

2017 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the

Environment Act 1995

Local Air Quality Management

July 2017

|  |  |
| --- | --- |
| Local Authority Officer | Tony Cawthorne |
| Department | Environmental Health |
| Address | Council Officers, Station Road, Wigston, Leicestershire, LE18 2DR |
| Telephone | 0116 2572670 |
| E-mail | [Env.Health@oadby-wigston.gov.uk](mailto:Env.Health@oadby-wigston.gov.uk) |
| Report Reference number | AQ/USA/2017 |
| Date | July 2017 |

# Executive Summary: Air Quality in Our Area

This Progress Report forms part of the statutory duties relating to Local Air Quality Management (LAQM) under Part IV of the Environment Act 1995 and the requirements to achieve the Air Quality Objective (AQO) concentrations. It aims to report on the implementation of local air quality management strategies and to report on progress in reviewing and maintaining ambient pollutant concentrations below the AQOs.

The first round of review and assessments of air quality for Oadby and Wigston Borough Council resulted in four Air Quality Management Areas (AQMA’s) being declared based on modelling data for nitrogen dioxide concentrations in 2002. Following several years of passive diffusion tube monitoring data all four of the AQMA’s were revoked in April 2008. Since the previous Updating and Screening Assessment 2016 (USA) there have been no developments in the Borough which could have a significant impact on air quality. Therefore it is not necessary to conduct a detailed assessment relating to any new sources of pollution.

The latest monitoring data shows that the AQOs for all of the air quality strategy pollutants are not likely to be exceeded in areas across the Borough during 2017. No NO2 concentrations were exceeded at a relevant receptor between 2012 and 2016. The long term trend of nitrogen dioxide concentrations between 2003 and 2016 showed a gradual reduction in concentrations at all monitoring locations although this now appears to have plateaued. Therefore it is not necessary to conduct a detailed assessment for any of the air quality strategy pollutants.

The 2014 Progress Report stated that four of the monitoring points would be removed due to nine years of consistently low levels of NO2. These were removed in June 2013 and are no longer reported on although the data still remains in some of the tables and graphs within this report.

Considering the information contained in this report it is recommended that the next action required is an Air Quality Annual Statement Report (ASR) in 2018.

## Air Quality in Oadby and Wigston 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]](#footnote-2),[[2]](#footnote-3).

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion[[3]](#footnote-4).

The close proximity to Leicester City Council (Unitary Authority) and being within the Leicestershire County Council boundary places controls on the transport and transportation routes going through the district, which are having a positive effect on the air pollution in the district.

Air pollution and climate change both arise from the emission to atmosphere of the products of combustion. They are intrinsically linked. National policy advises local authorities to ‘bear in mind the synergies between air quality and climate change, and the added benefits to the local, regional and global environment of having an integrated approach to tackling both climate change and air quality goals.’

“Joined up policies are particularly important for the transport sector, which is by far the most common cause for the declaration of air quality management areas and is the only sector where carbon dioxide emissions continue to increase.”

The consolidated, summary of transport options taken forward into the Leicester City 2011 - 2026 LTP[[4]](#footnote-5) and the Leicestershire County Council 2015/16LTP3 Implementation Plan[[5]](#footnote-6) represented a package of realistic, medium range measures. These are mainly centred upon improving bus services and managing demand for travel by car, this has had the effect of reducing the potential pollution from vehicle emissions crossing into the Borough.

## Actions to Improve Air Quality

The Council has not reported any growth since the last USA 2016 and no additional resources have been implemented due to none of the indicative AQO’s being exceeded. However, due to raised NOx levels within the Canal Street/Blaby Road area of South Wigston, additional diffusion will be deployed in South Wigston for the start of the 2017 Monitoring. The Council maintains a watching brief on the air quality through the continued use of targeted Air Quality NOX tubes and consultation with the planning department on pre application advice and applications received, which are subjectively assessed against the effect that they may have on the AQO’s.

## Local Priorities and Challenges

The Council in its Core Strategy (2010) makes provision for a Direction for Growth to the south east of Wigston (on land between Newton Lane and Welford Road). The purpose of the Direction for Growth is to accommodate the housing and employment growth required on Greenfield land up to 2026 - after all available previously developed (Brownfield) land within the town centres and existing urban area has been taken into account.

