promotional events in areas where data highlights the residents and/or businesses are more likely to transfer to ULEVs. 	2021	
38	Nottingham Low Emission Zone	Promoting low emission transport	Low emission zone (LEZ)	Nottingham City Council	2016-2018	2018	Reduced emissions		<ul style="list-style-type: none"> As directed by DEFRA Nottingham City Council are currently investigating the introduction of a Clean Air Zone (CAZ) within the Nottingham conurbation to help meet its 2020 air quality targets. The scheme would initially be applicable to buses and taxis. Consultation on the Rushcliffe Borough Council Taxi Licensing Policy to introduce a minimum taxi vehicle standard to assist with the CAZ implementation. 	2025	

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
39	Development of a supplementary planning document	Policy guidance and development control	Air quality planning and policy guidance	Rushcliffe Borough Council		Sept 2016	Progress meetings with EMAQN		Public Health England have set up the East Midlands Air Quality Network, with the aim of producing a regional planning guide for developers in relation to Air Quality. They are also assisting with the production of a Nottinghamshire Air Quality Strategy and associated communications.		
40	A6514 Ring Road improvements	Traffic management	Strategic highway improvements, re-prioritising road space away from cars, including access management, selective vehicle priority, bus priority, high vehicle occupancy lane	Nottm City Council		2013-2016	Average journey times in the morning peak		<ul style="list-style-type: none"> Works commenced in summer 2013 on a £16.2m package of measures aimed at directly addressing the key problems affecting the ring road. These are based upon making the best use of the existing road network Works to improve access for pedestrians, cyclists and to improve traffic flows were undertaken at Crown Island, Hucknall Rd roundabout, Aspley Lane, Nuthall Rd, Wilkinson St, Western Blvd, and Middleton Blvd. 	Complete 2016	
41	A453 improvements	Traffic management	Strategic highway improvements, re-prioritising road space away from cars, including access management, selective vehicle priority, bus priority, high vehicle occupancy lane	Highways England		2013-2015	Average journey times in the morning peak		<ul style="list-style-type: none"> The £149.7m scheme aims to improve the A453 trunk road between the M1 J24 and the A52 Nottingham, to ease existing highway congestion and improve road safety. The project started in Jan' 2013 and was completed in July 2015. 	Complete July 2015	

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
42	New Trent crossing	Traffic management	Strategic highway improvements, re-prioritising road space away from cars, including access management, selective vehicle priority, bus priority, high vehicle occupancy lane	Nottinghamshire County Council	Subject to feasibility	Subject to feasibility			<ul style="list-style-type: none"> The AQMA is on the approach to two of the three road bridges crossing the River Trent within the Nottingham built-up area LTP area. A fourth road bridge crossing is not currently planned and there is no safeguarded highways route for the provision of a new bridge Previous studies into the provision of a crossing determined that a bridge would not be feasible 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 is not, however, currently programmed by Highways England Gedling Borough Council employed consultants to undertake a very basic Fourth Trent Crossing feasibility study. The study was, however, insufficient to determine whether such a crossing is feasible and did not involve the necessary highway authorities A further feasibility study is therefore currently being produced, jointly funded by Nottinghamshire County, Nottingham City, Gedling Borough and Rushcliffe Borough Councils A new bridge does not, however, have any committed funding and if a new bridge is feasible, securing sufficient funds to meet its predicted very high cost is likely to impede its construction in the foreseeable future. 	Decision on whether a scheme will be progressed will be made following completion of outstanding feasibility study	

2.3 PM_{2.5} – Local Authority Approach to Reducing Emissions and or Concentrations

As detailed in Policy Guidance LAQM.PG16 (Chapter 7), local authorities are expected to work towards reducing emissions and/or concentrations of PM_{2.5} (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that PM_{2.5} has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

Rushcliffe Borough Council is taking the following measures to address PM_{2.5}:

Currently Rushcliffe borough council are working with the LTP and other stake holders to reduce transport impacts as a whole. This has a benefit not only for NO₂ but for all emissions from transport sources and CO₂. As such the current measures will lead to a reduction in PM_{2.5}.

3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

This section sets out what monitoring has taken place and how it compares with objectives.

Rushcliffe Borough Council undertook automatic (continuous) monitoring at 2 sites during 2015. Table A.1 in Appendix A shows the details of the sites. National monitoring results are available <https://uk-air.defra.gov.uk/>

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C

3.1.2 Non-Automatic Monitoring Sites

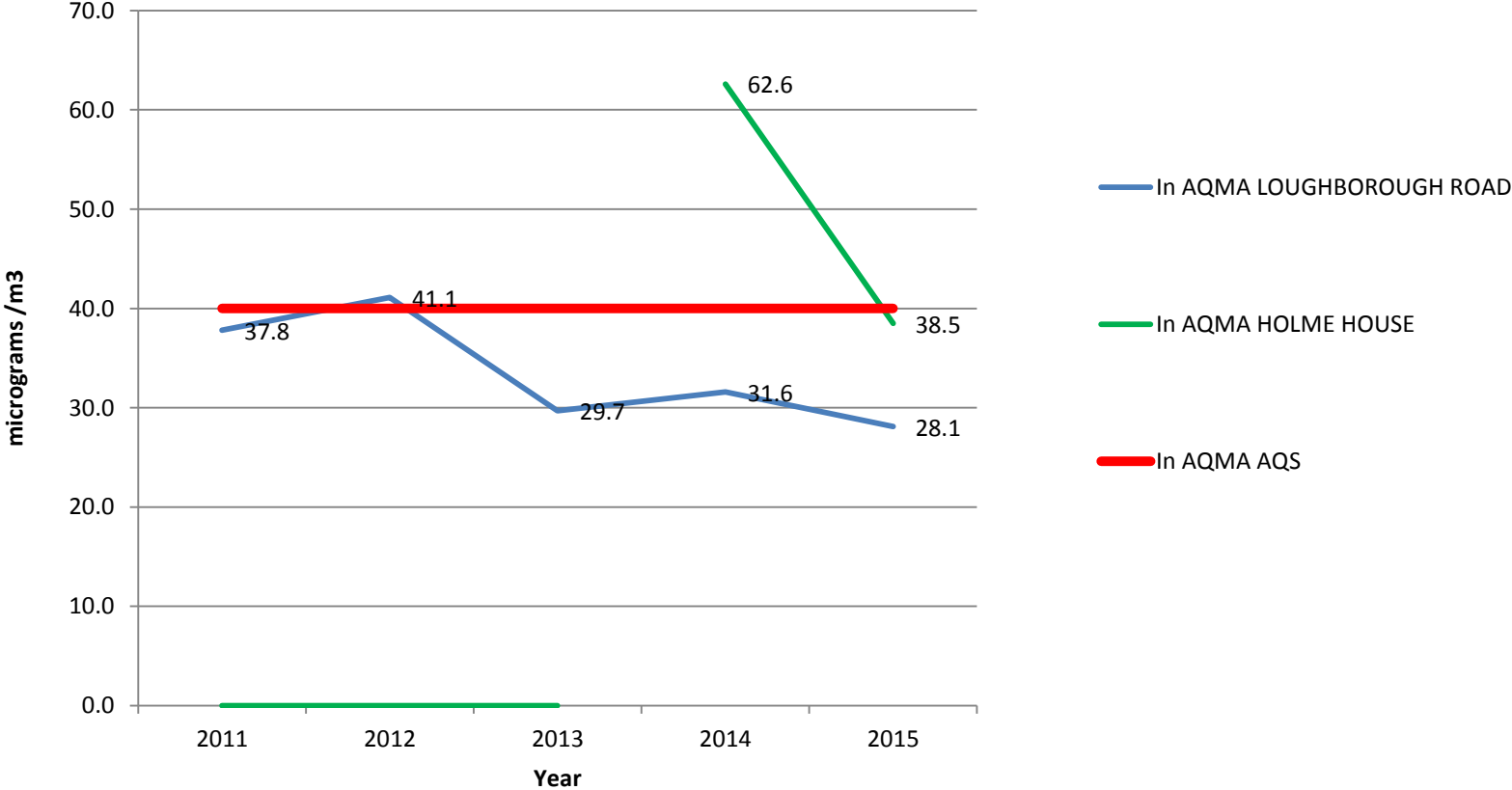
Rushcliffe Borough Council undertook non- automatic (passive) monitoring of NO₂ at 25 sites during 2015. Table A.2 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in Appendix C.

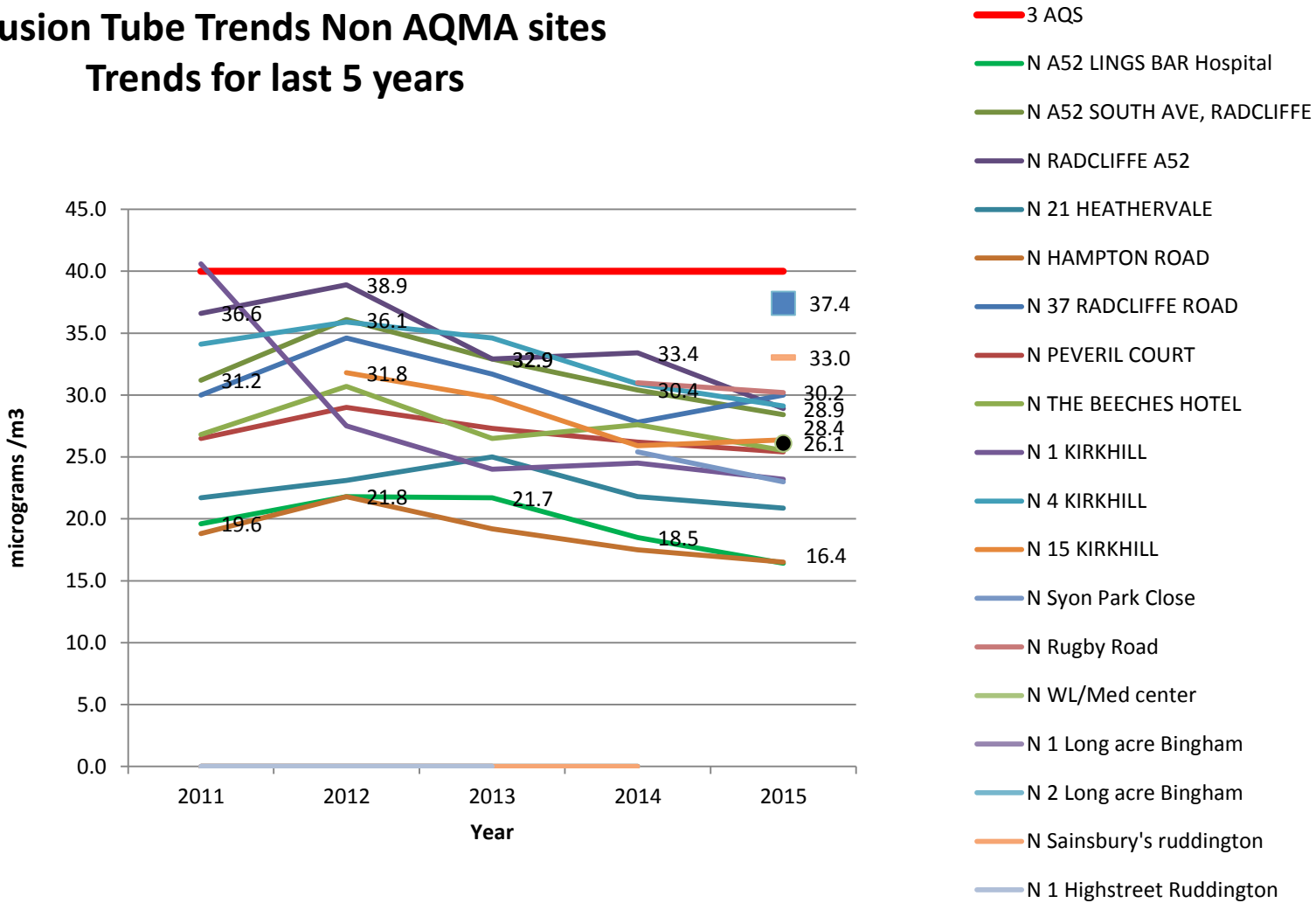
3.2 Individual Pollutants

The air quality monitoring results presented in this section is, where relevant, have been adjusted for “annualisation” and bias. Further details on adjustments are provided in Appendix C.

