Annual Progress Report (APR)

**Insert LA Logo Here**

|  |
| --- |
| **INSTRUCTIONS**  This is the Annual Progress Report (APR) for submission to the Scottish Government by **30 June** of each calendar year.  Blue boxes provide instructions and/or further information to help local authorities complete the report. These boxes should be deleted before submitting the report.  Red text indicates an example or where the local authority needs to fill in information. Once the required information has been completed the font colour should be amended to match that of the body text.  **Delete this box when the document is finished** |

2021 Air Quality Annual Progress Report (APR) for <Local Authority Name>

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

Date (Month, Year)

|  |
| --- |
| **ACCESSIBILTY INSTRUCTIONS**  This 2021 reporting template has been developed to comply with the [Accessibility Regulations (2018)](https://www.legislation.gov.uk/uksi/2018/952/made). Instructions are provided throughout the template as a steer to ensuring that the completed APR remains compliant with Accessibility Regulations, with the key points to adhere to summarised as follows:   * Make hyperlinks accessible - the text used for hyperlinks should describe where people will go if they click that link * Follow the template heading styles - important to define the content hierarchy and use the correct heading style at the right time * Avoid using ‘tab’ or ‘enter’ to create spaces between text/sections, utilise page/section breaks * Use the tables within the template. If any additional tables are required, ensure these are formatted correctly and a summary of the table is provided within the accompanying text (N.B. alt text added to tables does not save if the document is converted to a pdf):   + Ensure the top row is selected as the ‘header row’   + Avoid the use of merged or split cells   + The table should read logically from left to right and top to bottom * When inserting trend graphs/charts ensure that colour combinations relevant to colour blindness are avoided * Add alt text to charts or pictures inserted within the report that do not have a corresponding summary written directly above or below the chart * Text should be aligned to the left and not justified   If saving the document as a PDF it is recommended that the ‘Create bookmarks using’ option with the sub-option of ‘Headings’ is selected. Although not an explicit requirement in terms of accessibility, this will ensure your document is easy to read and navigate.  Further guidance in terms of publishing accessible documents can be found through the following on the [.gov.scot website](https://www.gov.scot/accessibility/). If the APR is to be published on your authority website, it is recommended that the APR is checked by your content team to ensure compliance.  **Delete this box when the document is finished** |

|  |  |
| --- | --- |
| Information | <Local Authority Name> Details |
| Local Authority Officer | Enter Name(s) Here |
| Department | Enter Department Name |
| Address | Enter Address |
| Telephone | Enter Telephone |
| E-mail | Enter Email Address |
| Report Reference Number | Enter Report Reference |
| Date | Enter Date of Report |

|  |
| --- |
| **INSTRUCTIONS**  The following list is provided to assist local authorities in understanding the most frequent issues noted by the Scottish Government during the APR appraisal process:   * Outdated national bias adjustment factor used – if a national factor is to be used please ensure the relevant factor from the most up to date version of the national spreadsheet is adopted. This will be available from <https://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html> * Incorrect methodology used to complete annualisation – the new [Diffusion Tube Data Processing Tool](https://laqm.defra.gov.uk/tools-monitoring-data/DTDP.html) can be used to complete annualisation to minimise the likelihood of processing errors and can export files suitable for upload to the [LAQM Portal](https://laqm.defra.gov.uk/review-and-assessment/LAQMPortal.html). The [Annualisation Tool](https://laqm.defra.gov.uk/tools-monitoring-data/annualisation.html) is also still available. * Erroneous monthly diffusion tube data included within annual mean calculations - data should be removed as per Chapter 7: NOx and NO2 Monitoring, NO2 by Diffusion Tubes of [Technical Guidance LAQM.TG16](https://laqm.defra.gov.uk/technical-guidance/index.html) * Distance correction - should only be completed for monitoring sites where the concentration is greater than 36µg/m3 and the receptor is not located at a point of relevant exposure * Insufficient detail provided regarding the progress of action plan measures - insufficient detail provided within Table 2.2 * Monitoring and AQMA maps - these should be clear and accurate   Adequately addressing the above points will minimise the likelihood of your report being rejected at the appraisal stage.  **Delete this box when the document is finished** |

# Executive Summary: Air Quality in Our Area

|  |
| --- |
| **INSTRUCTIONS**  Please summarise the main findings and conclusions of the report here. This should include (but is not limited to, as could include other information you consider important):   * Key news/headlines about how you’ve improved air quality in your area * Current challenges/priorities for addressing air quality in your area * How the public is or can get involved, e.g. walk, don’t drive; anti-idling, car sharing etc. * 1-2 pictures of air quality initiatives in your area, if possible.   This overview is designed to provide a summary for those living and working in your local authority area of the state of air quality in the area and progress on the actions that you and others, including the public, are taking or could take to improve air quality. It is also an opportunity to indicate whether any changes are required to your Action Plans.  Any supplementary information related to air quality that the public may find useful can also be included here.  **Delete this box when the document is finished** |

## Air Quality in <Local Authority Name>

Include a brief summary of the main air quality issues in your local area – what are the main pollutants of concern, what is the latest monitoring saying (levels going up or down), any new major sources of emissions. Include the introduction of any new AQMAs, Action Plans or strategies. Briefly explain how your local authority works to manage local air quality and how you work with your partners e.g. SEPA, Transport Scotland.

If there are no air quality issues in your area, please provide a statement to this effect.

## Actions to Improve Air Quality

Include a brief summary of core actions (and in particular success stories or lessons learned) to target sources of pollution in your area over the past year, indicate any quantitative improvements from actions taken (if known).

## Local Priorities and Challenges

Include here a brief summary of what the priorities are for the local authority in addressing air quality for the coming year and briefly set out any challenges.

If your authority has no specific priorities or challenges for the coming year beyond the statutory monitoring and reporting requirements, please provide a statement to this effect.

## How to Get Involved

Include a brief statement on how the public can obtain further information on air quality within your local authority area.