The Core Strategy requires approximately 450 new homes and between 2.5 and 3.5 hectares of employment land to be provided on the Direction for Growth up to 2026.[[6]](#footnote-7)

## How to Get Involved

The Council operates a series of meetings throughout the year with local residents and stakeholders based on its three centres, South Wigston, Wigston and Oadby. These open Local Community Forums are presented with the data and observation compiled within this report and their comments are added as community forum commentary for further actions to be taken forward to ensure public involvement and education of the Air Quality objectives to allow the Council to work with local communities to improve the Air Quality in the Borough. The Council will also place the completed USA 2017 on the Oadby and Wigston Council website, to inform residents and advise developers[[7]](#footnote-8). It is also the intention to provide a response for the Forums to respond to the briefing sessions and through the Council website[[8]](#footnote-9) on the ASR 2017 for comments to be brought to the attention of the Environmental Health Department.

Response from South Wigston Community Forum 28th June 2017.

Presentation entitled: Annual Air Quality Status Report 2017

ASR 2017 was discussed by members of the audience and noted its content. However, on the issue of monitoring and future actions the Forum would like additional monitoring to be undertaken on Saffron Road, South Wigston due to a proposed redevelopment of the Glen Parva Youth Offenders unit into a new 800 occupation prison. This is a cross border issue with the application site being in Blaby District Councils area, whilst the access to the site is within OWBC area. It was agreed at the meeting that; two additional NOx Tubes to be installed on Saffron Road, South Wigston at the entrance to the development road and one near a roundabout at a Garage on the roundabout on Saffron Road. This is the preferred route as laid down in the planning agreement with Blaby District Council for access to and from Leicester and the Motorway network, to the development site. Any other traffic to the development will be observed by the diffusion tube at the Vicarage, Blaby Road, South Wigston.

Response from Wigston Community Forum 11th July 2017.

Presentation entitled: Annual Air Quality Status Report 2017

ASR 2017 was discussed by members of the audience who noted its content. Questions from the floor were to clarify the presentation and the report was accepted

Response from Oadby Community Forum 27th July 2017.

Presentation entitled: Annual Air Quality Status Report 2017

ASR 2017 was discussed by members of the audience who noted its content. Questions from the floor were to clarify monitoring positions and sensitive receptors. The presentation and the report were accepted.

**Table of Contents**

Executive Summary: Air Quality in Our Area 3

Air Quality in Oadby and Wigston Borough Council 4

Actions to Improve Air Quality 5

Local Priorities and Challenges 5

How to Get Involved 5

1 Local Air Quality Management 8

2 Actions to Improve Air Quality 9

2.1 Air Quality Management Areas 9

2.2 Progress and Impact of Measures to address Air Quality in Oadby and Wigston Borough Council 9

2.3 PM2.5 – Local Authority Approach to Reducing Emissions and/or Concentrations 15

3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance 16

3.1 Summary of Monitoring Undertaken 16

3.1.1 Automatic Monitoring Sites 16

3.1.2 Non-Automatic Monitoring Sites 16

3.2 Individual Pollutants 16

3.2.1 Nitrogen Dioxide (NO2) 16

3.2.2 Particulate Matter (PM10) 17

3.2.3 Particulate Matter (PM2.5) 17

Appendix A: Monitoring Results 18

Appendix B: Full Monthly Diffusion Tube Results for 2016 23

Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC 24

Appendix D: Map of Monitoring Locations 27

Appendix E: Summary of Air Quality Objectives in England 28

Glossary of Terms 29

References 30

**List of Tables**

[Table 2.1 – Progress on Measures to Improve Air Quality 11](#_Toc483485103)

**List of Figures**

Figure A.1 Trends in Annual Mean NO2 Concentrations .......................................... 23

# Local Air Quality Management

This report provides an overview of air quality in Oadby and Wigston Borough Council during 2016. 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 Oadby and Wigston 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 inAppendix E.

# Actions to Improve Air Quality

## 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.

Oadby and Wigston Borough Council currently does not have any AQMAs. For reference, a map of Oadby and Wigston Borough Council’s monitoring locations is available in Appendix D.

## Progress and Impact of Measures to address Air Quality in Oadby and Wigston Borough Council

Defra’s appraisal of last year’s ASR 2016 from Oadby and Wigston Borough Council concluded:

1. Site 11, Canal St/ Blaby Rd, is very close to the AQO and the LA should take steps to closely monitor this location in case the level of NO2 increases. In which case, the LA should undertake a Detailed Assessment.
2. The map showing the locations of the DTs is clear and this should be continued in future reports.