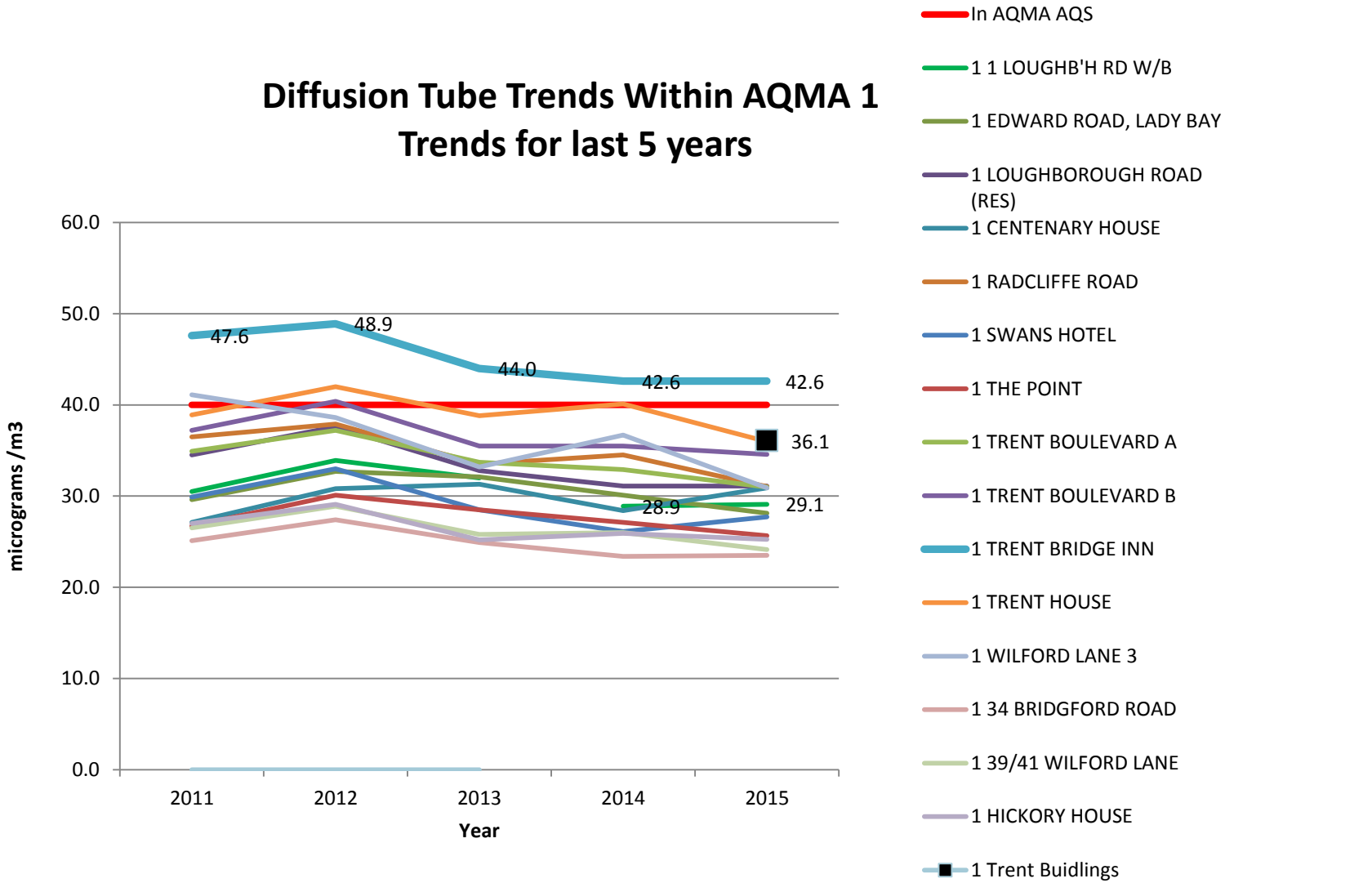
Automatic monitors Trends for last 5 years



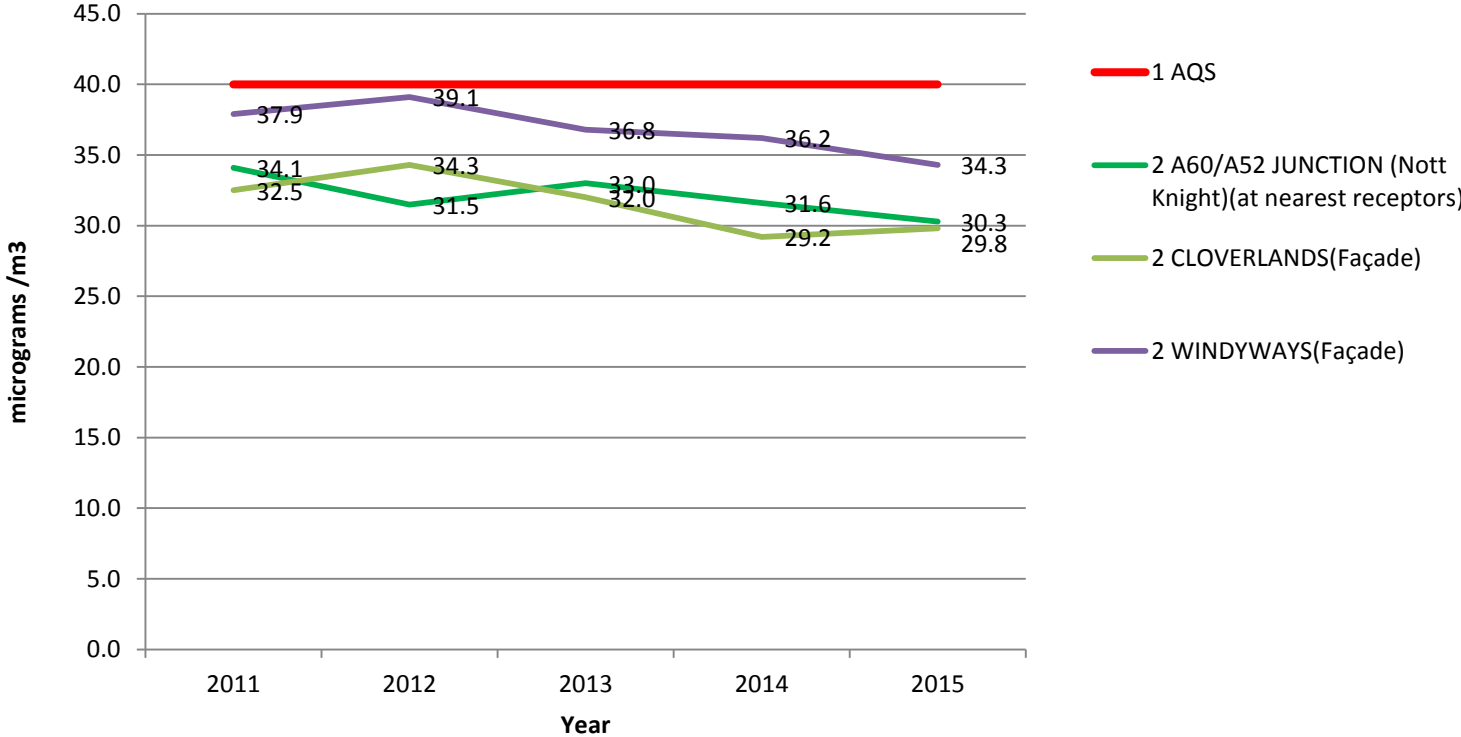
Diffusion Tube Trends Non AQMA sites Trends for last 5 years



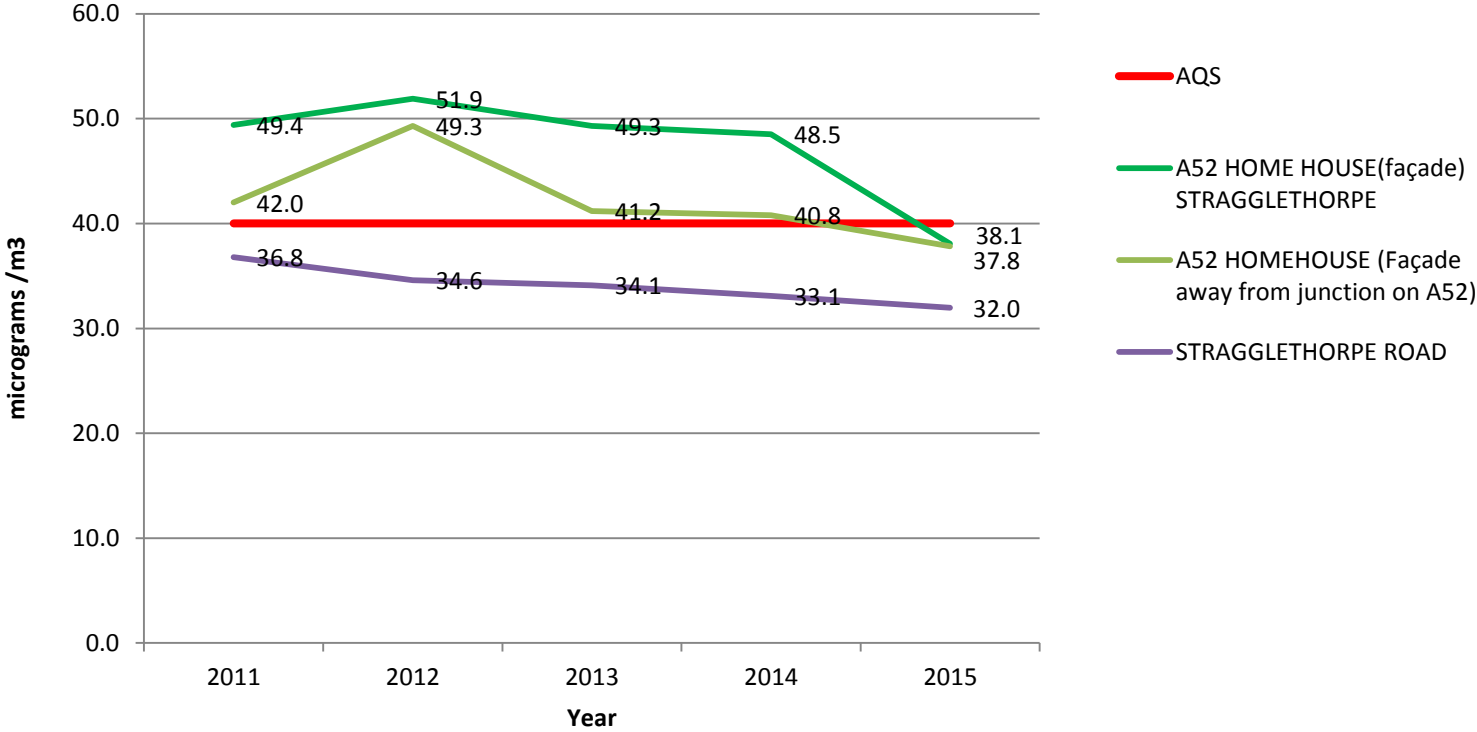
Diffusion Tube Trends Within AQMA 1 Trends for last 5 years



Diffusion Tube Trends Within AQMA 2 Trends for last 5 years



Diffusion Tube Trends Within AQMA 1/2011 Trends for last 5 years



The trends charts above indicate that pollution levels at the monitoring sites have continued in a downward direction. The Nottingham Knight site (AQMA2) has now been fully compliant for the last five years and on the basis of this reporting period there is a significant head room to the AQS. Modelling was undertaken when the site was declared with levels well above the AQS. Given the consistent and falling level at these sites in the AQMA it is not considered necessary to undertake further modelling. The sampling at the closet site (Windy ways) is a duplicate tube site and is now $34.3 \mu\text{g}/\text{m}^3$. **As such this service intends to revoke the AQMA2 upon acceptance of this report.** We have been in contact with Highways England with regards to the junction use and are aware of potential changes to the site. If changes are proposed we will work with the HE to ensure air quality is fully considered in any plans. This service will ensure that development likely to significantly affect the assessment of the nearest site, will not lead to an unacceptable risk of future exceedance.

There is no indication of sites outside of the current AQMA's likely to be a concern at this time.

Sites in the AQMA are showing a downward trend with all sites being compliant with the AQS. The TBI is measured against the $60\mu\text{g}/\text{m}^3$ limit. Levels in the AQMA have varied though and monitoring is to continue.

3.2.1 Nitrogen Dioxide (NO₂)

Table A.3 in Appendix A compares the ratified and adjusted monitored NO₂ annual mean concentrations for the past 5 years with the air quality objective of $40\mu\text{g}/\text{m}^3$.

For diffusion tubes, the full 2015 dataset of monthly mean values is provided in Appendix B.

Table A.4 in Appendix A compares the ratified continuous monitored NO₂ hourly mean concentrations for the past 5 years with the air quality objective of $200\mu\text{g}/\text{m}^3$, not to be exceeded more than 18 times per year.

There have been no exceedances of the $200\mu\text{g}/\text{m}^3$ at any site in the borough

All other sites in this reporting period when bias adjusted, corrected for distance to receptor and annualised (where appropriate) are shown to be below the AQS for the

relevant receptor. It should be noted that the TBI is compared to the $60\mu\text{g}/\text{m}^3$ as this is not a residential premises.

Additional monitoring has taken place at new sites this reporting period also, due to potential developments taken place in Bingham and Ruddington. These new sites are outside of AQMA's and appear below the AQS's.

3.2.2 Particulate Matter (PM₁₀)

There has been no PM10 monitoring in 2015

3.2.3 Particulate Matter (PM_{2.5})

There has been no PM2.5 monitoring in 2015

3.2.4 Sulphur Dioxide (SO₂)

There has been no SO2 monitoring in 2015

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Inlet Height (m)
Loughborough Road	Loughborough Road/Millicent Road, West Bridgford AQMA1	Roadside	458174	337772	NO2	Y(AQMA1)	Chemiluminescent	Y (0m)	5m	1.8
Holme House	Holme House, A52 Stragglethorpe Junction, Radcliffe on Trent	Road Side/facade	463005	338208	NO2	Y (AQMA4)	Chemiluminescent	Y (0m)	7.5m	1.5

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

(2) N/A if not applicable.