Table of Contents

|  |
| --- |
| **INSTRUCTIONS**  This is the start of main body of the APR, which should contain all the detailed technical information.  Please:   * Update Table of Contents, List of Tables and List of Figures on completion of report (select within text below> right click > update field>Update Entire Table) * Include hyperlinks in the PDF version   **Delete this box when the document is finished** |

[Executive Summary: Air Quality in Our Area i](#_Toc68161108)

[Air Quality in <Local Authority Name> i](#_Toc68161109)

[Actions to Improve Air Quality ii](#_Toc68161110)

[Local Priorities and Challenges ii](#_Toc68161111)

[How to Get Involved ii](#_Toc68161112)

[1 Local Air Quality Management 7](#_Toc68161113)

[2 Actions to Improve Air Quality 9](#_Toc68161114)

[2.1 Air Quality Management Areas 9](#_Toc68161115)

[2.2 Cleaner Air for Scotland 10](#_Toc68161116)

[2.2.1 Transport – Avoiding Travel – T1 11](#_Toc68161117)

[2.2.2 Climate Change – Effective co-ordination of climate change and air quality policies to deliver co-benefits – CC2 11](#_Toc68161118)

[2.2.3 <Add commentary on further actions as appropriate> 11](#_Toc68161119)

[2.3 Progress and Impacts of Measures to address Air Quality in <Local Authority Name> 11](#_Toc68161120)

[3 Air Quality Monitoring Data and Comparison with Air Quality Objectives 15](#_Toc68161121)

[3.1 Summary of Monitoring Undertaken 15](#_Toc68161122)

[3.1.1 Automatic Monitoring Sites 15](#_Toc68161123)

[3.1.2 Non-Automatic Monitoring Sites 16](#_Toc68161124)

[3.2 Individual Pollutants 16](#_Toc68161125)

[3.2.1 Nitrogen Dioxide (NO2) 16](#_Toc68161126)

[3.2.2 Particulate Matter (PM10) 18](#_Toc68161127)

[3.2.3 Particulate Matter (PM2.5) 18](#_Toc68161128)

[3.2.4 Sulphur Dioxide (SO2) 19](#_Toc68161129)

[3.2.5 Carbon Monoxide, Lead and 1,3-Butadiene 20](#_Toc68161130)

[4 New Local Developments 21](#_Toc68161131)

[4.1 Road Traffic Sources 21](#_Toc68161132)

[4.2 Other Transport Sources 22](#_Toc68161133)

[4.3 Industrial Sources 22](#_Toc68161134)

[4.4 Commercial and Domestic Sources 23](#_Toc68161135)

[4.5 New Developments with Fugitive or Uncontrolled Sources 23](#_Toc68161136)

[5 Planning Applications 25](#_Toc68161137)

[6 Impact of COVID-19 upon LAQM 26](#_Toc68161138)

[7 Conclusions and Proposed Actions 28](#_Toc68161139)

[7.1 Conclusions from New Monitoring Data 28](#_Toc68161140)

[7.2 Conclusions relating to New Local Developments 28](#_Toc68161141)

[7.3 Proposed Actions 29](#_Toc68161142)

[Appendix A: Monitoring Results 30](#_Toc68161143)

[Appendix B: Full Monthly Diffusion Tube Results for 2020 39](#_Toc68161144)

[Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC 40](#_Toc68161145)

[New or Changed Sources Identified Within <Local Authority Name> During <Year> 41](#_Toc68161146)

[Additional Air Quality Works Undertaken by <Local Authority Name> During <Year> 41](#_Toc68161147)

[QA/QC of Diffusion Tube Monitoring 42](#_Toc68161148)

[Diffusion Tube Annualisation 42](#_Toc68161149)

[Diffusion Tube Bias Adjustment Factors 43](#_Toc68161150)

[NO2 Fall-off with Distance from the Road 44](#_Toc68161151)

[QA/QC of Automatic Monitoring 44](#_Toc68161152)

[PM10 and PM2.5 Monitoring Adjustment 44](#_Toc68161153)

[Automatic Monitoring Annualisation 45](#_Toc68161154)

[NO2 Fall-off with Distance from the Road 45](#_Toc68161155)

[Glossary of Terms 53](#_Toc68161156)

[References 54](#_Toc68161157)

List of Tables

Table 1.1 – Summary of Air Quality Objectives in Scotland 7

Table 2.1 – Declared Air Quality Management Areas 10

Table 2.2 – Progress on Measures to Improve Air Quality 14

[Table A.1 – Details of Automatic Monitoring Sites 30](#_Toc68161161)

[Table A.2 – Details of Non-Automatic Monitoring Sites 31](#_Toc68161162)

[Table A.3 – Annual Mean NO2 Monitoring Results (µg/m3) 33](#_Toc68161163)

[Table A.4 – 1-Hour Mean NO2 Monitoring Results, Number of 1-Hour Means > 200µg/m3 34](#_Toc68161164)

[Table A.5 – Annual Mean PM10 Monitoring Results (µg/m3) 35](#_Toc68161165)

[Table A.6 – 24-Hour Mean PM10 Monitoring Results, Number of PM10 24-Hour Means > 50µg/m3 36](#_Toc68161166)

[Table A.7 – Annual Mean PM2.5 Monitoring Results (µg/m3) 37](#_Toc68161167)

[Table A.8 – SO2 2020 Monitoring Results, Number of Relevant Instances 38](#_Toc68161168)

[Table B.1 – NO2 2020 Monthly Diffusion Tube Results (µg/m3) 39](#_Toc68161169)

[Table C.1 – Bias Adjustment Factor 43](#_Toc68161170)

[Table C.2 – Annualisation Summary (concentrations presented in µg/m3) 47](#_Toc68161171)

[Table C.3 – Local Bias Adjustment Calculations 49](#_Toc68161172)

[Table C.4 – NO2 Fall off With Distance Calculations (concentrations presented in µg/m3) 51](#_Toc68161173)

List of Figures

Please insert a list of Figures/Charts here.

|  |
| --- |
| Insert list on Completion of Report:  Select References tab 🡪 Insert Table of Figures 🡪 Select ‘….’ Tab leader 🡪 Select ‘Figure’ Caption Label  **Delete this box after you have inserted the table** |

# Local Air Quality Management

This report provides an overview of air quality in <Local Authority Name> during 2020. 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 Progress Report (APR) is summarises the work being undertaken by <Local Authority Name> to improve air quality and any progress that has been made.