Oadby and Wigston Borough Council have not identified any other factors likely to have an impact on air quality.

This Updating and Screening Assessment for 2017 has not identified the need to proceed to a detailed assessment for any pollutant. There were four sites where the monitoring results for NO2 showed levels close to the objective annual mean level (40 μg/m3). Three of the results did not exceed 36 μg/m3 when considering the levels at the building façade. One result was 37.6 requiring further monitoring to be undertaken The monitoring has shown the sites have shown a gradual reduction in NO2 levels since 2003 and therefore they only required further monitoring to ensure the concentrations do not exceed the Air Quality objective levels.

The next proposed action by Oadby and Wigston Borough Council on air quality is completion of the 2018 USA Progress Report.

Table 2.1 – Progress on Measures to Improve Air Quality

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Measure No.** | **Measure** | **EU Category** | **EU Classification** | **Organisations involved and Funding Source** | **Planning Phase** | **Implementation Phase** | **Key Performance Indicator** | **Reduction in Pollutant / Emission from Measure** | **Progress to Date** | **Estimated / Actual Completion Date** | **Comments / Barriers to implementation** |
| 1 | Citrix Keys | Promoting Travel Alternatives | Encourage / Facilitate home-working | Lead + Funded: Local Authority | Date | Date | % of x.. | 2% | Implementation on-going | on going | Lengthy Timescale |
| 2 | Rail for Courses | Promoting Travel Alternatives | Promote use of rail and inland waterways | Lead + Funded: Local Authority | Date | Date | # of y.. | 0.2 µg/m3 | Implementation on-going | on going | Funding |
| 3 | Cycle to work scheme | Promoting Travel Alternatives | Promotion of cycling | Lead + Funded: Local Authority | Date | Date | 4 Loans taken up | Reduced vehicle emissions | Implementation on-going | 0n going | First phase successful, second phase on-going |
| 4 | LEV Charging Points | Promoting Low Emission Transport | Priority parking for LEV's | Private companies |  |  | increase in supply |  | 2 charging points provided at University and a Hotel | on going |  |

## PM2.5 – 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 PM2.5 (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that PM2.5 has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

Oadby and Wigston Borough Council has a Smoke Control Area within Oadby which came into force on 1/10/74. The Council publicises the Smoke Control area on its website and provides the order, map and street gazette of the properties.[[9]](#footnote-10)

Oadby and Wigston Borough Council does not monitor PM2.5 concentrations and notes the Public Health Outcomes Framework indicator 3.01 – Fraction of mortality attributable to particulate (PM2.5) air pollution which for 2013 gave a value of 5.1 broadly similar to other authorities within the region[[10]](#footnote-11).

Local health and well being boards have a particularly important role to play under the new public health arrangements for England. These boards are established at upper tier and unitary authority levels, and are under a statutory duty to involve local people in the preparation of Joint Strategic Needs Assessments (JSNA) and development of joint health and wellbeing strategies.

Oadby and Wigston Borough Council has a local Health and Wellbeing board which delivers local consideration to the Full Council and influences local policies and procedures, which feeds into the upper tier Authorities.

The measures that are developed as part of the upper tier and the derived Air Quality Action Plans are likely to reduce emissions and concentrations of PM2.5 within the Borough.

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

## Summary of Monitoring Undertaken

### Automatic Monitoring Sites

Oadby and Wigston Borough Council does not operate continuous monitors in the Borough for any of the Air Quality Strategy pollutants.

Previous rounds of assessment have concluded that the air quality objectives for all pollutants other than nitrogen dioxide would be achieved by their relevant target dates. There have been no significant changes in the Borough which are likely to impact on air quality and therefore further assessment or monitoring is not required.

### Non-Automatic Monitoring Sites

##### Oadby and Wigston Borough Council have carried out passive monitoring for nitrogen dioxide using diffusion tubes at 8 sites during 2016. 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) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g. “annualisation” and/or distance correction), are included in Appendix C.

## Individual Pollutants

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

### Nitrogen Dioxide (NO2)

in Appendix A compares the ratified and adjusted monitored NO2 annual mean concentrations for the past 5 years with the air quality objective of 40µg/m3.