Table A.2 – Details of Non-Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
NA1	1 LOUGHB'H RD W/B	Façade	458174	337772	NO ₂	1	0	5	Y	2.2
NA2	1 LOUGHB'H RD W/B	Façade	458174	337772	NO ₂	1	0	5	Y	2.2
NA3	1 LOUGHB'H RD W/B	Façade	458174	337772	NO ₂	1	0	5	Y	2.2
HV	22 HEATHERVALE	Façade	456893	336768	NO ₂	no	0	16	N	2.1
BR	34 BRIDGFORD ROAD	Façade	458501	337854	NO ₂	no	0	10	N	2.2
WLR/2	39/41 WILFORD LANE	Façade	457873	337426	NO ₂	no	0	9	N	2.2

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GLB HOS	A52 LINGS BAR Hospital	Façade	460663	336514	NO ₂	no	0	26	N	2.3
A52/S A	A52 SOUTH AVE, RADCLIFFE	RS	465929	339543	NO ₂	no	0	4.2	N	2.9
NK	A60/A52 JUNCTION (Nott Knight)	RS	457612	334813	NO ₂	Y2	15	1.8	N	2.1
CL	CLOVERLA NDS	Façade	457223	335033	NO ₂	Y2	0	16.3	N	2.5
HR	HAMPTON ROAD	UB	458326	336714	NO ₂	no	0	5.4	N	2.1
HH	HICKORY HOUSE	Façade	458049	337340	NO ₂	no	0	10.5	N	2
ER	EDWARD ROAD, LADY BAY	Façade	458716	338238	NO ₂	Y1	0	10.5	N	2.8
LR	LOUGHBOR OUGH ROAD (RES)	Façade	458126	337727	NO ₂	Y1	0	8.9	N	1.9
37RR	RADCLIFFE ROAD	Façade	458457	338215	NO ₂	no	-3.3	13.8	N	4

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PM10 (centenary house)	centenary house former pm10 site	Façade	458090	337527	NO ₂	Y1	2.5	7.3	N	1.6
PC	PEVERIL COURT	Façade	458399	337172	NO ₂	no	0	8	N	2
A52/R T	RADCLIFFE A52	RS	464644	338730	NO ₂	no	5.2	3.3	N	2
RR	RADCLIFFE ROAD	Façade	458284	338150	NO ₂	Y1	0	4	N	2.3
SH	SWANS HOTEL.	Façade	458919	338120	NO ₂	Y1	0	10	N	2.1
BH	THE BEECHES HOTEL	Façade	457701	337342	NO ₂	no	0	9.7	N	2.1
POINT	THE POINT	Façade	458114	337518	NO ₂	Y1	0	7.4	N	2.1
TBLA	TRENT BOULEVAR D A	Façade	458752	338278	NO ₂	Y1	0	7.1	N	2
TBLB	TRENT BOULEVAR D B	Façade	458756	338267	NO ₂	Y1	0	3.4	N	2.4
TBI	TRENT BRIDGE INN	Façade	458274	338117	NO ₂	Y1	0	6.6m RR (8m LR)	N	2.6
THF	TRENT HOUSE	Façade	458227	338197	NO ₂	Y1	0	3.2	N	5
THF2	TRENT HOUSE	Façade	458227	338197	NO ₂	Y1	0	3.2	N	5

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THF3	TRENT HOUSE	Façade	458227	338197	NO ₂		0	4.2	N	5
WL3	WILFORD LANE 3	RS	458134	337581	NO ₂	Y1	5.2	2.1	N	2.9
WW	WINDYWAY S	Façade	457651	334840	NO ₂	Y2	0	12	N	1.8
WW2	WINDYWAY S	Façade	457651	334840	NO ₂		0	12	N	1.8
A52/H HF1	A52 HOME HOUSE(façade) STRAGGLE THORPE	Façade	463011	338213	NO ₂	Y4	0	6	Y	2.5
A52/H HF2	A52 HOME HOUSE(façade) STRAGGLE THORPE	Façade	463011	338213	NO ₂	Y4	0	6	Y	2.5
A52/H HF3	A52 HOME HOUSE(façade) STRAGGLE THORPE	Façade	463011	338213	NO ₂	Y4	0	6	Y	2.5
SR	STRAGGLE THORPE ROAD	Façade	463005	338204	NO ₂	Y4	0	5.5m(A52 12.3m)	N	2.2
A52/H HF4	A52 HOME HOUSE(façade) STRAGGLE THORPE	Façade	463040	338232	NO ₂	Y4	0	6.4	N	2.4

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1KH	1 KIRKHILL BINGHAM	Façade	470205	340020	NO ₂	No	0	1.37	N	2.4
4KH	4 KIRKHILL BINGHAM	RS	470220	340051	NO ₂	No	0	2	N	2.4
15KH G	15 Kirkhill Gardens	RS	470202	340092	NO ₂	No	0	2	N	2.4
SPC	Syon Park Close	RS	458132	336462	NO ₂	No	6.5	2.5	N	2.4
RuRo	Rugby Road	RS	457507	336343	NO ₂	No	-0.5	3.5	N	2.4
WL/Me dC	Wilford Lane Medical Centre	RS	457541	337241	NO ₂	No	6.7	2.1	N	2.2
Trent B	Trent buildings	Façade	458249	338167	NO ₂	Y1	0	3.6	N	2.5
1 LA	1 long acre, Bingham	RS	470234	339846	NO ₂	no	4	2.5	N	2.6
2 LA	2A Long Acre, Bingham	Façade	470248	339834	NO ₂	no	0	1.2	N	2.6
Sains	sainsburys Wilford Road, Rudd	Façade	457303	333214	NO ₂	no	0	2.2	N	2.6
1 HS	1 High Street, Rudd	Façade	457323	333124	NO ₂	no	0	2.8	N	2.6

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on/adjacent to the façade of a residential property).

(2) N/A if not applicable.

Table A.3 – Annual Mean NO₂ Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2011	2012	2013	2014	2015
LOUGHBOROUGH ROAD	Roadside	Automatic	86%	26/1/2015-31/12/2015 83%	37.8	41.1	29.7	31.6	28.1
HOLME HOUSE	Façade/Road side	Automatic	96%	4/2/2015-31/12/2015 87%	n/a	N/a	n/a	62.6 c	38.5
1 LOUGHB'H RD W/B	Façade	diffusion tube	100%	100%	30.5	33.9	32	28.9	29.10
EDWARD ROAD, LADY BAY	RS	diffusion tube	100%	100%	29.6	32.7	32.1	30.1	28.12
LOUGHBOROUGH ROAD (RES)	Façade	diffusion tube	75%	75%	34.5	37.6	32.8	31.1	31.11
CENTENARY HOUSE	Façade	diffusion tube	25%	25%	27.1	30.8	31.3	28.4	30.90
RADCLIFFE ROAD	Façade	diffusion tube	100%	100%	36.5	37.9	33.5	34.5	31.03
SWANS HOTEL	Façade	diffusion tube	100%	100%	29.9	33	28.5	26.1	27.72

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THE POINT	Façade	diffusion tube	100%	100%	26.7	30.1	28.5	27.1	25.66
TRENT BOULEVARD A	Façade	diffusion tube	100%	100%	34.9	37.2	33.7	32.9	30.98
TRENT BOULEVARD B	Façade	diffusion tube	100%	100%	37.2	40.4	35.5	35.5	34.58
TRENT BRIDGE INN	Façade	diffusion tube	100%	100%	47.6	48.9	44	42.6	42.60
TRENT HOUSE	Façade	diffusion tube	100%	100%	38.9	42	38.8	40.1	35.98
WILFORD LANE 3	RS	diffusion tube	100%	100%	41.1	38.6	33.2	36.7	30.90
A60/A52 JUNCTION (Nott Knight)	RS	diffusion tube	92%	92%	49.7	44.3	47.4(33.0 at receptor)	44.5	30.30 (at receptor)
CLOVERLANDS(Façade)	Façade	diffusion tube	100%	100%	32.5	34.3	32	29.2	29.81
WINDYWAYS	Façade	diffusion tube	100%	100%	37.9	39.1	36.8	36.2	34.31
A52 LINGS BAR Hospital	Façade	diffusion tube	92%	92%	19.6	21.8	21.7	18.5	16.41
A52 SOUTH AVE, RADCLIFFE	RS	diffusion tube	100%	100%	31.2	36.1	32.9	30.4	28.42
RADCLIFFE A52	RS	diffusion tube	100%	100%	36.6	38.9	32.9	33.4	28.90

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A52 HOME HOUSE(façade) STRAGGLETHORPE	Façade	diffusion tube	100%	100%	49.4	51.9	49.3	48.5	38.07
A52 HOMEHOUSE (Façade away from junction on A52)	Façade	diffusion tube	100%	100%	42	49.3	41.2	40.8	37.83
STRAGGLETHORPE ROAD	Façade	diffusion tube	100%	100%	36.8	34.6	34.1	33.1	31.98
21 HEATHERVALE	Façade	diffusion tube	92%	92%	21.7	23.1	25	21.8	20.87
34 BRIDGFORD ROAD	Façade	diffusion tube	83%	83%	25.1	27.4	24.9	23.4	23.50
39/41 WILFORD LANE	Façade	diffusion tube	92%	92%	26.5	28.9	25.8	26	24.14
HAMPTON ROAD	UB	diffusion tube	92%	92%	18.8	21.8	19.2	17.5	16.51
HICKORY HOUSE	Façade	diffusion tube	100%	100%	27	29.1	25.2	25.9	25.24
37 RADCLIFFE ROAD	Façade	diffusion tube	75%	75%	30	34.6	31.7	27.8	30.00
PEVERIL COURT	Façade	diffusion tube	100%	100%	26.5	29	27.3	26.2	25.41
THE BEECHES HOTEL	Façade	diffusion tube	92%	92%	26.8	30.7	26.5	27.6	25.51
1 KIRKHILL	Façade	diffusion tube	92%	92%	40.6	27.5	24	24.5	23.20

4 KIRKHILL	RS	diffusion tube	100%	100%	34.1	35.9	34.6	30.9	29.12
15 KIRKHILL	RS	diffusion tube	100%	100%	n/a	31.8	29.8	25.9	26.37
Syon Park Close	RS	diffusion tube	100%	100%	n/a	n/a	n/a	25.4	23.00
Rugby Road	RS	diffusion tube	100%	100%	n/a	n/a	n/a	31	30.20
WL/Med center	RS	diffusion tube	83%	83%	n/a	n/a	n/a	n/a	26.10
Trent Buidlings	RS	diffusion tube	100%	100%	n/a	n/a	n/a	n/a	36.07
1 Long acre Bingham	RS	diffusion tube	100%	25%	n/a	n/a	n/a	n/a	26.10
2 Long acre Bingham	RS	diffusion tube	100%	25%	n/a	n/a	n/a	n/a	37.41
Sainsbury's ruddington	RS	diffusion tube	100%	25%	n/a	n/a	n/a	n/a	33.04
1 Highstreet Ruddington	RS	diffusion tube	100%	25%	n/a	n/a	n/a	n/a	30.47

Notes: Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per Technical Guidance LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Table A.4 – 1-Hour Mean NO₂ Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	NO ₂ 1-Hour Means > 200µg/m ³ ⁽³⁾				
					2011	2012	2013	2014	2015
Loughborough Road/Millicent Road	Roadside	Automatic	83.3%	86%	0 (126.8 µg/m ³)	0 (136.3µg/m ³)	0 (102.7µg/m ³)	0 (103.6µg/m ³)	0 (110µg/m ³)
Holme House/Stragglethorpe Rad	Road Side/facade	Automatic	87.0%	96%	N/A	N/A	N/A	1 (159.5µg/m ³)	0 (117µg/m ³)

Notes: Exceedances of the NO₂ 1-hour mean objective (200µg/m³ not to be exceeded more than 18 times/year) are shown in **bold**.

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) If the period of valid data is less than 90%, the 99.8th percentile of 1-hour means is provided in brackets.

Table A.5 – Annual Mean PM₁₀ Monitoring Results

There are no PM10 monitoring results to report

Table A.6 – 24-Hour Mean PM₁₀ Monitoring Results

There are no PM10 monitoring results to report

Table A.7 – PM_{2.5} Monitoring Results

There are no pm2.5 monitoring results to report

Table A.8 – SO₂ Monitoring Results

There are no SO2 monitoring results to report

Appendix B: Full Monthly Diffusion Tube Results for 2015

Table B.1 – NO₂ Monthly Diffusion Tube Results – 2015

Site ID	NO ₂ Mean Concentrations (µg/m ³)													Annual Mean	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted ⁽¹⁾	
NA1	32.29	40.31	35.73	27.84	23.45	23.31	29.78	29.73	30.53	38.98	37.77	31.88	31.80	28.94	
NA2	40.45	38.75	38.62	29.3	24.17	23.72	30.28	30.43	30.48	38.72	34.47	32.7	32.67	29.73	
NA3	33.46	38.2	33.87	28.05	24.15	23.94	27.48	29	29.76	38.33	37.53	33.65	31.45	28.62	
HV	28.36	24.47	27.45	22.17	16.82	17.3	missing	18	24.23	30.88	23.54	19.09	22.94	20.87	
BR	33.51	32.15	28.71	23.69	18.43	20.67	21.33	missing	missing	29.07	26.32	24.33	25.82	23.50	
WLR/2	30.93	missing	27.82	27.82	21.33	21.15	23.29	22.18	27.66	34.14	28.53	26.92	26.52	24.14	
GLB HOS	missing	20.51	25.69	19.68	14.59	14.95	14.2	9.38	22.57	18.73	21.13	16.95	18.03	16.41	

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A52/SA	39.05	31.44	35.77	32.07	21.48	27.05	30.37	27.69	38.99	39.04	26.72	25.04	31.23	28.42
NK	39.11	52.09	54.06	53.68	39.23	missing	46.94	44.91	39.44	53.48	51.62	55.34	48.17	43.84
CL	33.57	40.74	38.38	31.13	27.64	24.82	29.97	28.67	29.86	35.5	39.06	33.79	32.76	29.81
HR	25.73	22.54	19.64	16.48	12.25	11.8	13.86	13.71	18.37	23.81	21.36	n/a	18.14	16.51
HH	35.28	36.93	31.56	23.59	20.05	19.55	21.58	22.88	29.12	33.07	30.63	28.57	27.73	25.24
ER	39.59	29.93	30.25	33.64	23.25	24.22	25.52	24.72	29.68	45.74	35.45	28.82	30.90	28.12
LR	37.45	39.31	missing	33.21	27.81	missing	missing	29.44	30.84	40.84	34.15	34.6	34.18	31.11
37RR	41.35	37.57	missing	29.86	24.79	missing	25	26.2	27.21	37.33	34.17	Missing	31.50	28.66
PM10 (centenary house)	38.48	29.85	33.46	missing	ended	ended	ended	ended	ended	ended	ended	ended	33.93	30.88
PC	38.32	30.83	30.76	24.94	19	20.68	23.38	25.89	31.17	35.27	28.58	26.25	27.92	25.41
A52/RT	39.51	45.13	39.12	36.9	31.53	29.31	38.23	33.41	34.43	38.92	36.63	29.97	36.09	32.84
RR	32.29	40.51	40.03	36.41	15.62	30.32	missing	33.23	38.22	45.74	35.01	27.67	34.10	31.03
SH	39.21	37.32	34.83	30.52	11.22	25.47	28.28	27.34	31.95	39.85	missing	29.13	30.47	27.72
BH	missing	33.49	27.79	24.84	21.89	23.2	26.45	25.67	30.39	35.61	32.53	26.52	28.03	25.51
POINT	36.78	32.14	30.91	25.43	21.55	21.06	26.56	23.24	29.3	36.65	27.8	26.95	28.20	25.66