Table 1.1 – Summary of Air Quality Objectives in Scotland

| **Pollutant** | **Air Quality Objective Concentration** | **Air Quality Objective Measured as** | **Date to be Achieved by** |
| --- | --- | --- | --- |
| Nitrogen dioxide (NO2) | 200 µg/m3 not to be exceeded more than 18 times a year | 1-hour mean | 31.12.2005 |
| Nitrogen dioxide (NO2) | 40 µg/m3 | Annual mean | 31.12.2005 |
| Particulate Matter (PM10) | 50 µg/m3, not to be exceeded more than 7 times a year | 24-hour mean | 31.12.2010 |
| Particulate Matter (PM10) | 18 µg/m3 | Annual mean | 31.12.2010 |
| Particulate Matter (PM2.5) | 10 µg/m3 | Annual mean | 31.12.2020 |
| Sulphur dioxide (SO2) | 350 µg/m3, not to be exceeded more than 24 times a year | 1-hour mean | 31.12.2004 |
| Sulphur dioxide (SO2) | 125 µg/m3, not to be exceeded more than 3 times a year | 24-hour mean | 31.12.2004 |
| Sulphur dioxide (SO2) | 266 µg/m3, not to be exceeded more than 35 times a year | 15-minute mean | 31.12.2005 |
| Benzene | 3.25 µg/m3 | Running annual mean | 31.12.2010 |
| 1,3 Butadiene | 2.25 µg/m3 | Running annual mean | 31.12.2003 |
| Carbon Monoxide | 10.0 mg/m3 | Running 8-Hour mean | 31.12.2003 |

# Actions to Improve Air Quality

|  |
| --- |
| **INSTRUCTIONS**  If an AQMA has been declared and an AQAP has been published, please provide in this section details on progress made to implement each of the AQAP measures. If no AQMA has been declared, but an Air Quality Strategy or other document has been prepared, you should link to the relevant document(s). If action on air quality is being addressed through other plans e.g. Local Transport Plans or climate change strategies, please indicate here with links and any progress.  Please provide further information below the table including:   * Key actions completed, in progress or planned since last year, and outcomes in terms on benefits for air quality * Any difficulties encountered / why measures have not been progressed * Forecast progress up to next year’s Annual Progress Report   **Delete this box when the document is finished** |

## 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 months, setting out measures it intends to put in place in pursuit of the objectives.

Amend the following as necessary:

A summary of AQMAs declared by <Local Authority Name> can be found in Table 2.1. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at <insert accessible hyperlink to local authority’s AQMA webpage – this should look like https://uk-air.defra.gov.uk/aqma/local-authorities?la\_id=xxx– see full list at [https://uk-air.defra.gov.uk/aqma/list](http://uk-air.defra.gov.uk/aqma/list)>.

Or:

<Local Authority Name> currently does not have any AQMAs. <insert reference to air quality strategy or similar document>

Add text if necessary: We propose to declare a new AQMA in <x> area (see monitoring section). We propose to amend <AQMA Name> (see monitoring section). We propose to revoke <AQMA Name> (see monitoring section).

Table 2.1 – Declared Air Quality Management Areas

| **AQMA Name** | **Pollutants and Air Quality Objectives** | **City / Town** | **Description** | **Action Plan** |
| --- | --- | --- | --- | --- |
| AQMA Name 1 | NO2 annual mean  PM10 24-hour mean | Name | An area encompassing a number of properties at the junction of road 1 and road 2. | Name and Link to Action Plan |
| AQMA Name 2 | NO2 annual mean | Name | Residential properties along road name 1. The AQMA was further extended in April 2013 to include road name 2. | Name and Link to Action Plan |
| AQMA Name 3 | SO2 1-hour mean | Name | An area encompassing residential properties near <industrial facility> | Name and Link to Action Plan |

## Cleaner Air for Scotland

|  |
| --- |
| **INSTRUCTIONS**  This section should include a report on progress against any ‘Cleaner Air for Scotland’ actions relevant to your Local Authority.  There are two mandatory actions which will require commentary, as sub-headed below. Any further actions which the Local Authority wishes to provide evidence of should also be included.  **Delete this box when the document is finished** |

Cleaner Air for Scotland – The Road to a Healthier Future (CAFS) is a national cross-government strategy that sets out how the Scottish Government and its partner organisations propose to reduce air pollution further to protect human health and fulfil Scotland’s legal responsibilities as soon as possible. A series of actions across a range of policy areas are outlined, a summary of which is available on [the Scottish Government’s website.](https://www.gov.scot/Publications/2015/11/5671/17) Progress by <Local Authority Name> against relevant actions within this strategy is demonstrated below.

### Transport – Avoiding Travel – T1

All local authorities should ensure that they have a corporate travel plan (perhaps within a carbon management plan) which is consistent with any local air quality action plan. <Local Authority Name> has <insert details of travel plan and any relevant AQAP>.

### Climate Change – Effective co-ordination of climate change and air quality policies to deliver co-benefits – CC2

Scottish Government expects any Scottish local authority which has or is currently developing a Sustainable Energy Action Plan to ensure that air quality considerations are covered. <Local Authority Name> has <insert details of any relevant Sustainable Energy Action Plan>

### <Add commentary on further actions as appropriate>

## Progress and Impacts of Measures to address Air Quality in <Local Authority Name>

<Local Authority Name> has taken forward a number of measures during the current reporting year of 2020 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 the air quality Action Plan relating to each AQMA <insert names of other plans or strategies if appropriate>. Key completed measures are: <set out bullet of main measures below and any key outcomes from these – keep text brief>.

Delete as appropriate: Progress on the following measures has been slower than expected due to: <insert any explanation>.

<Local Authority Name> expects the following measures to be completed over the course of the next reporting year: <set out measures and brief explanation of expected impact of these measures>.

|  |
| --- |
| **INSTRUCTIONS**  Please fill in the table below. The “Category” column should be populated with one of the following options, to be consistent with the UK and Zonal Air Quality Plans:   * Alternatives to private vehicle use * Environmental permits * Freight and delivery management * Policy guidance and development control * Promoting low emission plants * Promoting low emission transport * Promoting travel alternatives * Public information * Transport planning and infrastructure * Traffic management * Vehicle fleet efficiency   **Delete this box when the document is finished** |

Table 2.2 – Progress on Measures to Improve Air Quality

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Measure No. | Measure | Category | Focus | Lead Authority | Planning Phase | Implementation Phase | Key Performance Indicator | Target Pollution Reduction in the AQMA | Progress to Date | Estimated Completion Date | Comments |
| 1 | Title | Select from the 9 categories in blue box | Description of Measure | Name of Council department(s) with responsibility for action implementation | Date | Date | . | Anticipated reduction in concentration, based on the result of quantitative appraisal (using dispersion modelling and/or screening tools) |  | Comments relating to target pollution reductions (link to Action Plan for more details | Date |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

# Air Quality Monitoring Data and Comparison with Air Quality Objectives

## Summary of Monitoring Undertaken

|  |
| --- |
| **INSTRUCTIONS**  Please include a brief summary of monitoring data in this section, with an explanation of any changes in the past 12 months and if those changes have led to the declaration of an AQMA, decision to amend or revoke an AQMA, or appropriate local strategy. Also include the level of exceedance in comparison with national objectives where relevant. The tabular details should be supplied in an Appendix and/or link.  If changes have led to a decision to declare an AQMA, please indicate whether you are moving to immediate declaration or whether you have decided to seek additional evidence before declaration; and indicate what that is and timescales (taking into account LAQM guidance).  If any change to your monitoring strategy has been made during the past 12 months or is planned, briefly set out here and explain why.  **Delete this box when the document is finished** |

### Automatic Monitoring Sites

This section sets out what monitoring has taken place and how local concentrations of the main air pollutants compare with the objectives.