For diffusion tubes, the full 2016 dataset of monthly mean values is provided in Appendix B.

in Appendix A compares the ratified and adjusted monitored NO2 annual mean concentrations for the past 5 years with the air quality objective of 40µg/m3. This shows that the trend is generally stable over that entire period but with fluctuations. The one anomaly in this general trend is site 11 which shows elevated levels between 2011 – 2013, this site had been subject to increased traffic congestion and construction traffic due to the monitoring point being in the vicinity of several major construction projects. However, concentrations of nitrogen dioxide have reduced at this monitoring site following a peak in 2013.

For diffusion tubes, the full 2016 dataset of monthly mean values is provided in Appendix B.

Oadby and Wigston Borough Council does not Monitor the NO2 Hourly mean concentration. However there have been three results in two locations where the monthly readings were in excess of the 60µg/m3 threshold, when annualised the results in these locations fall below the annual 1-hour mean objective 60µg/m3.

### Particulate Matter (PM10)

Oadby and Wigston Borough Council does not undertake any monitoring of PM10.

### Particulate Matter (PM2.5)

Oadby and Wigston Borough Council does not undertake any monitoring of PM2.5.

# Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Oadby and Wigston Borough Council does not undertake continuous Automatic Monitoring

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)** |
| DT1 | Uplands Road/A6 | Kerbside | 463208 | 299913 | NO2 | NO | 12.7 | 3.8 | NO | 2.2 |
| DT3 | Shackerdale Road | Kerbside | 459448 | 299747 | NO2 | NO | 13.4 | 1.42 | NO | 2.36 |
| DT5 | Victoria Court AQMS | Kerbside | 461856 | 301027 | NO2 | NO | 14 | 0,8 | NO | 2.2 |
| DT6 | Glen Road A6 | Kerbside | 463208 | 299913 | NO2 | NO | 12.5 | 5 | NO | 2.2 |
| DT7 | Leicester Road, Wigston | Kerbside | 460541 | 299722 | NO2 | NO | 4 | 3.16 | NO | 2.17 |
| DT9 | St. Wistans Church / Bull Head Street | Kerbside | 460881 | 299075 | NO2 | NO | 25 | 1.55 | NO | 2.34 |
| DT10 | Magna Road / Station Road | Kerbside | 459337 | 298464 | NO2 | NO | 7.4 | 1.63 | NO | 2.4 |
| DT11 | Canal Street / Blaby Road | Kerbside | 459.12 | 298376 | NO2 | NO | 1.6 | 0.82 | NO | 2.35 |

**Notes:**

(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 2016 (%) (2)** | **NO2 Annual Mean Concentration (µg/m3) (3)** | | | | |
| **2012** | **2013** | **2014** | **2015** | **2016** |
| DT1 | Roadside | Diffusion Tube |  | 100 | 37.47 | 33.82 | 31.81 | 32.68 | 32.44 |
| DT2 | Roadside | Diffusion Tube |  |  | 21.03 |  |  |  |  |
| DT3 | Roadside | Diffusion Tube |  | 91.67 | 31.83 | 32.72 | 35.5 |  |  |
| DT4 | Roadside | Diffusion Tube |  |  | 24.25 |  |  |  |  |
| DT5 | Roadside | Diffusion Tube |  | 100 | **41.48** | 32.03 | 37.61 | 36.4 | 34.86 |
| DT6 | Roadside | Diffusion Tube |  | 100 | 32.77 | 33.89 | 32.36 | 30.06 | 29.92 |
| DT7 | Roadside | Diffusion Tube |  | 83.34 | 31.62 | 28.78 | 30.43 | 27 | 29.02 |
| DT8 | Roadside | Diffusion Tube |  |  | 25.11 |  |  |  |  |
| DT9 | Roadside | Diffusion Tube |  | 91.67 | 29.78 | 26.27 | 27.39 | 25.96 | 25.08 |
| DT10 | Roadside | Diffusion Tube |  | 91.67 | 32 | 33.62 | 29.48 | 27.81 | 26.98 |
| DT11 | Roadside | Diffusion Tube |  | 91.67 | **42.19** | **46.26** | 38.55 | 39.56 | 39.72 |
| DT12 | Roadside | Diffusion Tube |  |  | 27.81 |  |  |  |  |