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TBLA	42.48	38.03	36.57	32.22	30.04	28.94	33.58	30.77	34.02	34.59	35.62	31.64	34.04	30.98
TBLB	47.71	43.34	42.97	36.16	31.81	31.28	35.26	34.26	37.82	48.42	36.95	29.98	38.00	34.58
TBI	56.85	52.89	46.64	48.39	38.54	40.8	42.29	41.75	45.78	52.03	46.53	49.28	46.81	42.60
THF	49.98	41.25	42.42	41.93	29.34	32.68	29.94	33.98	38.59	46.18	39.07	36.91	38.52	35.06
THF2	45.59	42.41	41.55	43.84	34.31	28.33	37.4	37.56	41.84	51.96	41.22	43.75	40.81	37.14
THF3	45.88	46.83	43.23	41.51	29.74	29.2	40.12	34.08	42.02	41.86	38.49	38.26	39.27	35.73
WL3	47.89	48.75	38.79	38.62	35.79	33.49	32.08	33.09	39.73	48.03	46.24	40.72	40.27	36.64
WW	37.62	46.05	37.9	32.61	35.63	38.09	41.54	35.73	32.48	36.22	40.61	34.68	37.43	34.06
WW2	40.39	46.04	36.64	35.66	35.21	33.63	43.85	37.21	30.42	38.22	42.22	36.25	37.98	34.56
A52/HHF1	50.81	45.15	47.17	48.69	38.15	39.06	37.5	31.87	40.49	50.52	38.58	37	42.08	38.30
A52/HHF2	49.41	49.28	40.21	42.42	34.54	37.75	37.3	32.97	36.92	46.57	40.99	36.1	40.37	36.74
A52/HHF3	56.97	48.92	48.56	44.5	34.05	43.57	38.58	33.41	40.75	51.68	38.36	37.37	43.06	39.18
SR	41.69	36.51	36.39	40.46	31.65	34.32	29.97	39.32	36.18	41.04	28.23	26.01	35.15	31.98
A52/HHF4	41.44	46.11	44.32	41.92	43.83	34.24	48.9	35.69	48.62	36.71	39.63	37.39	41.57	37.83
1KH	27.12	26.5	27.45	27.24	19.88	19.89	20.25	19.32	26.21	n/a	44.55	22.05	25.50	23.20
4KH	36.09	36.91	31.45	34.42	25.39	32.21	27.17	29.06	28.47	43.47	30.3	29.07	32.00	29.12
15KHG	36.2	38.16	33.55	27.43	20.85	23.18	26.83	21.44	31.17	37.94	28.17	22.84	28.98	26.37

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SPC	41.95	32.17	35.29	26.11	21.73	19.21	21.13	19.88	27.41	36.89	30.62	25.29	28.14	25.61
RuRo	45.36	38.26	35.15	34.06	28.72	28.43	30.27	25.42	36.01	43.35	30.89	28.94	33.74	30.70
WL/MedC	missing	36.78	33.7	29.86	27.15	missing	34.05	30.23	36.76	46.12	32.32	29.08	33.61	30.58
Trent B	n/a	n/a	n/a	n/a	n/a	n/a	36.45	36.76	45.92	48.93	36.89	32.9	39.64	36.07
1 LA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	37.29	31.96	25.76	31.67	28.82
2 LA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	44.95	40.39	37.98	41.11	37.41
Sains	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	47.43	31.87	29.61	36.30	33.04
1 HS	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	39.13	31.32	30	33.48	30.47

(1) See Appendix C for details on bias adjustment

Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC

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 personnel will undertake appropriate supervised training in line with the service's competency scheme prior to any unsupervised monitoring, calibration or data management. Currently two personnel are trained and competent to undertake such work this includes, Martin Hickey EHO and John Pembrington Technical Officer.

Nitrogen Dioxide Diffusion Tube Monitoring

Rushcliffe BC use Gradko diffusion tubes prepared using 20%Triethanolamine (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 changeover 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 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 spread sheet 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 airtight 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 local authorities in the Nottinghamshire Pollution Working Group.

Nitrogen dioxide absorbed as nitrite by triethanolamine (TEA) 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 results of the WASP analysis are shown below.

Gradko scored 100% in 2015. See [http://laqm.defra.gov.uk/documents/LAQM-WASP-Rounds-121--124-and-AIR-PT-Rounds-1-3-4-6-\(April-2013--February-2015\)-NO2-report.pdf](http://laqm.defra.gov.uk/documents/LAQM-WASP-Rounds-121--124-and-AIR-PT-Rounds-1-3-4-6-(April-2013--February-2015)-NO2-report.pdf)

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.

Diffusion tube monitoring data reported in this document have been ratified and bias adjusted using the correction factor as stated which is either derived from the most up to date national bias factor (v.03/15).

NOx Continuous Analysers 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 Chemiluminescence analyser and is approved by TUV, US EPA and NETCEN. A second analyser was installed in a Kaizen enclosure in early 2014 to the AQMA4 location at the A52/Stragglethorpe Road junction.

The analysers have a resolution of 0.001ppm and a reported lower detectable limit of <0.5ppb. The linearity error of the analyser is $\pm 1\%$ of the full scale (from best line fit), and the precision is 0.5ppb or 1% of concentration reading (whichever is the greater).

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 analysers were covered by a service and maintenance contract which is now with ET. The service and maintenance contract 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.

Data Handling and Ratification

Data handling

From early 2016 the data handling has been contracted to Geoff Broughton of Air Quality Data Management (AQDM) who is working closely with Envitec who provides the software platform for the data.. See <http://www.aqdm.co.uk/>. Fortnightly data calibration checks are undertaken by RBC officers and this information is used by AQDM to scale and validate the data.

However for 2015 the data handling is as per previous years data handling procedure which is: Raw data is downloaded via a modem connection automatically every 24hours 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 Envitec – Europe and hosted by Nottingham City Council, and data integrity and security is part of this contract arrangement. In addition the data, both raw and ratified is published on the following air quality web page <http://www.nottinghamaqm.net/Default.htm>

Data is downloaded in PPB and µgm-3 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.

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

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

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. Any values added to the NO channel are applied to the NOX channel. This ensures no change in the NO2 outcome.

The same procedure is then carried out with the NOx data using calculated “A” and “B” factors for NOx 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:

NO2 concentration (PPB) = NOx concentration (PPB) - NO concentration. (PPB)

These calculations are undertaken in PPB before any conversion to micrograms. NO2 and NOx are converted to µgm-3 by a conversion factor of 1.91. NO is converted to µgm-3 by a conversion factor of 1.25.

Once data on the PPB channels is determined to be satisfactory the µgm-3 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. Three new channels were 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 as described above with final data being calculated from these ppb channels and converted using the published conversion factors in TG (09).

Discussion of Choice of Factor to Use

Whilst we had the option to use either own Local factor derived from co-location studies with the NOx analyser or the National Bias Adjustment Factor, due to the fact that there were data quality issues with previous years data and data capture has been generally below the 90% recommended in TG(16) Box 7.11 the national factor has been used for diffusion tube bias adjustment. Also the site is not typical of the locations in the diffusion tube study. Also the previous R&A reports have mostly used the national factor and continuing to use this factor will provide a consistent approach to bias adjustment year on year.

The bias factor used in this report is 0.91. This is derived from the national bias figure for Gradko tubes, 20% TEA in water as shown in the screen clipping below.

National Diffusion Tube Bias Adjustment Factor Spreadsheet							Spreadsheet Version Number: 03/16			
Follow the steps below in the correct order to show the results of relevant co-location studies							This spreadsheet will be updated at the end of June 2016			
Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods							LAQM Helpdesk Website			
Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet							Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.			
This spreadsheet will be updated every few months; the factors may therefore be subject to change. This should not discourage their immediate use.										
The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.										
Step 1:		Step 2:	Step 3:	Step 4:						
Select the Laboratory that Analyses Your Tubes from the Drop-Down List		Select a Preparation Method from the Drop-Down List	Select a Year from the Drop-Down List	Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor shown in blue at the foot of the final column.						
If a laboratory is not shown, we have no data for this laboratory.		If preparation method is not shown, we have no data for this method at this laboratory.	If year is not shown, we have no data.	If you have your own co-location study then see footnote*. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@uk.bureauveritas.com or 0800 0327953						
Analysed By ¹	Method ²	Year ³	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) ($\mu\text{g}/\text{m}^3$)	Automatic Monitor Mean Conc. (Cm) ($\mu\text{g}/\text{m}^3$)	Bias (B)	Tube Precision ⁴	Bias Adjustment Factor (A) (Cm/Dm)
Gradko	20% TEA in water	2015	R	Luton Borough Council	12	46	44	6.0%	G	0.94
Gradko	20% TEA in water	2015	R	Monmouthshire County Council	12	41	37	11.0%	G	0.90
Gradko	20% TEA in water	2015	B	Pembrokeshire Council	10	4	3	36.7%	G	0.73
Gradko	20% TEA in water	2015	R	City of Lincoln Council	12	39	33	17.9%	G	0.85
Gradko	20% TEA in water	2015	R	Borough Council of King's Lynn and West Norfolk	12	29	22	32.5%	G	0.75
Gradko	20% TEA in water	2015	R	Cheshire West and Chester	10	38	40	-5.2%	G	1.06
Gradko	20% TEA in water	2015	R	Dudley MBC	12	47	50	-5.9%	G	1.06
Gradko	20% TEA in water	2015	R	Dudley MBC	12	40	35	14.0%	G	0.88
Gradko	20% TEA in water	2015	R	Dudley MBC	12	34	31	10.0%	G	0.91
Gradko	20% TEA in water	2015	UB	Dudley MBC	11	23	19	20.9%	G	0.83
Gradko	20% TEA in water	2015	KS	Glasgow City Council	12	60	61	-0.9%	P	1.01
Gradko	20% TEA in water	2015	UB	Glasgow City Council	10	25	25	3.3%	P	0.97
Gradko	20% TEA in water	2015	R	Glasgow City Council	9	30	31	-2.8%	P	1.03
Gradko	20% TEA in water	2015	R	Glasgow City Council	12	43	38	14.0%	P	0.88
Gradko	20% TEA in water	2015	KS	Marglebone Road Intercomparison	12	102	81	26.2%	G	0.79
Gradko	20% TEA in water	2015	UB	Liverpool	12	20	22	-9.0%	G	1.10
Gradko	20% TEA in water	2015	R	Preston City Council	12	29	27	8.9%	G	0.92
Gradko	20% TEA in water	2015	R	Thurrock Borough Council	12	28	45	-37.1%	G	1.59
Gradko	20% TEA in water	2015	R	Gateshead Council	11	33	33	-0.8%	G	1.01
Gradko	20% TEA in water	2015	R	Gateshead Council	10	36	33	11.2%	G	0.90
Gradko	20% TEA in water	2015	R	Gateshead Council	12	28	25	9.2%	G	0.92
Gradko	20% TEA in water	2015	KS	New Forest DC	11	47	36	31.1%	P	0.76
Gradko	20% TEA in water	2015	R	New Forest DC	11	33	25	31.7%	G	0.76
Gradko	20% TEA in water	2015	R	Wokingham Borough Council	11	36	33	-9.9%	G	0.93
Gradko	20% TEA in water	2015	UC	Southampton City Council	12	28	29	-3.5%	G	1.04
Overall Factor* (29 studies)								Use	0.91	

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Calculations for the correction factors for the annualisation of various sites. As per box 7.9 of tg(16)

Tube sites created set up on the 1/10/2015

	Annual mean result for period 1/1/2015 til 31/12/2015		
	2015	1/10/2015-31/12/2015	
	Annual Mean AM	Period Mean PM	AM/PM
Lincoln Canwick Rd.	33.0725563	29.886487	1.11
Chesterfield Roadside	19.81314334	21.73831736	0.91
Leicester University	26.98319015	29.5166702	0.91
Market Harborough	9.071574038	10.56697358	0.86
		AVERAGE (Ra)	0.95
		annual result X 0.95=	

Trent Buildings

	Annual mean result for period 1/1/2015 til 31/12/2015		
	2015	1/7/2015-31/12/2015	
	Annual Mean AM	Period Mean PM	AM/PM
Lincoln Canwick Rd.	33.0725563	31.10073043	1.06
Chesterfield Roadside	19.81314334	19.66488445	1.01
Leicester University	26.98319015	26.89496275	1.00
Market Harborough	9.071574038	8.490699793	1.07
		AVERAGE (Ra)	1.04
		annual result X 1.04 =	37.4

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Stragglethorpe Road/A52 site

	Annual mean result for period 1/1/2015 til 31/12/2015		
	2015	4/2/2015-31/12/2015	
	Annual Mean AM	Period Mean PM	AM/PM
Lincoln Canwick Rd.	33.0725563	32.56687991	1.02
Chesterfield Roadside	19.81314334	19.51400832	1.02
Leicester University	26.98319015	26.25855327	1.03
Market Harborough	9.071574038	8.711204161	1.04
		AVERAGE (Ra)	1.04
		annual result X 1.04 =	38.5

Loughborough Road/Milicent Road site

	Annual mean result for period 1/1/2015 til 31/12/2015		
	2015	26/1/2015-31/12/2015	
	Annual Mean AM	Period Mean PM	AM/PM
Lincoln Canwick Rd.	33.0725563	32.86707489	1.01
Chesterfield Roadside	19.81314334	19.44090178	1.02
Leicester University	26.98319015	26.54950286	1.02
Market Harborough	9.071574038	8.807717124	1.03
		AVERAGE (Ra)	1.04
		annual result X 1.04 =	28.1