<Local Authority Name> undertook automatic (continuous) monitoring at <X> sites during 2020. Table A.1 in [Appendix A](#_Appendix_A:_Monitoring) shows the details of the sites. National monitoring results are available at <please insert link>.

Maps showing the location of the monitoring sites are provided in <Appendix X/ or link>. Further details on how the monitors are calibrated and how the data has been adjusted are included in [Appendix C](#_Appendix_C:_Supporting).

### Non-Automatic Monitoring Sites

<Local Authority Name> undertook non- automatic (passive) monitoring of NO2 at <X> sites during 2020. Table A.2 in [Appendix A](#_Appendix_A:_Monitoring) shows the details of the sites.

Maps showing the location of the monitoring sites are provided in <Appendix X/ or link>. Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in [Appendix C](#_Appendix_C:_Supporting).

## Individual Pollutants

|  |
| --- |
| **INSTRUCTIONS**  You should include any trend data from previous years in an Appendix, showing any increasing or decreasing trends (five years data is usually considered the minimum necessary to identify a significant trend). Charts should be presented using a colour-blind friendly palette and Alt text would need to be added to each chart to ensure compliance with Accessibility Regulations.  Any apparent trends in this data should be discussed.  **Delete this box when the document is finished** |

The air quality monitoring results presented in this section are, where relevant, adjusted for annualisation and bias. Further details on adjustments are provided in [Appendix C](#_Appendix_C:_Supporting).

### Nitrogen Dioxide (NO2)

|  |
| --- |
| **INSTRUCTIONS**  Comment on whether there are exceedances of the air quality objectives for NO2 and whether they occur within or outside AQMAs.  If a concentration is above or within 10% of the annual mean air quality objective for NO2 but was measured at a monitoring site which is not representative of public exposure, please use the procedure specified in Chapter 7: Fall-off in NO2 Concentrations with Distance from the Road of the [Technical Guidance LAQM.TG16](https://laqm.defra.gov.uk/technical-guidance/index.html)LAQM.TG16 to estimate the concentration at the nearest receptor, and discuss these results.  To help with consistency of approach to processing diffusion tube monitoring data a specific [Diffusion Tube Data Processing Tool](https://laqm.defra.gov.uk/tools-monitoring-data/DTDP.html) has been developed which should be used to process all diffusion tube data. The tool has been developed to calculate annual mean concentrations for the diffusion tube monthly data entered and amalgamates the following individual LAQM processing tools:   * Annualisation tool; * Precision and accuracy tool – calculation of local bias; and * NO2 fall off with distance calculator.   Monitoring data should be included in Table A.3 and in Table A.4 [Appendix A](#_Appendix_A:_Monitoring). **Ensure the Site IDs match those provided in Table A.1 and Table A.2.**  Note the entered monitored values in Table A.3 should be those at the location of the monitoring site (bias adjusted and annualised, as required), not those following any fall off with distance correction.  You should state whether the information led to the declaration of an AQMA, including the main points/trends coming out of the data – e.g. where are the exceedances or areas of concern?  If you don’t monitor NO2, please provide a statement to this effect.  **Delete this box when the document is finished** |

Table A.3 in [Appendix A](#_Appendix_A:_Monitoring) compares the ratified and adjusted monitored NO2 annual mean concentrations for the past five years with the air quality objective of 40 µg/m3.

For diffusion tubes, the full 2020 dataset of monthly mean values is provided in [Appendix B](#_Appendix_B:_Full).

Table A.4 in [Appendix A](#_Appendix_A:_Monitoring) compares the ratified continuous monitored NO2 hourly mean concentrations for the past five years with the air quality objective of 200µg/m3, not to be exceeded more than 18 times per year. Briefly describe the exceedances of the air quality objectives here, considering annual means greater than 60µg/m3, which indicates that an exceedence of the 1-hour mean objective is also likely at these sites.

### Particulate Matter (PM10)

|  |
| --- |
| **INSTRUCTIONS**  Comment on whether there are exceedances of the air quality objectives for PM10 and whether they occur within or outside AQMAs.  Also flag if there are concentrations above the air quality objectives for PM10 measured at monitoring sites which are not representative of public exposure.  Monitoring data should be included in Table A.5 and Table A.6 in [Appendix A](#_Appendix_A:_Monitoring). **Ensure the Site IDs match those provided in Table A.1.**  You should state whether the information led to the declaration of an AQMA, including the main points/trends coming out of the data, e.g. where are the exceedances or areas of concern?  If you don’t monitor PM10, please provide a statement to this effect.  **Delete this box when the document is finished** |

Table A.5 in [Appendix A](#_Appendix_A:_Monitoring) compares the ratified and adjusted monitored PM10 annual mean concentrations for the past five years with the air quality objective of 18µg/m3.

Table A.6 in [Appendix A](#_Appendix_A:_Monitoring) compares the ratified continuous monitored PM10 daily mean concentrations for the past five years with the air quality objective of 50µg/m3, not to be exceeded more than seven times per year.

Briefly describe the exceedances of the air quality objectives here.

### Particulate Matter (PM2.5)

|  |
| --- |
| **INSTRUCTIONS**  Comment on whether there are exceedances of the air quality objectives for PM2.5 and whether they occur within or outside AQMAs.  Also flag if there are concentrations above the air quality objectives for PM2.5 measured at monitoring sites which are not representative of public exposure.  Monitoring data should be included in Table A.7 in [Appendix A](#_Appendix_A:_Monitoring). Ensu**re the Site IDs match those provided in Table A.1.**  You should state whether the information will lead to the declaration of an AQMA, including the main points/trends coming out of the data, e.g. where are the exceedances or areas of concern?  If you don’t currently monitor PM2.5 but have plans to do so in the future, please set out the details here.  If you don’t currently monitor PM2.5 and have no plans to do so in the future, please provide a statement to this effect.  **Delete this box when the document is finished** |

Table A.7 in [Appendix A](#_Appendix_A:_Monitoring) compares the ratified and adjusted monitored PM2.5 annual mean concentrations for the past five years with the air quality objective of 10µg/m3.