**x Diffusion tube data has been bias corrected**

**x Annualisation has been conducted where data capture is <75%**

**x If applicable, all data has been distance corrected for relevant exposure**

**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 Boxes 7.9 and 7.10 in LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Figure A.1 – Trends in Annual Mean NO2 Concentrations

# Appendix B: Full Monthly Diffusion Tube Results for 2016

Table B.1 – NO2 Monthly Diffusion Tube Results - 2016

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Site ID** | **NO2 Mean Concentrations (µg/m3)** | | | | | | | | | | | | | | |
| **Jan** | **Feb** | **Mar** | **Apr** | **May** | **Jun** | **Jul** | **Aug** | **Sep** | **Oct** | **Nov** | **Dec** | **Annual Mean** | | |
| **Raw Data** | **Bias Adjusted (**0.77**) and Annualised (1)** | **Distance Corrected to Nearest Exposure (2)** |
| DT1 | **54.2** | **42.5** | **45.1** | 34.9 | 37.1 | 35.1 | **41.6** | 38.7 | 39.6 | 35.9 | **51.1** | **49.8** | **42.13** | 32.44 | 27.4 |
| DT3 | **52.9** | **53.1** | **52.5** |  | **40.5** | 36.3 | 39.8 | 36.7 | **42.6** | **40** | **54.8** | **57.9** | **46.10** | 35.50 | 30.3 |
| DT5 | **61.8** | **49.2** | **49.4** | **47.6** | 36.2 | 36.5 | 31.7 | 33.6 | **41** | 34.8 | **58.2** | **63.2** | **45.27** | 34.86 | 27.0 |
| DT6 | **48.1** | **44.1** | **50.2** | **43.2** | 37.4 | 32.8 | 29.2 | 28.7 | 33.1 | 33.7 | 38.4 | **47.4** | 38.86 | 29.92 | 26.5 |
| DT7 | **42.5** | **45.5** | **41.1** | 35.4 | 32.6 | 32.3 | 27.5 | 30 | 34.9 | 39 | **47.1** | **44.3** | 37.68 | 29.02 | 28.6 |
| DT9 | 31 | 38.6 | 37 | 30.5 | 27.8 | 27.2 | 24.4 | 24.7 | 30.7 | 32.7 | **40.9** | **45.3** | 32.57 | 25.08 | 22.9 |
| DT10 | 25.8 | 37.9 | **44.4** |  | 35.3 | 35.1 | 26.8 | 34.5 | 30.8 | **40.1** | **44.1** | 30.6 | 35.04 | 26.98 | 25.7 |
| DT11 | **59.5** | **58.1** | **61.5** | **55.3** | **41.7** | **53.8** | **41.2** | **40** | **46.1** | **54.8** | **59.6** | **47.4** | **51.58** | 39.72 | 37.6 |

x National bias adjustment factor used

x Annualisation has been conducted where data capture is <75%

**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) See Appendix C for details on bias adjustment and annualisation.

(2) Distance corrected to nearest relevant public exposure.

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

**Diffusion Tube Bias Adjustment Factors**

The tube supplier/analyst is Harwell Scientifics which is now part of Environmental Services Group. The laboratory uses 50% TEA in Acetone to calculate the nitrogen dioxide level. Following analysis by the laboratory, the results are then adjusted for bias. The bias adjustment figures (as taken from the DEFRA web-site) are shown in the table below. A factor from a co-location study was not considered as Oadby and Wigston Borough Council did not conduct any such study. Spreadsheet version 03/17 was used to obtain the bias adjustment figure for 2016.

**Bias adjustment figures used between 2003 and 2016**

|  |  |
| --- | --- |
| Year | Bias Adjustment value |
| 2003 | 0.90 |
| 2004 | 0.90 |
| 2005 | 0.91 |
| 2006 | 0.99 |
| 2007 | 0.84 & 0.81 |
| 2008 | 0.80 |
| 2009 | 0.81 |
| 2010 | 0.85 |
| 2011 | 0.84 |
| 2012 | 0.79 |
| 2013 | 0.8 |
| 2014 | 0.81 |
| 2015 | 0.81 |
| 2016 | 0.77 |

**Discussion of Choice of Factor to Use**

Oadby and Wigston Borough Council have not conducted any co-location studies, the national bias adjustment factor was the only available option.