Appendix D: Map(s) of Monitoring Locations and AQMA boundaries

Figure 1 Map of AQMA 1 & AQMA 2 boundaries

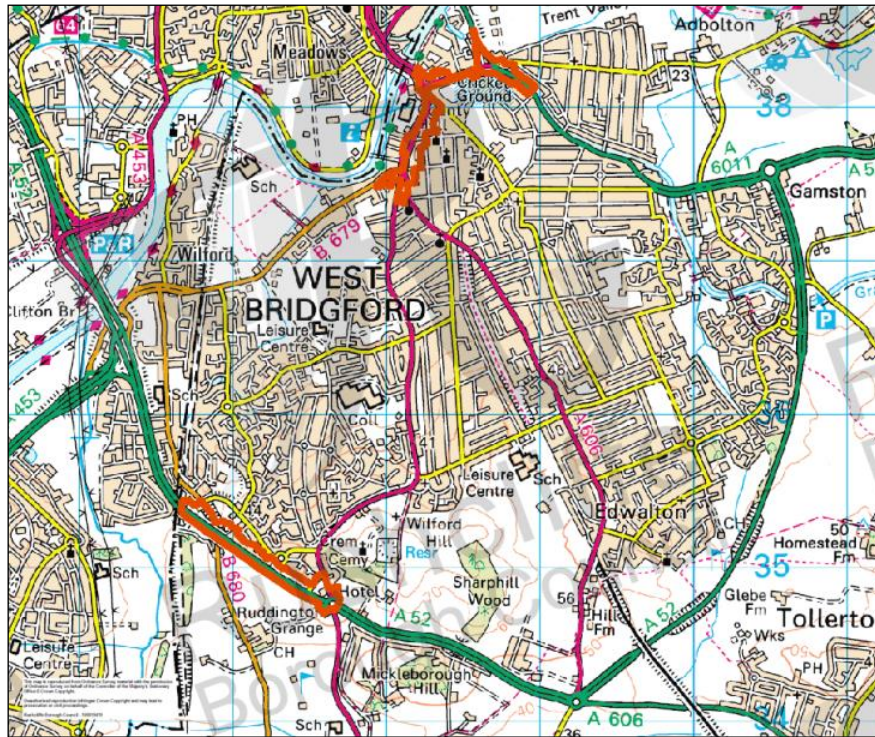


Figure 2 Detailed Map of AQMA 1 Boundaries

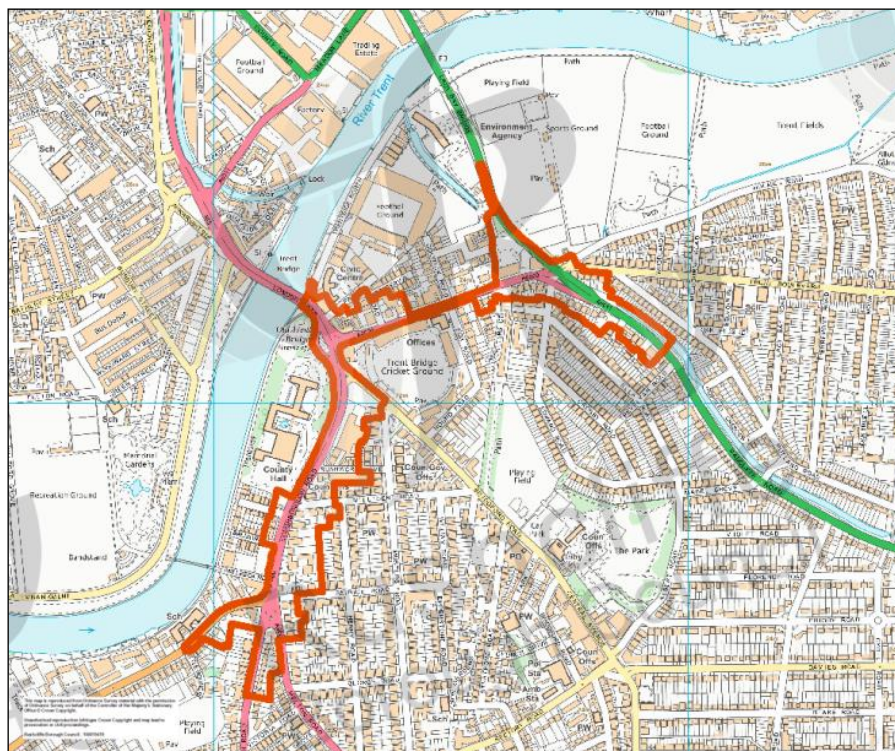


Figure 3 Detailed Map of AQMA 2 Boundaries

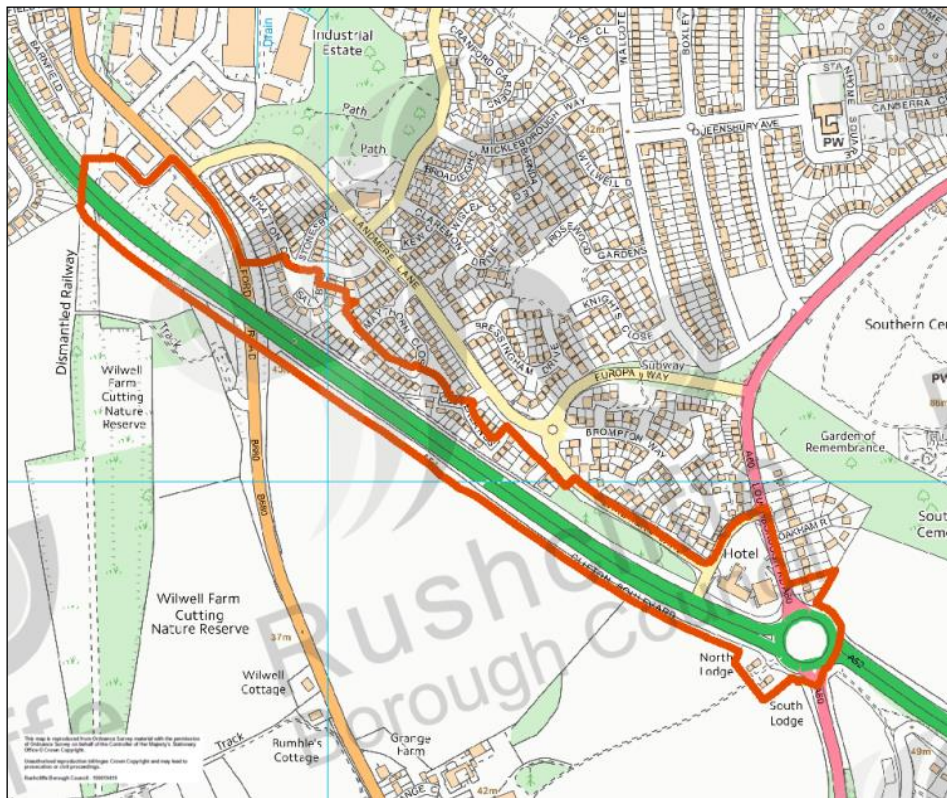


Figure 4 Map of AQMA Boundaries (AQMA4, Stragglethorpe Junction, A52 Radcliffe on Trent)

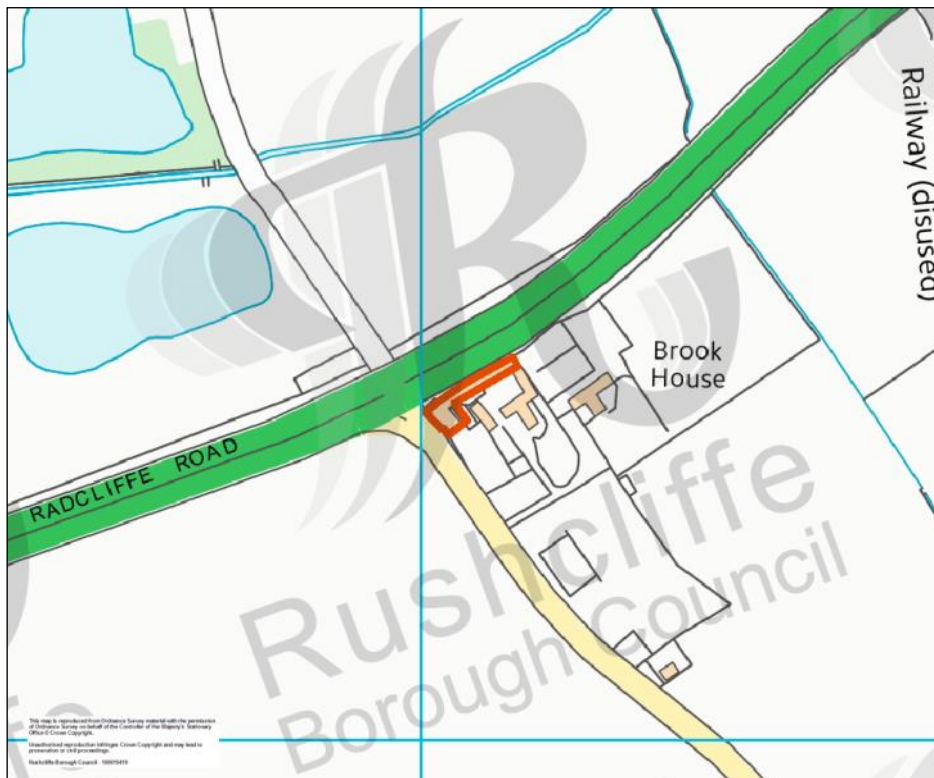


Figure 5 Map of Automatic Monitoring Site Millicent Road, Loughborough Junct.

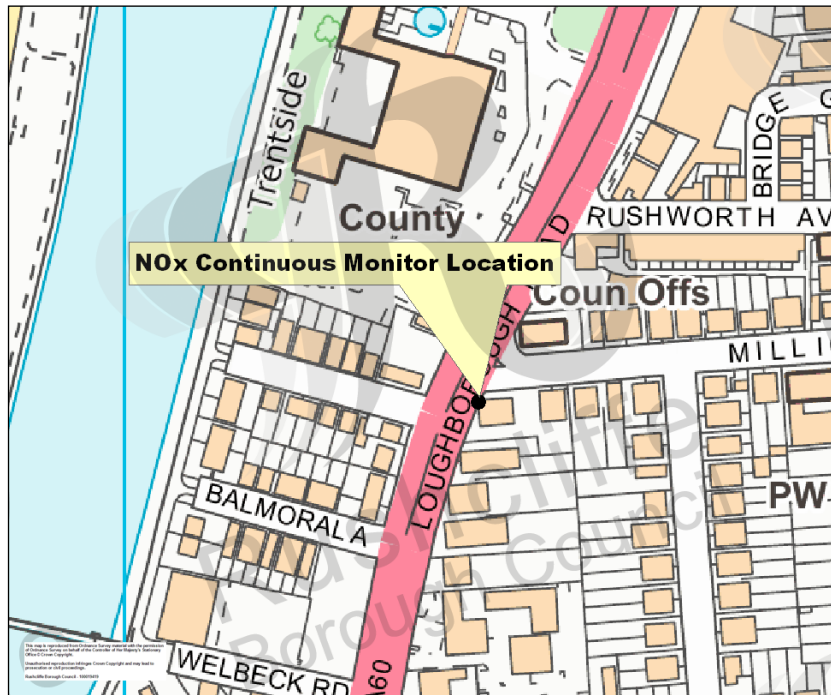


Figure 6 Pphotograph of NOX analyser at Millicent Road, Loughborough Road



Figure 7 Map of Automatic Monitoring Site Nox Analyser A52/Stragglethorpe Junct

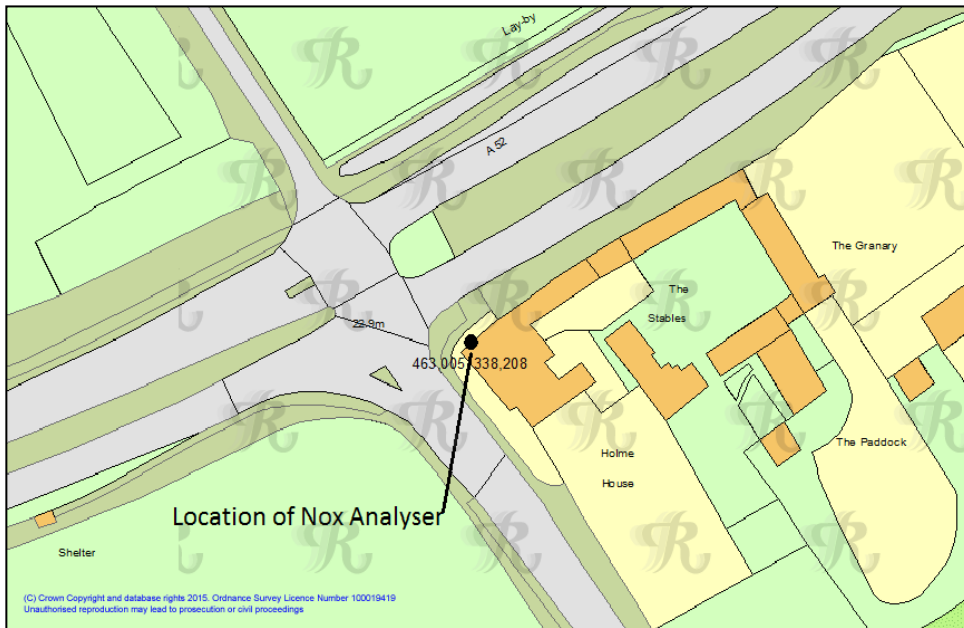


Figure 8 Photographs of the NOX analyser and triplicate diff tube location at the A52/Stragglethorpe Junction