### Sulphur Dioxide (SO2)

|  |
| --- |
| **INSTRUCTIONS**  If SO2 monitoring is available then provide a table of results.  If you don’t monitor SO2, please provide a statement to this effect.  Comment on whether there are exceedances of the air quality objectives for SO2 and whether they occur within or outside AQMAs.  Flag if there are concentrations above the air quality objectives for SO2 measured at monitoring sites which are not representative of public exposure.  Monitoring data should be included in Table A.8 in [Appendix A](#_Appendix_A:_Monitoring). **Ensure the Site IDs match those provided in Table A.1.**  You should state whether the information led to the declaration of an AQMA, including the main points/trends coming out of the data, e.g. where are the exceedances or areas of concern?  **Delete this box when the document is finished** |

Table A.8 in [Appendix A](#_Appendix_A:_Monitoring) compares the ratified continuous monitored SO2 concentrations for year 2020 with the air quality objectives for SO2.

Discuss exceedances of the air quality objectives here.

### Carbon Monoxide, Lead and 1,3-Butadiene

|  |
| --- |
| **INSTRUCTIONS**  You should confirm whether any monitoring has been undertaken for these pollutants and whether any changes have occurred in their status since submission of the previous report.  Delete this box when the document is finished |

# New Local Developments

|  |
| --- |
| **INSTRUCTIONS**  This section should deal with any new developments in the Local Authority area that may affect air quality. Please refer to Chapter 3 of LAQM.TG16 for further information.  If an air quality assessment has been carried out (e.g. as part of an Environmental Statement) for a new development, please summarise the outcome, and provide a reference to the assessment.  If sufficient information is available to clearly identify a risk of exceedance of an AQS objective at this stage, then the Local Authority should take action accordingly.  If there are no such developments, then there is no need to proceed further with this part. Please state this explicitly in the report if this is the case.  **Delete this box when the document is finished** |

Start writing here…

## Road Traffic Sources

|  |
| --- |
| **INSTRUCTIONS**  Please identify any of the following which are new:   * Narrow congested streets with residential properties close to the kerb. * Busy streets where people may spend one hour or more close to traffic. * Roads with a high flow of buses and/or HGVs. * Junctions. * New roads constructed or proposed * Roads with significantly changed traffic flows. * Bus or coach stations.   If there are none of the above, please state this explicitly in the report.  **Delete this box when the document is finished** |

Start writing your supporting text on new/newly identified road traffic sources here…

## Other Transport Sources

|  |
| --- |
| **INSTRUCTIONS**  Please identify any of the following which are new:   * Airports. * Locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m. * Locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m. * Ports for shipping.   If there are none of the above, please state this explicitly in the report.  **Delete this box when the document is finished** |

Start writing here…

## Industrial Sources

|  |
| --- |
| **INSTRUCTIONS**  Please identify any of the following which are new:   * **Industrial installations**: new or proposed installations for which an air quality assessment has been carried out. * **Industrial installations**: existing installations where emissions have increased substantially or new relevant exposure has been introduced. * **Industrial installations**: new or significantly changed installations with no previous air quality assessment. * Major fuel storage depots storing petrol. * Petrol stations. * Poultry farms.   If there are none of the above, please complete state this explicitly in the report.  **Delete this box when the document is finished** |

Start writing here…

## Commercial and Domestic Sources

|  |
| --- |
| **INSTRUCTIONS**  Please identify any of the following which are new:   * Biomass combustion plant – individual installations. * Areas where the combined impact of several biomass combustion sources may be relevant. * Areas where domestic solid fuel burning may be relevant. * Combined Heat and Power (CHP) plant.   If there are none of the above, please state this explicitly in the report.  **Delete this box when the document is finished** |

Start writing here…

## New Developments with Fugitive or Uncontrolled Sources

|  |
| --- |
| **INSTRUCTIONS**  Please identify any of the following potential sources of fugitive or uncontrolled particulate matter, which are new:   * Landfill sites. * Quarries. * Unmade haulage roads on industrial sites. * Waste transfer stations, etc. * Other potential sources of fugitive particulate matter emissions.   If there are none of the above, please state this explicitly in the report.  **Delete this box when the document is finished** |

Start writing here…

# Planning Applications

|  |
| --- |
| **INSTRUCTIONS**  This section should discuss any major planning applications under consideration that might affect air quality. Please refer to Chapter 3 of LAQM.TG16 for further information.  This should focus on planning applications that have either been approved. However, this section can also be used to highlight planning applications for new developments which have not yet been approved but which could impact upon air quality, if the Local Authority so desires. This will help give a picture of areas where changes may occur and also where combined impacts of several developments may become important.  **Please delete the whole section if not used and delete this box when the document is finished** |

Start writing here…

# Impact of COVID-19 upon LAQM

|  |
| --- |
| **INSTRUCTIONS**  Completion of this section is encouraged  This Section should be used to highlight and discuss the impacts of COVID-19 upon LAQM and air quality during 2020. Five questions are listed below that where applicable should be answered to help formulate a response:   1. Did your local authority maintain diffusion tube monitoring networks as normal (exposure and analysis in line with diffusion tube calendar) during 2020, including over the lockdown period?    1. If no, over what time period(s) was diffusion tube monitoring impacted? 2. Did your local authority maintain automatic air quality monitoring sites as normal (LSO visits, etc.) during 2020, including over the lockdown period?    1. If no, how and over what time period(s) was automatic monitoring impacted? 3. Did your local authority carry out any low-cost monitoring during 2020, including over the lockdown period?    1. If yes, outline what types of monitoring were carried out and how these have been impacted by the lockdown period. 4. Are there any ongoing issues with your local air quality monitoring network related to the Covid-19 response?    1. If yes, please provide details as to nature of issues and how these will impact air quality monitoring. 5. Please provide any additional information relating to current or planned local air quality monitoring which may be relevant.   Within this Section, it is not expected to repeat any information already presented within the APR, therefore cross-referencing to other Sections of the APR should be utilised. Only a summary of those impacts of COVID 19 upon LAQM considered most significant/key to the local authority should therefore be provided within this section.  The inclusion of this Section is not intended to unduly add to the reporting burden of local authorities at a time when resources are already stretched, therefore please only complete to the level of detail readily available. As a guide, it is suggested that the maximum length of the section should be no more than two pages.  **Delete this box when the document is finished** |