**QA/QC of diffusion tube monitoring**

The tube precision information was taken from the DEFRA website. On the table summarising the precision results for nitrogen dioxide diffusion tube collocation studies, Environmental Services Group had a good level of precision in tests conducted in 2016.

The WASP/AIR NO2 Proficiency Testing scheme reports on laboratories that have demonstrated satisfactory performance with the scheme for analysis of NO2 diffusion tubes. For WASP round AIR PT AR007 (Jan to October 2016) overall 87.5% of results submitted by Environmental Services Group were determined to be satisfactory based upon a z score of < ± 2. The tube precision information was taken from the DEFRA website.[[11]](#footnote-12)

|  |  |  |  |
| --- | --- | --- | --- |
| January - February 2016 | April – May 2016 | July – August 2016 | September – October 2016 |
| 100% | 75 % | 75 % | 100 % |

**Background NO2 levels for Oadby and Wigston Borough Council**

Background NO2 levels for Oadby and Wigston Borough Council taken from the National Air Quality Archive at <https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2013>

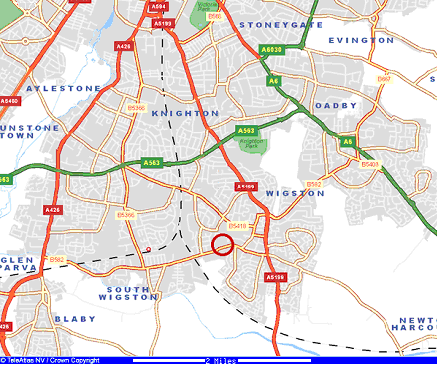
|  |  |  |  |
| --- | --- | --- | --- |
| **Diffusion Tube Grid References** | | | |
| **Tube Location** | | **X** | **Y** |
| 1 | Uplands Rd / Junction A6 | 462590 | 300516 |
| 2 | Council Offices | 460046 | 298709 |
| 3 | Shackerdale Rd / Aylestone Ln | 459527 | 299727 |
| 4 | Countesthorpe Rd | 458860 | 297707 |
| 5 | Victoria Court | 461858 | 301033 |
| 6 | Glen Rd, A6 | 463208 | 299913 |
| 7 | Leicester Rd, Wigston | 460541 | 299722 |
| 8 | Oadby Rd, Wigston | 461269 | 299422 |
| 9 | Church Nook / Bullhead St | 460881 | 299075 |
| 10 | Magna Rd / Station Rd | 459337 | 298464 |
| 11 | Canal St / Station Rd | 459001 | 298386 |
| 12 | Tigers Rd | 458451 | 298792 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Site Nos** | **X** | **Y** | **2015 Background Concentrations (μg/m3)** |
| 10, 11 | 459500 | 298500 | 21.85 |
| 3 | 459500 | 299500 | 23.28 |
| 7, 9 | 460500 | 299500 | 20.7 |
| 5 | 461500 | 301500 | 20.6 |
| 1 | 462500 | 300500 | 20.7 |
| 6 | 463500 | 299500 | 21.6 |

Location of Tubes and Background Concentration used in Facade correction

# 

# Appendix D: Map of Monitoring Locations

**The map indicates the approximate position of the NO2 diffusion tube.**

1 - Uplands Road / A6

2 - Council Offices\*

3 - Shackerdale Road

4 - 141 Blaby Road\*

5 - Victoria Court

6 - Glen Road, A6

5

7 - Leicester Road, Wigston

8 - Oadby Road, Wigston\*

9 – Church Nook /

1

Bullhead Street

10 - Magna Road / Station Road

7

11 - Canal Street / Blaby Road

3

12 - Tigers Road\*

6

\*Monitoring ceased in June 2013

9

10

11

# Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

| **Pollutant** | **Air Quality Objective[[12]](#footnote-13)** | |
| --- | --- | --- |
| **Concentration** | **Measured as** |
| Nitrogen Dioxide (NO2) | 200 µg/m3 not to be exceeded more than 18 times a year | 1-hour mean |
| 40 µg/m3 | Annual mean |
| Particulate Matter (PM10) | 50 µg/m3, not to be exceeded more than 35 times a year | 24-hour mean |
| 40 µg/m3 | Annual mean |