Figure 9 AQMA1 Diffusion Tube locations Loughborough Road West Bridgford

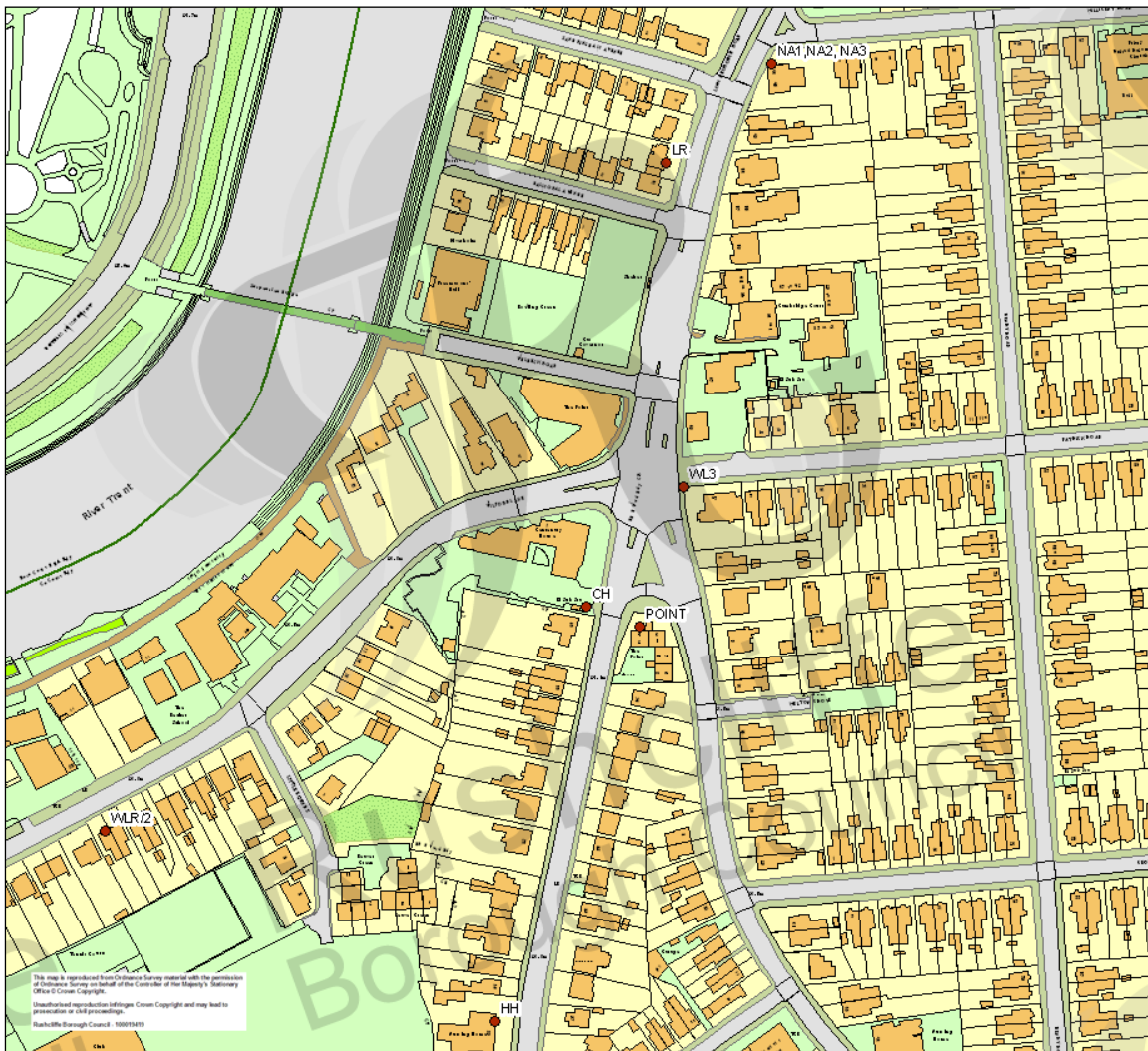


Figure 10 Diffusion Tube Locations Wilford Lane West Bridgford

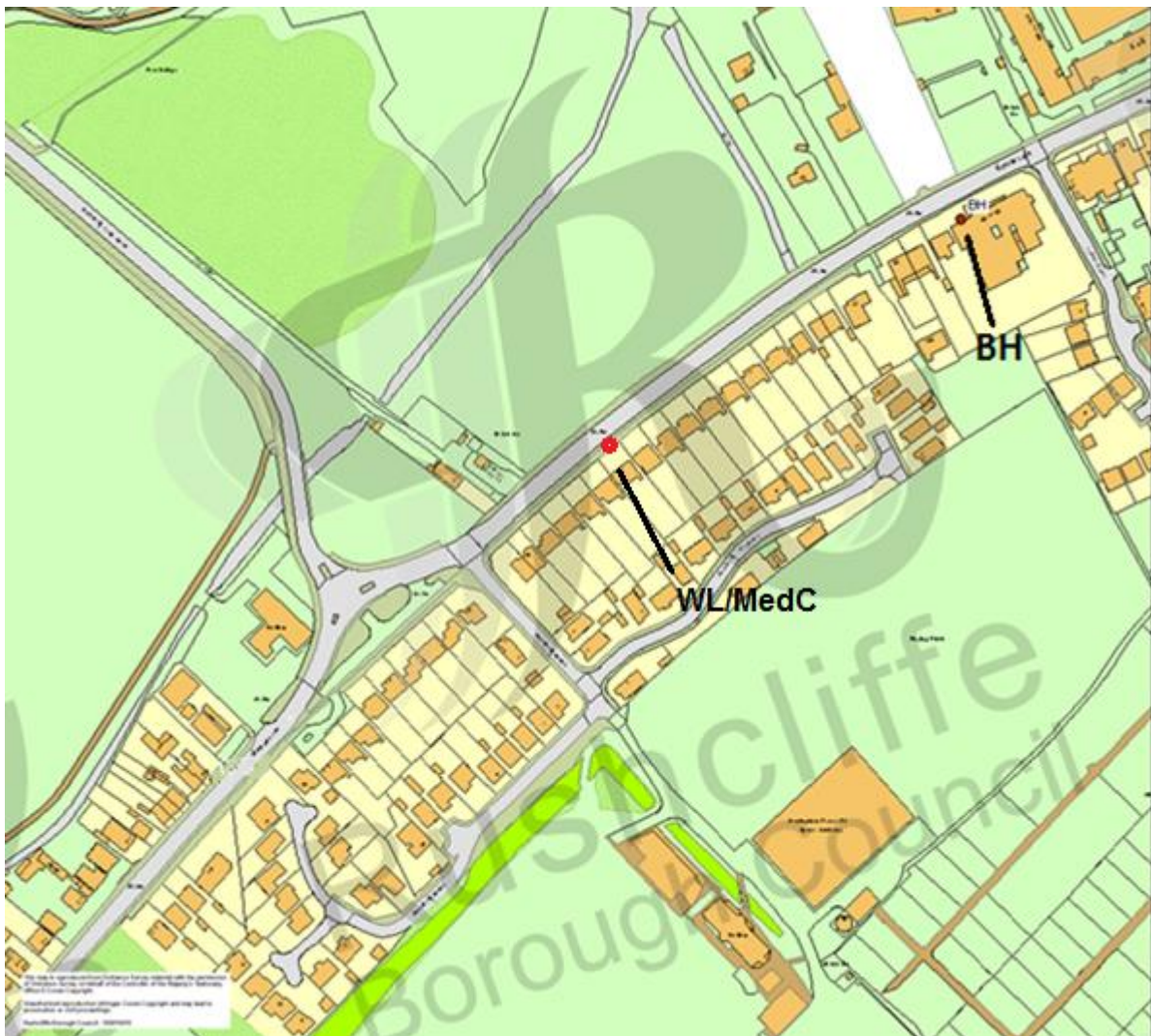


Figure 11 Diffusion Tube Location Rugby Road West Bridgford

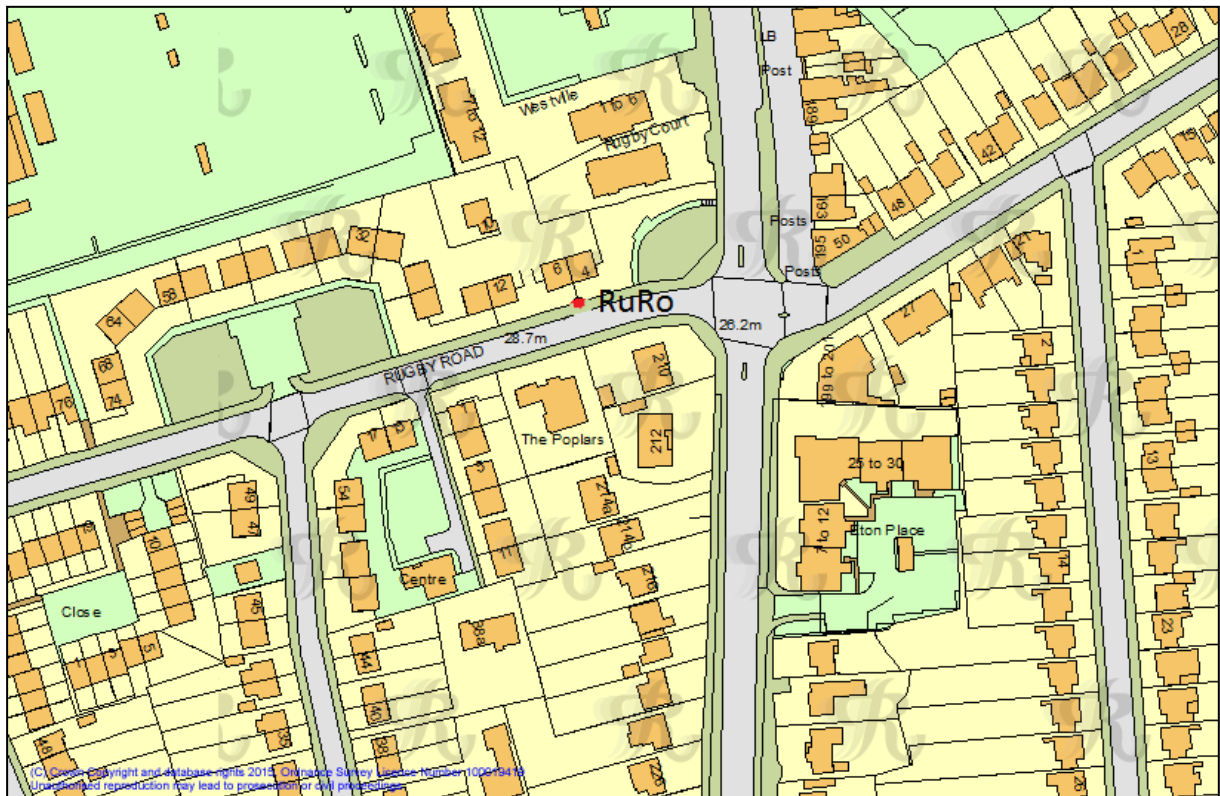


Figure 12 Diffusion Tube Location Syon Park, off Rugby Road West Bridgford

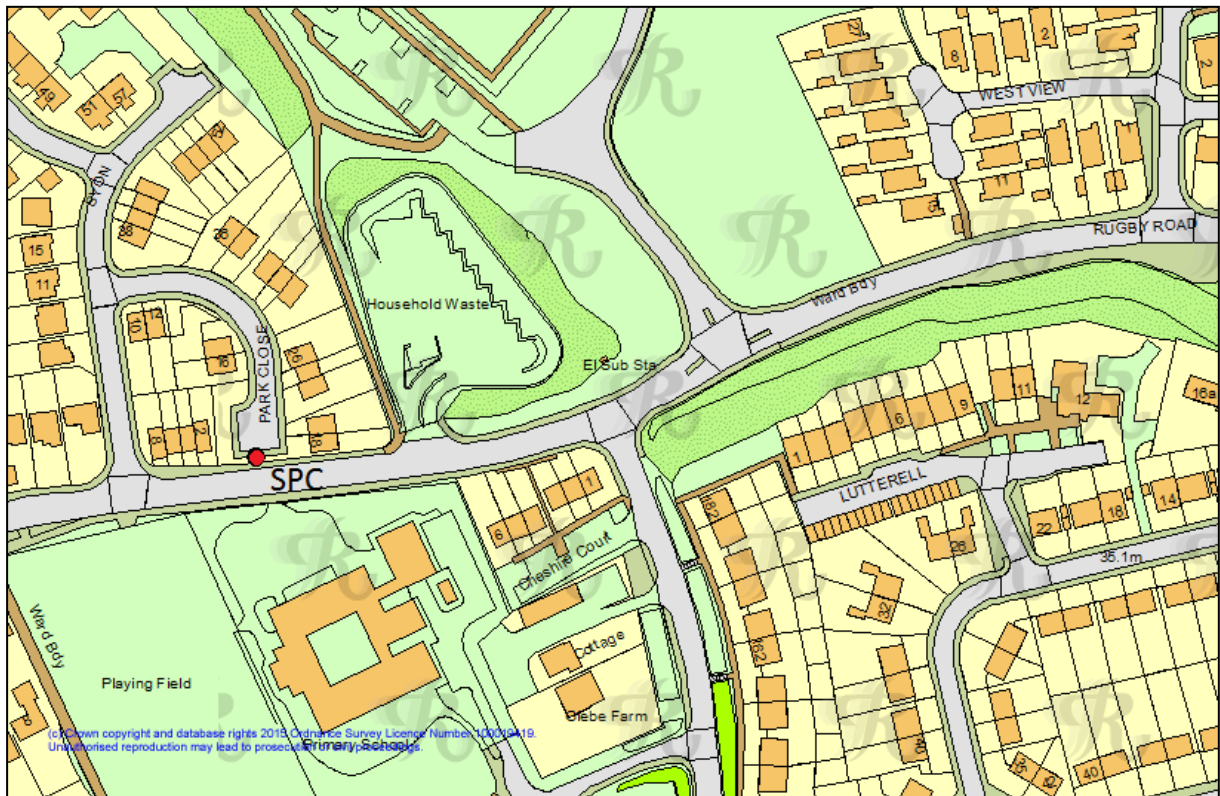