Start writing here…

# Conclusions and Proposed Actions

## Conclusions from New Monitoring Data

|  |
| --- |
| **INSTRUCTIONS**  For example, exceedances identified, within and outside of existing AQMAs. Cases where exceedances was previously suspected but monitoring has confirmed that the AQS Objective is met. Significant trends.  Has monitoring identified any potential or actual exceedances at relevant locations outside existing AQMAs?  Are all monitoring results within AQMAs below the air quality objective, such that it may be appropriate to revoke the AQMA?  In both of these cases a Detailed Assessment would be required.  **Delete this box when the document is finished** |

Start writing here…

## Conclusions relating to New Local Developments

|  |
| --- |
| **INSTRUCTIONS**  Summary of new local developments that have required consideration  In particular, do any of these have potential to introduce new exceedances of relevant objectives, or exaserbate existing ones?  **Delete this box when the document is finished** |

Start writing here…

## Proposed Actions

|  |
| --- |
| **INSTRUCTIONS**  This concluding section should clearly summarise how the Local Authority intends to proceed in the future.   * Has the new monitoring data identified any new exceedances of the objectives for any pollutant? If so, which pollutant(s) and objectives, and where? If not, state explicitly that this is the case. * Has the new monitoring data identified any need for additional monitoring, or changes to the existing monitoring programme (e.g. re-location of sites)? * Are changes required to any existing AQMAs – for example should their boundaries be changed or can they be revoked? * Details of proposed dates of completion of any other outstanding LAQM Tasks such as outstanding AQMA declarations. * What is your next course of action? * Submit next Air Quality Annual Progress Report * New AQMA declaration * Implementation of Action Plan measures   **Delete this box when the document is finished** |

Start writing here…

# Appendix A: Monitoring Results

Table A. – Details of Automatic Monitoring Sites

| **Site ID** | **Site Name** | **Site Type** | **X OS Grid Ref** | **Y OS Grid Ref** | **Pollutants Monitored** | **In AQMA? Which AQMA?** | **Monitoring Technique** | **Distance to Relevant Exposure (m) (1)** | **Distance to kerb of nearest road (m) (2)** | **Inlet Height (m)** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CM1 | Name1 | Roadside | 332395 | 433175 | NO2; PM10 | YES AQMA 1 | Chemiluminescent; FDMS | 5 | 3 | 1.5 |
| CM2 | Name2 | Urban background | 332200 | 433540 | NO2 | NO AQMA 2 | Chemiluminescent | 0 | N/A | 1.5 |
|  |  |  |  |  |  |  |  |  |  |  |

**Notes:**

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. – Details of Non-Automatic Monitoring Sites

|  |
| --- |
| **INSTRUCTIONS**  To help with consistency of approach to processing diffusion tube monitoring data a specific [Diffusion Tube Data Processing Tool](https://laqm.defra.gov.uk/tools-monitoring-data/DTDP.html) has been developed. It is recommended that this new tool is used to process all diffusion tube data.  The tool is available for download from the [LAQM website](https://laqm.defra.gov.uk/tools-monitoring-data/DTDP.html). Any questions relating to the use of the tool should be directed to the LAQM Helpdesk.  The tab Table A.2 from the new Diffusion Tube Data Processing Tool aligns with the diffusion tube data reporting requirements of Table A.2; therefore the data can be easily copied. If the Diffusion Tube Data Processing Tool has not been utilised, please copy across from any alternative calculation spreadsheet or populate manually.  **Delete this box when the document is finished** |

| **Site ID** | **Site Name** | **Site Type** | **X OS Grid Ref** | **Y OS Grid Ref** | **Pollutants Monitored** | **In AQMA? Which AQMA?** | **Distance to Relevant Exposure (m) (1)** | **Distance to kerb of nearest road (m) (2)** | **Tube co-located with a Continuous Analyser?** | **Tube Height (m)** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| DT1 | Name1 | Roadside | 332395 | 433175 | NO2 | YES AQMA 1 | 1 | 3 | Y | 2.5 |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |

**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. – Annual Mean NO2 Monitoring Results (µg/m3)

| **Site ID** | **Site Type** | **Monitoring Type** | **Valid Data Capture for Monitoring Period (%) (1)** | **Valid Data Capture 2020 (%) (2)** | **2016** | **2017** | **2018** | **2019** | **2020** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CM1 | Roadside | Automatic | 95 | 95 | **61.0** | 48.1 | 44.1 | 43.2 | 35.1 |
| CM2 | Urban Background | Automatic | 100 | 50 | 27.0 | 28.2 | 31.5 | 27.8 | 30.2 |
| DT1 | Roadside | Diffusion Tube | 75 | 75 | **61.0** | 48.1 | 44.1 | 43.2 | 35.1 |
|  |  |  |  |  |  |  |  |  |  |

**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**.

Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per LAQM.TG(16) if valid data capture for the full calendar year is less than 75%. See [Appendix C](#_Appendix_C:_Supporting) for details.

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%).

Table A. – 1-Hour Mean NO2 Monitoring Results, Number of 1-Hour Means > 200µg/m3

| **Site ID** | **Site Type** | **Monitoring Type** | **Valid Data Capture for Monitoring Period (%) (1)** | **Valid Data Capture 2020 (%) (2)** | **2016** | **2017** | **2018** | **2019** | **2020** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CM1 | Roadside | Automatic | 95 | 95 | **19** | 11 | 12 | 15 | 20 |
| CM2 | Urban Background | Automatic | 80 | 80 | - | - | - | **22 (235**) | 16 (185) |

**Notes:**

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

If the period of valid data is less than 85%, the 99.8th percentile of 1-hour means is provided in brackets.

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%).

Table A. – Annual Mean PM10 Monitoring Results (µg/m3)

| **Site ID** | **Site Type** | **Valid Data Capture for Monitoring Period (%) (1)** | **Valid Data Capture 2020 (%) (2)** | **2016** | **2017** | **2018** | **2019** | **2020** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CM1 | Roadside | 95 | 95 | **61.0** | **48.1** | **44.1** | **43.2** | **35.1** |
| CM2 | Urban Background | 100 | 50 | 14.0 | 12.5 | 13.4 | 10.5 | 10.6 |
|  |  |  |  |  |  |  |  |  |

**Notes:**

Exceedances of the PM10 annual mean objective of 18 µg/m3 are shown in bold.