# Glossary of Terms

|  |  |
| --- | --- |
| 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 |
| AQO | National Air Qualities Objectives |
| ASR | Air quality Annual Status Report |
| Defra | Department for Environment, Food and Rural Affairs |
| EU | European Union |
| LAQM | Local Air Quality Management |
| NO2 | Nitrogen Dioxide |
| NOx | Nitrogen Oxides |
| PM10 | Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less |
| PM2.5 | Airborne particulate matter with an aerodynamic diameter of 2.5µm or less |
| QA/QC | Quality Assurance and Quality Control |
| USA | Updating and Screening Assessment |

# References

1. DEFRA (2009), Local Air Quality Management: Technical Guidance, LAQM.TG(09), London, Crown Copyright
2. Oadby and Wigston Borough Council (2006), Updating and Screening Assessment 2006.
3. Oadby and Wigston Borough Council (2007) Progress Report 2007.
4. Oadby and Wigston Borough Council (2008) Progress Report 2008.
5. Oadby and Wigston Borough Council (2009), Updating and Screening Assessment 2009.
6. Oadby and Wigston Borough Council (2010) Progress Report 2010.
7. Oadby and Wigston Borough Council (2011) Progress Report 2011.
8. Oadby and Wigston Borough Council (2012), Updating and Screening Assessment 2012.
9. Oadby and Wigston Borough Council (2011) Progress Report 2013.
10. Oadby and Wigston Borough Council (2011) Progress Report 2014.
11. Oadby and Wigston Borough Council (2015), Updating and Screening Assessment 2015.
12. Oadby and Wigston Borough Council (2016), Updating and Screening Assessment 2016.
13. National Diffusion Tube Bias Adjustment Factor Spreadsheet URL <http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html>
14. Calculator to predict nitrogen dioxide concentrations at different distances from roads, URL Address: <http://laqm.defra.gov.uk/tools-monitoring-data/no2-falloff.html>
15. Report used to confirm WASP/AIR PT scheme information on Environmental Services Group, Didcot, URL Address: <https://laqm.defra.gov.uk/assets/airptrounds7to18apr2015feb2017.pdf>
16. Summary of Precision Results for Nitrogen Dioxide Diffusion Tube Collocation Studies, by Laboratory, URL Address: <http://laqm.defra.gov.uk/documents/Tube_Precision_2014_v09_15-Final.pdf>
17. Estimated background air pollution maps, URL Address:

[http://uk-air.defra.gov.uk/data/laqm-background-maps?year=2013 download.php?p=background08/no2/190-no2-2014.csv](http://uk-air.defra.gov.uk/data/laqm-background-maps?year=2013%20download.php?p=background08/no2/190-no2-2014.csv)

1. Environmental equity, air quality, socioeconomic status and respiratory health, 2010 [↑](#footnote-ref-2)
2. Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006 [↑](#footnote-ref-3)
3. DEFRA. Abatement cost guidance for valuing changes in air quality, May 2013 [↑](#footnote-ref-4)
4. <http://aqma.defra.gov.uk/action-plans/Leicester%20AQAP%202011-2016%20(LTP).pdf> [↑](#footnote-ref-5)
5. [**http://www.leics.gov.uk/ltp3\_implementation\_plan\_2015-16\_n0954-3.pdf**](http://www.leics.gov.uk/ltp3_implementation_plan_2015-16_n0954-3.pdf) [↑](#footnote-ref-6)
6. <http://www.oadby-wigston.gov.uk/pages/latest_news_wigston_direction_for_growth_concept_masterplan> [↑](#footnote-ref-7)
7. <http://www.oadby-wigston.gov.uk/files/documents/air_quality_annual_status_report_2016/Air%20Quality%20Annual%20Status%20Report%202016.pdf> [↑](#footnote-ref-8)
8. <http://www.oadby-wigston.gov.uk/pages/air_quality> [↑](#footnote-ref-9)
9. Smoke Control Order: <http://www.oadby-wigston.gov.uk/pages/smoke_control_areas> [↑](#footnote-ref-10)
10. <http://www.phoutcomes.info/search/Particulate%20Matter> [↑](#footnote-ref-11)
11. <https://laqm.defra.gov.uk/assets/airptrounds7to18apr2015feb2017.pdf> [↑](#footnote-ref-12)
12. The units are in microgrammes of pollutant per cubic metre of air (µg/m3). [↑](#footnote-ref-13)