Figure 13 Diffusion Tube Location Heathervale West Bridgford

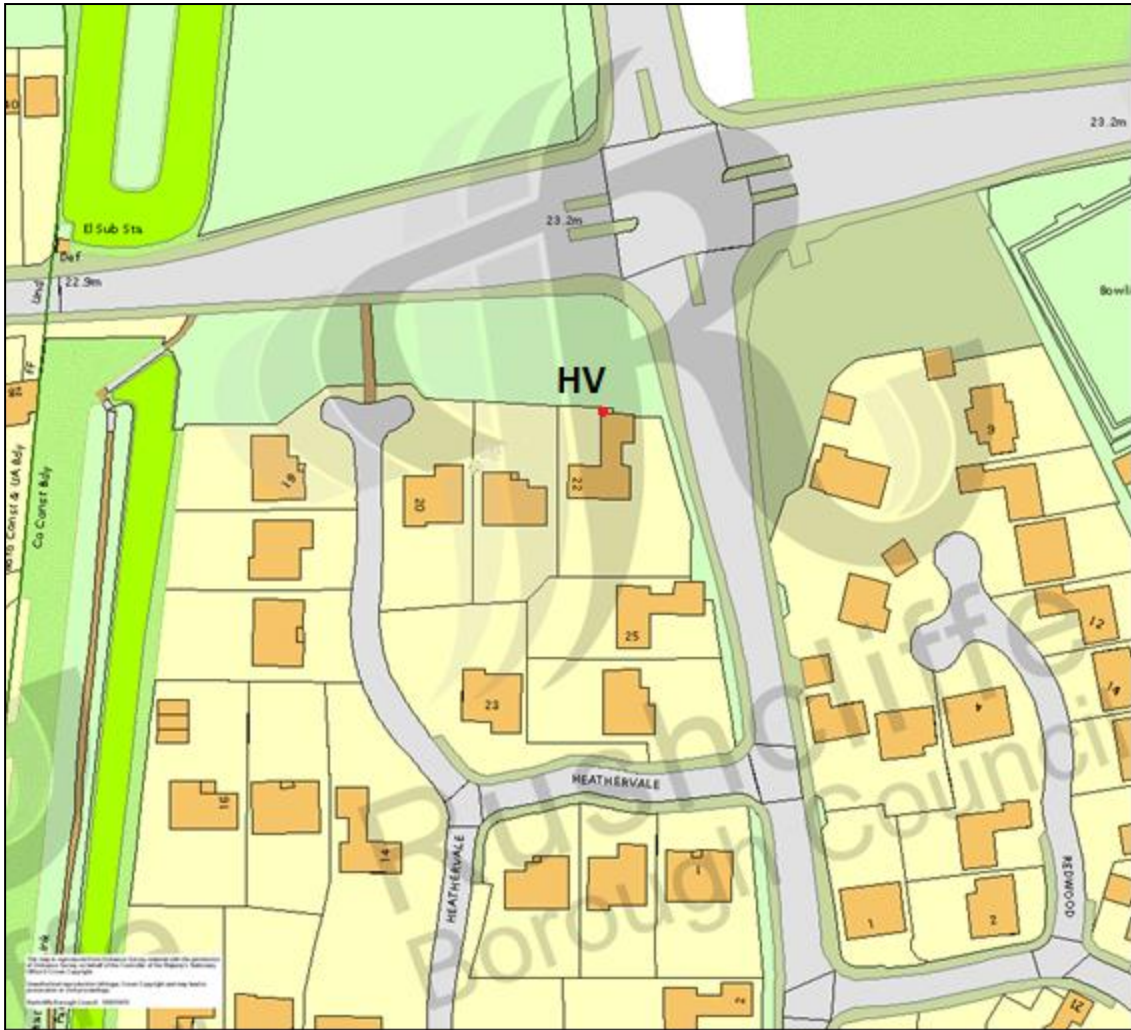


Figure 14 Diffusion Tube location AQMA1 Radcliffe Road West Bridgford

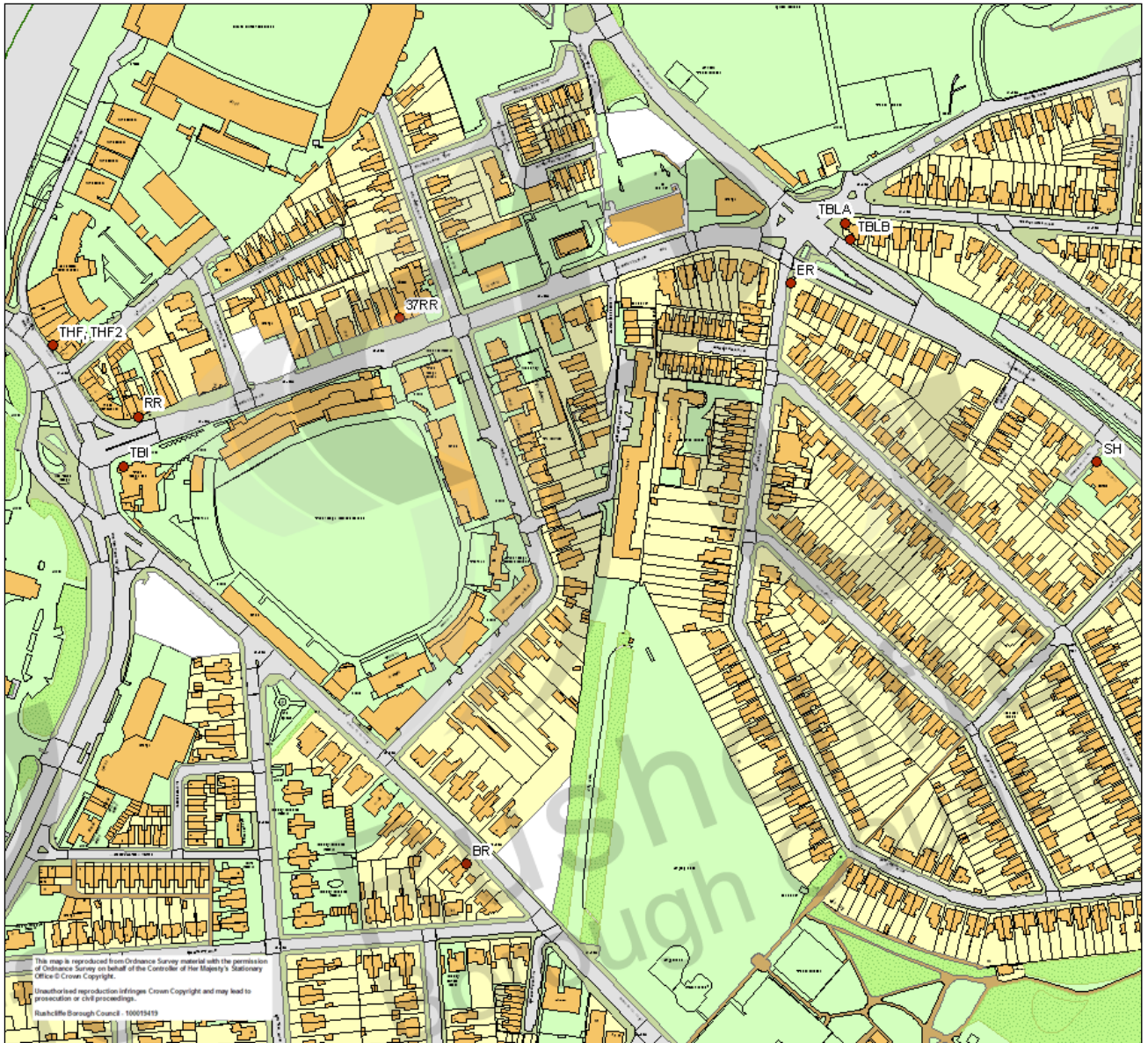


Figure 15 Diffusion Tube location AQMA1 Close up of Radcliffe Road/THF West Bridgford



Figure 16 Diffusion Tube Location AQMA 2

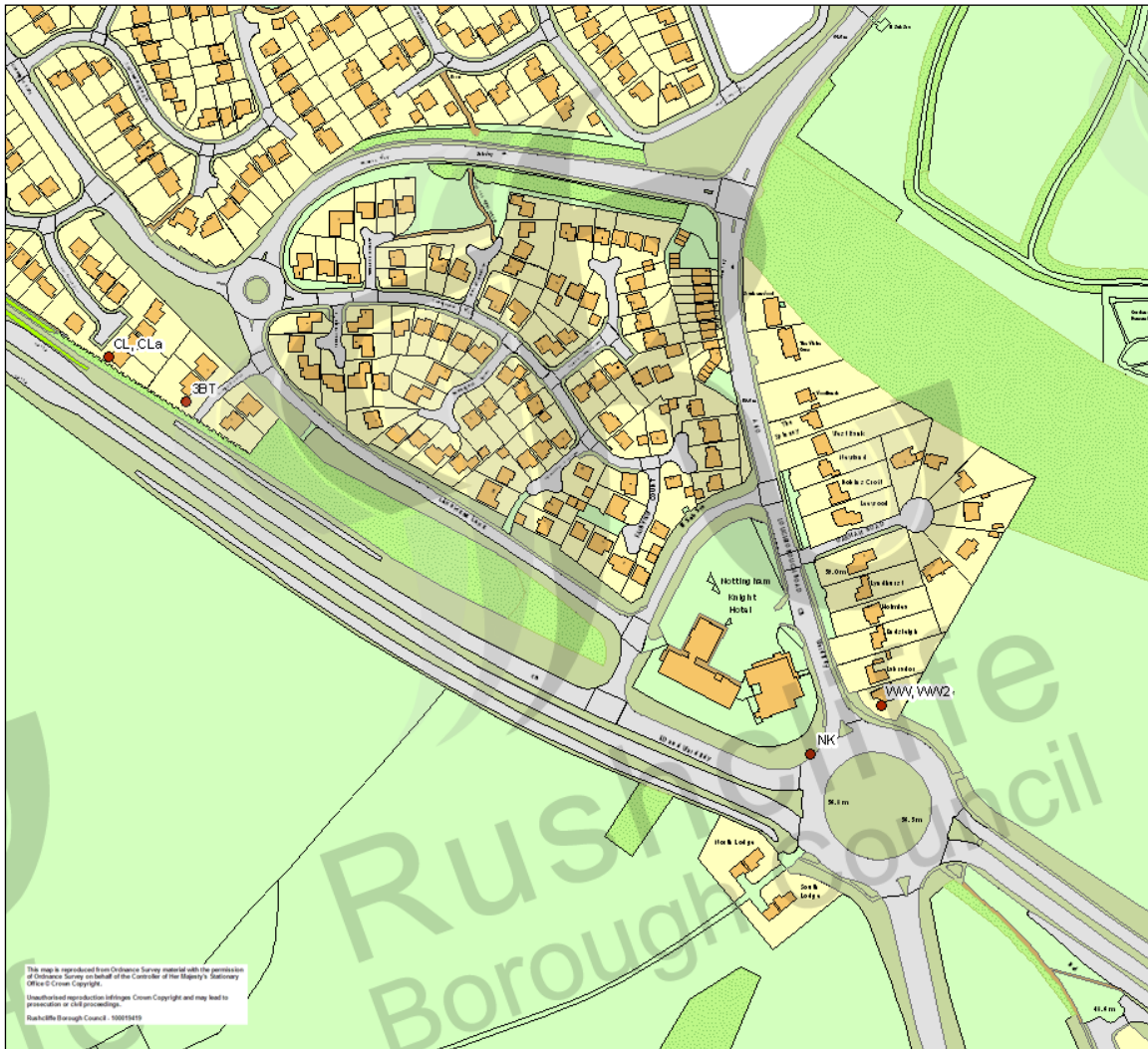


Figure 19 Diffusion Tube Location Hampton Road West Bridford (Background Site)