All means have been “annualised” as per LAQM.TG(16), valid data capture for the full calendar year is less than 75%. See [Appendix C](#_Appendix_C:_Supporting) for details.

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%).

Table A. – 24-Hour Mean PM10 Monitoring Results, Number of PM10 24-Hour Means > 50µg/m3

| **Site ID** | **Site Type** | **Valid Data Capture for Monitoring Period (%) (1)** | **Valid Data Capture 2020 (%) (2)** | **2016** | **2017** | **2018** | **2019** | **2020** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CM1 | Roadside | 95 | 95 | **15** | **12** | **20** | **16** | **8** |
| CM2 | Urban Background | 100 | 50 | 2 | 0 | 1 | **2 (55)** | 8 (35) |

**Notes:**

Exceedances of the PM10 24-hour mean objective (50 µg/m3 not to be exceeded more than seven times/year) are shown in bold.

If the period of valid data is less than 85%, the 98.1st percentile of 24-hour means is provided in brackets.

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%).

Table A. – Annual Mean PM2.5 Monitoring Results (µg/m3)

| **Site ID** | **Site Type** | **Valid Data Capture for Monitoring Period (%) (1)** | **Valid Data Capture 2020 (%) (2)** | **2016** | **2017** | **2018** | **2019** | **2020** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CM1 | Roadside | 95 | 95 | **18.0** | **21.8** | **17.2** | **15.9** | 9.8 |
| CM2 | Urban Background | 100 | 50 | 7.6 | 7.8 | 6.5 | 4.5 | 9.2 |
|  |  |  |  |  |  |  |  |  |

**Notes:**

Exceedances of the PM2.5 annual mean objective of 10 µg/m3 are shown in bold.

All means have been “annualised” as per LAQM.TG(16), valid data capture for the full calendar year is less than 75%. See [Appendix C](#_Appendix_C:_Supporting) for details.

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%).

Table A. – SO2 2020 Monitoring Results, Number of Relevant Instances

| **Site ID** | **Site Type** | **Valid Data Capture for monitoring Period (%) (1)** | **Valid Data Capture 2020 (%) (2)** | **Number of 15-minute Means > 266 µg/m** | **Number of 1-hour Means > 350 µg/m** | **Number of 24-hour Means > 125 µg/m** |
| --- | --- | --- | --- | --- | --- | --- |
| CM1 | Roadside | 98 | 94 | 4 | 1 | 0 |
| CM2 | Urban Background | 100 | 50 | 0 | 0 | 0 |

**Notes:**

Exceedances of the SO2 objectives are shown in bold (15-min mean = 35 allowed a year, 1-hour mean = 24 allowed a year, 24-hour mean = 3 allowed a year)

If the period of valid data is less than 85%, the relevant percentiles are provided in brackets (15-Minute means: 99.9th percentile, 1-hour means: 99.7th percentile, 24-hour means: 99.2nd percentile).

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%).

# Appendix B: Full Monthly Diffusion Tube Results for 2020

Table B. – NO2 2020 Monthly Diffusion Tube Results (µg/m3)

| **Site ID** | **Jan** | **Feb** | **Mar** | **Apr** | **May** | **Jun** | **Jul** | **Aug** | **Sep** | **Oct** | **Nov** | **Dec** | **Annual Mean: Raw Data** | **Annual Mean: Bias Adjusted (1)** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| DT1 | 26.2 | 42.1 | - | - | 28.2 | 35.3 | - | 26.3 | 31.5 | 38.4 | 45.2 | 41.5 | 35.0 | 40.2 |
| DT2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Notes:**

1. See [Appendix C](#_Appendix_C:_Supporting) for details on bias adjustment

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

|  |
| --- |
| **INSTRUCTIONS**  Please include here any additional information required to support the APR. This may include:   * If necessary, any screening assessment of identified new or changed sources of pollution based on DMRB, industrial nomograms, biomass tools, etc – see Chapter 7 in LAQM.TG16 * A summary of any additional studies/evidence for support of action plan measures, detailed dispersion modelling of emissions, or results of monitoring campaigns carried out to determine whether an AQMA needs to be declared, amended or revoked. Any additional studies should be included as a further Appendix to the annual report. * QA/QC on monitoring data, including bias adjustments, annualisation and fall-off with distance correction, as appropriate:   + Discussion and justification on the choice of bias adjustment factor applied for diffusion tubes (i.e. local vs national), with reference to previous years’ choices of bias factors, giving due consideration to the discussion in Chapter 7 of [Technical Guidance LAQM.TG16](https://laqm.defra.gov.uk/technical-guidance/index.html).   + Discussion on the annualisation process, which is provided in Chapter 7 of [Technical Guidance LAQM.TG16](https://laqm.defra.gov.uk/technical-guidance/index.html).   + Details of distance correction using the diffusion tube data processing/ NO2 fall off with distance calculator as discussed in Chapter 7 of [Technical Guidance LAQM.TG16](https://laqm.defra.gov.uk/technical-guidance/index.html). **Distance correction is an important point to consider if your monitoring sites are not representative of public exposure, e.g. if located at roadside or kerbside, but with façades of nearest properties set back further from the road.** * Please include calculations within the tables provided as found within the relevant LAQM tools; particularly regarding bias adjustments, annualisation and fall-off with distance correction, where appropriate. **Failure to provide clear and auditable details is likely to result in the rejection of the report.**   **Delete this box when the document is finished** |

## New or Changed Sources Identified Within <Local Authority Name> During <Year>

Detail any new sources within your authority that have been identified with a potential to impact air quality. This may include sources that are operational, have planning permission granted or have been identified at an earlier stage of the planning process. Sources may include additional road traffic, static or standby plant, biomass or industrial processes, etc.

Or:

<Local Authority Name> has not identified any new sources relating to air quality within the reporting year of <Year>.

## Additional Air Quality Works Undertaken by <Local Authority Name> During <Year>

Provide a summary of any supporting evidence or additional studies that has been completed during the reporting year relating to the development of action plan measures or the declaration, amendment or revocation of an AQMA. If an additional study has been completed, please provide the report as an additional appendix.

Or:

<Local Authority Name> has not completed any additional works within the reporting year of <Year>.