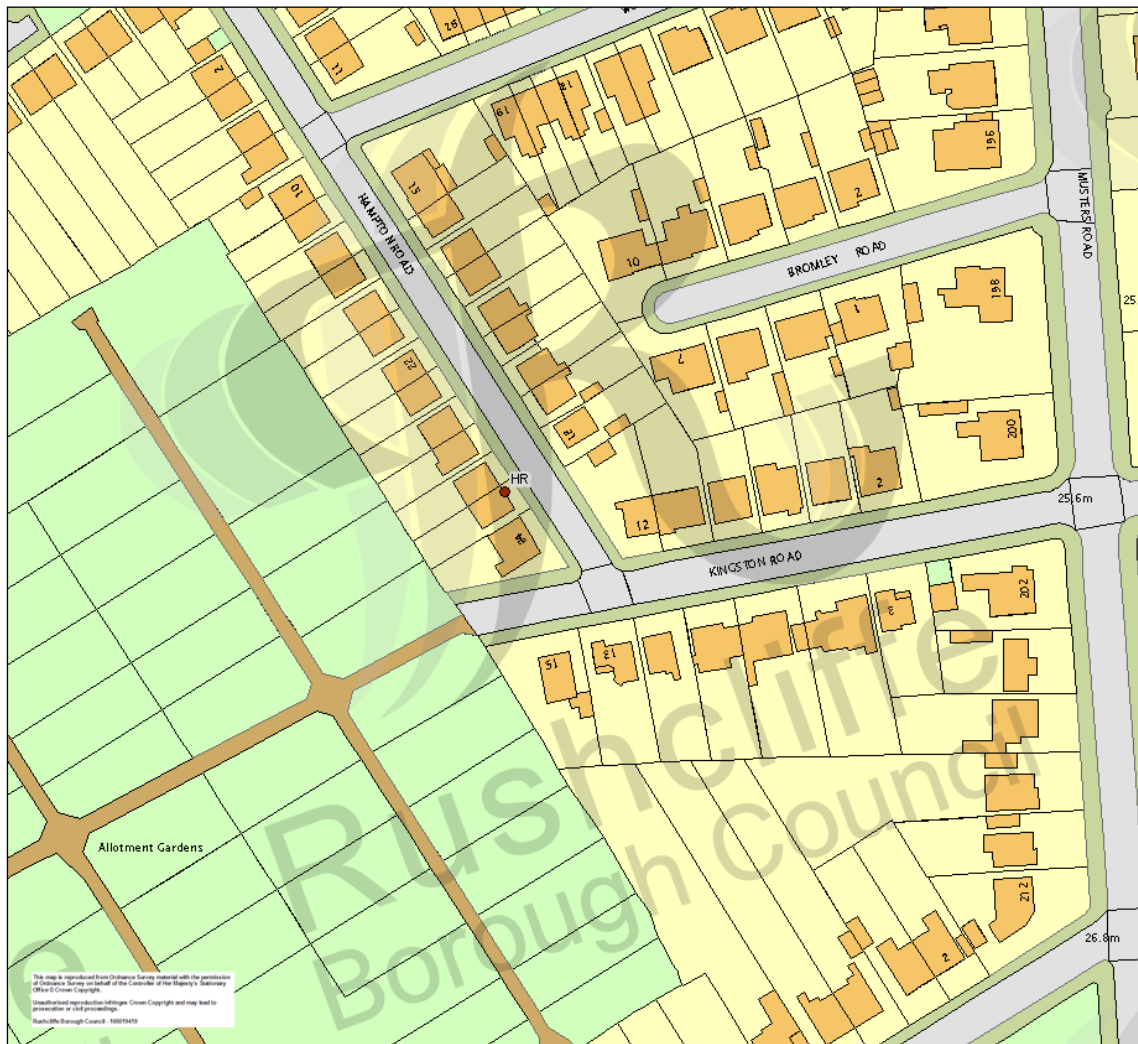


Figure 20 Diffusion Tube Location A52 Radcliffe on Trent

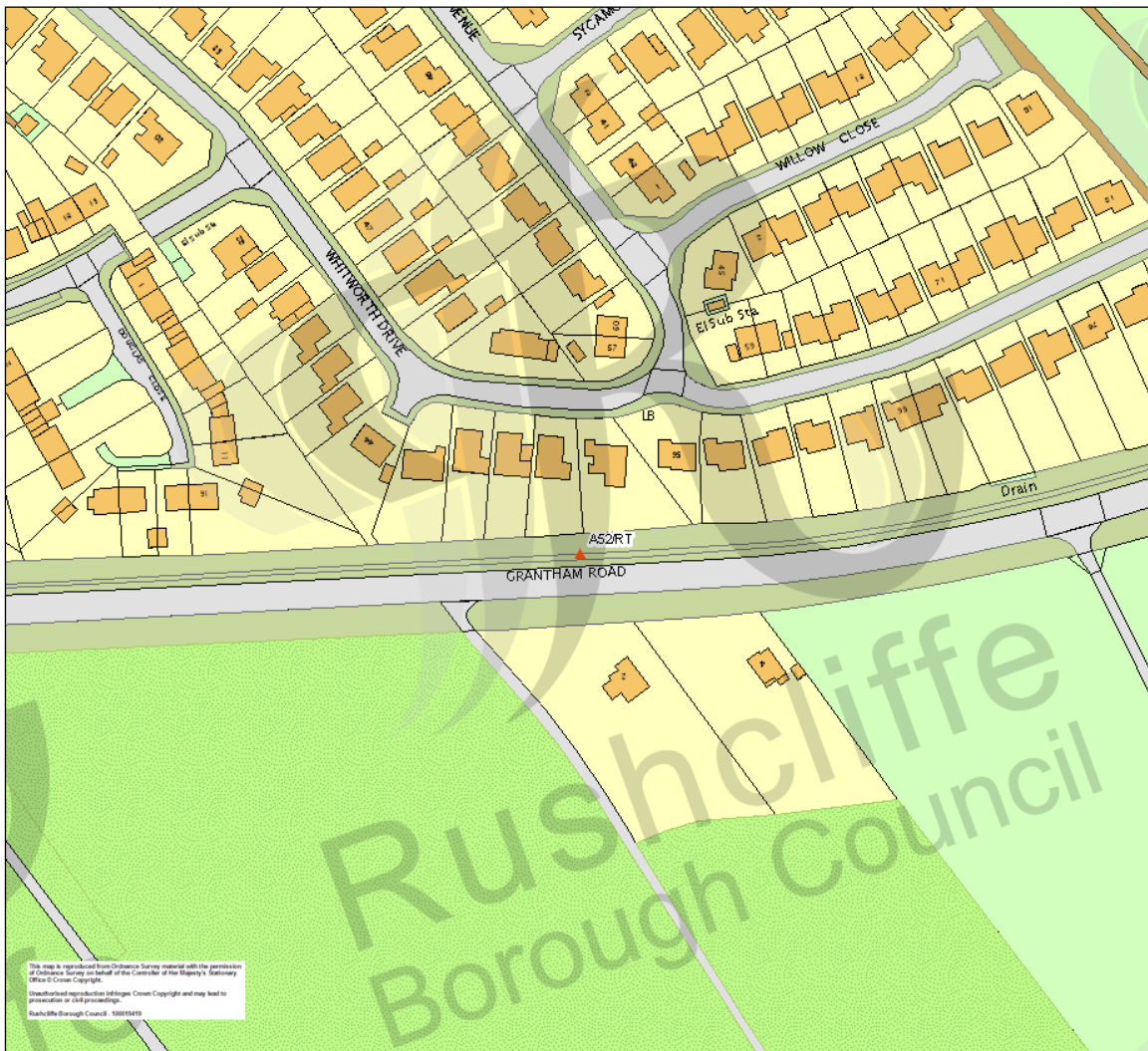


Figure 21 Diffusion Tube Location A52 South Avenue Radcliffe on Trent

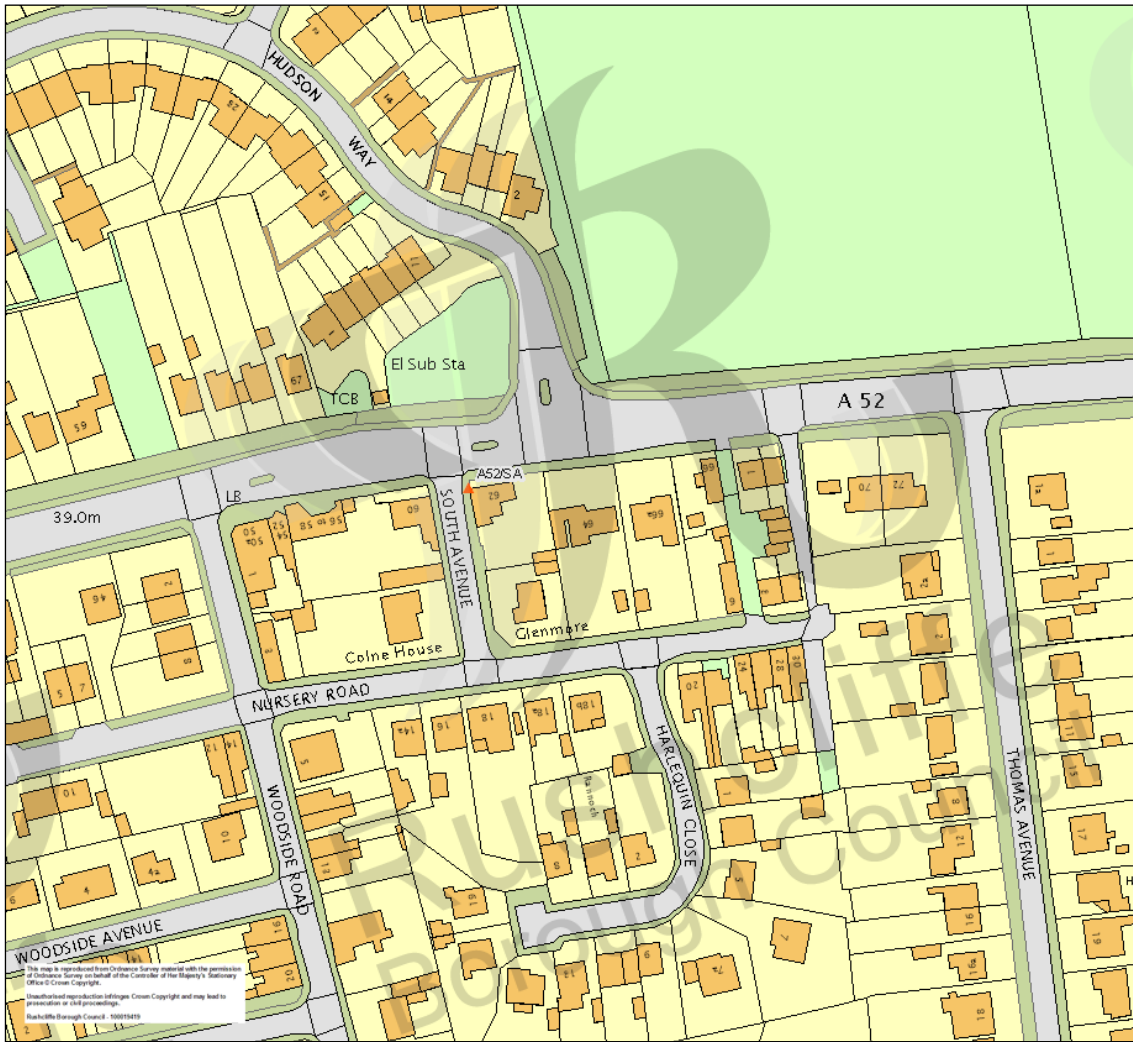


Figure 22 Diffusion Tube location Kirkhill Bingham



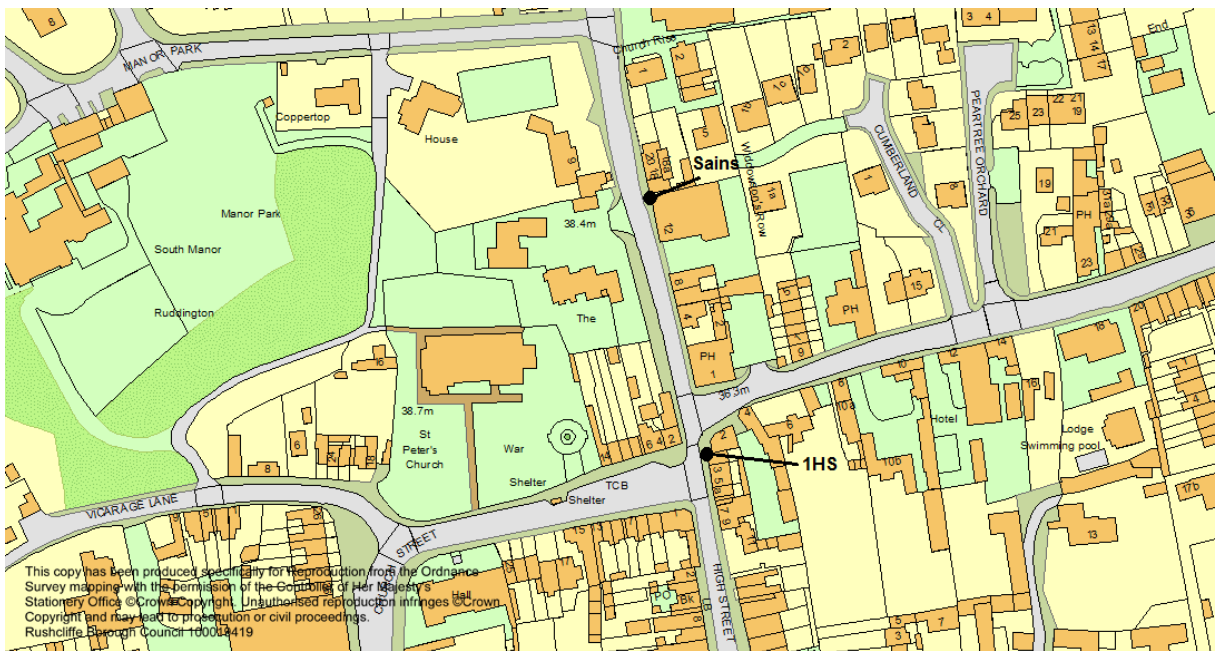
Figure 23 Diffusion Tube Location A52 Radcliffe on Trent junction with Stragglethorpe Road (AQMA 2011/1 AKA AQMA4)



Figure 24 Diffusion Tube Location 1LA and 2 LA (Long Acre Bingham)



Figure 25 Diffusion Tube Location Sains and 1 HS Ruddington (Sainsbury's store and 1 High Street)



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective ⁴	
	Concentration	Measured as
Nitrogen Dioxide (NO ₂)	200 µg/m ³ not to be exceeded more than 18 times a year	1-hour mean
	40 µg/m ³	Annual mean
Particulate Matter (PM ₁₀)	50 µg/m ³ , not to be exceeded more than 35 times a year	24-hour mean
	40 µg/m ³	Annual mean
Sulphur Dioxide (SO ₂)	350 µg/m ³ , not to be exceeded more than 24 times a year	1-hour mean
	125 µg/m ³ , not to be exceeded more than 3 times a year	24-hour mean
	266 µg/m ³ , not to be exceeded more than 35 times a year	15-minute mean

⁴ The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

Glossary of Terms

Please add a description of any abbreviation included in the ASR – An example is provided below.

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Air quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO ₂	Sulphur Dioxide
...	...

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

Local Air Quality Management Technical Guidance LAQM.TG(09). February 2009. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland

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Local Air Quality Management Updating and Screening Assessment Report 2009 Rushcliffe Borough Council

Local Air Quality Management, Progress with AQAP Report 2009 Rushcliffe Borough Council

Local Air Quality Management, Annual Progress Report 2007 Rushcliffe Borough Council

Rushcliffe Borough Council 2007, Local Air Quality Management Air Quality Action Plan 2007

Rushcliffe Borough Council 2010, Local Air Quality Management update of Air Quality Action Plan 2007,

LDF, Local Development Framework

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

LTP3, 3rd Local Transport Plan for Nottingham, 20011-2026, Nottinghamshire County Council

Congestion Delivery Plan, Nottinghamshire County Council 2007

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)

'Updating and screening assessments' and 'progress reports' for all years, 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>