## QA/QC of Diffusion Tube Monitoring

Within this section provide details relating to the following aspects of non-automatic (i.e. passive) monitoring using diffusion tubes:

* The supplier used for diffusion tubes within 2020 and the method of preparation, e.g. 20% TEA in water;
* Information on the diffusion tube supplier; any accreditation held, analysis procedure followed, participation in analysis schemes (e.g. AIR-PT) and most recent results, inclusion in the annual field inter-comparison exercise and associated result;
* If the diffusion tube supplier has been changed part way through the year (if so provide the previous two points for both suppliers);
* State whether or not the monitoring has been completed in adherence with the 2020 Diffusion Tube Monitoring Calendar, providing commentary of any divergences as necessary.

The additional subsections should be used to provide QA/QC details of the data processing methodologies applied to diffusion tube monitoring data, specifically in relation to annualisation, bias adjustment and fall-off-with-distance calculations.

If you do not undertake diffusion tube monitoring, please delete this section.

### Diffusion Tube Annualisation

If annualisation was required for any non-automatic monitoring sites, the sites requiring annualisation should be clearly defined along with details of the calculation method undertaken provided in Table C.2. Annualisation is required for any site with data capture less than 75% but greater than 25%.

Or:

All diffusion tube monitoring locations within <Local Authority Name> recorded data capture of 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualisation.

### Diffusion Tube Bias Adjustment Factors

<Local Authority Name> have applied a <national/local> bias adjustment factor of <insert factor> to the <Year> monitoring data. A summary of bias adjustment factors used by <Local Authority Name> over the past five years is presented in Table C.1.

Provide discussion in relation to the bias adjustment factor chosen; a national factor or a local factor.

* If a national factor has been used, please state as per Table C.1 which version of the national spreadsheet the factor has been taken from and also the number of studies applicable to the factor.
* If a local factor has been used, please advise at which site(s) the co-location study has been completed at and present the details in Table C.2.
* If more than one co-location study has been utilised to derive a local factor, please provide the calculations that have been completed within the body of text. These should be completed in line with guidance provided within LAQM.TG16 Chapter 7: NOx and NO2 Monitoring, NO2 by Diffusion Tubes.

Table C. – Bias Adjustment Factor

|  |
| --- |
| **INSTRUCTIONS**  Please complete the following table detailing the bias adjustment factors used to adjust the diffusion tube monitoring data. If a national factor has been used, please detail the Spreadsheet Version that has been used (detailed in the top-right corner of each revision of the spreadsheet). If a local factor has been derived, please leave this column blank or insert a dash (-).  The national adjustment spreadsheet is available from <https://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html>  **Delete this box when the document is finished** |

|  |  |  |  |
| --- | --- | --- | --- |
| Year | Local or National | If National, Version of National Spreadsheet | Adjustment Factor |
| 2020 | Local | - | 0.88 |
| 2019 | National | 09/20 | 1.01 |
| 2018 | National | 06/19 | 1.05 |
| 2017 | National | 09/18 | 1.07 |
| 2016 | National | 06/17 | 1.08 |

### NO2 Fall-off with Distance from the Road

If fall-off-with-distance calculations were required for any non-automaticmonitoring sites, a summary of the sites should be provided here and the output data from the LAQM NO2 fall-off with distance calculator, or output from the Diffusion Tube Data Processing Tool should be presented in Table C.4. Distance correction should be considered at any monitoring site where the annual mean concentration is greater than 36µg/m3 and the monitoring site is not located at a point of relevant exposure (taking the limitations of the calculator into account).

Or:

No diffusion tube NO2 monitoring locations within <Local Authority Name> required distance correction during <Year>.

## QA/QC of Automatic Monitoring

Within this section details relating to the following should be included:

* Who completes the data management and Local Site Operator (LSO) duties for any automatic monitoring sites within the authority;
* Details on the frequency of calibrations, audit/servicing;
* Ratification process, and if the monitoring data presented within the APR is provisional or ratified;
* If live/historic data is available through a website.

### PM10 and PM2.5 Monitoring Adjustment

If PM10/PM2.5 monitoring is completed within your authority, where applicable please detail any correction factors applied to the data before it is published (e.g. using the Volatile Correction Model (VCM) or a specific correction factor). Correction factors as detailed within LAQM.TG16 Chapter 7: Particulate Matter Monitoring.

Or:

The type of <PM10/PM2.5> monitor(s) utilised within <Local Authority Name> do not required the application of a correction factor.

Please delete this section if no PM10/PM2.5 monitoring is not completed within your authority.

### Automatic Monitoring Annualisation

If annualisation was required for any automatic monitoring sites a summary of the sites should be provided here and the annualisation data should be presented in Table C.2. Annualisation is required for any site with data capture less than 75% but greater than 25%.

Or:

All automatic monitoring locations within <Local Authority Name> recorded data capture of greater than 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualisation.

Please delete this section if no automatic monitoring is completed within your authority.

### NO2 Fall-off with Distance from the Road

If fall-off-with-distance calculations were required for automaticmonitoring sites, a summary of the sites should be provided here and the output data from the LAQM NO2 fall-off with distance calculator should be presented in Table C.4. Distance correction should be considered at any monitoring site where the annual mean concentration is greater than 36µg/m3 and the monitoring site is not located at a point of relevant exposure (taking the limitations of the calculator into account).

Or:

No automatic NO2 monitoring locations within <Local Authority Name> required distance correction during <Year>.

|  |
| --- |
| **INSTRUCTIONS**  The structure of the following QA/QC tables are consistent with those output by the new [Diffusion Tube Data Processing Tool](https://laqm.defra.gov.uk/tools-monitoring-data/DTDP.html). It is therefore recommended that this tool is used to aid transparency of calculations and associated QA/QC pertaining to the processing of diffusion tube data.  However, it is acknowledged that not all local authorities will initially use the new processing tool due to having many years of experience in processing the data within their authority using existing LAQM tools and methods. This also includes automatic monitoring data, for which the Diffusion Tube Data Processing Tool does not currently support. Therefore, in these instances please align these tables to present equivalent details, text and/or tabulated data, to support any calculations completed.  If you have any queries relating to the data that you should present, please contact the LAQM Helpdesk.  **Delete this box when the document is finished** |

Table C. – Annualisation Summary (concentrations presented in µg/m3)

|  |
| --- |
| **INSTRUCTIONS**  Both automatic and non-automatic annualisation results should be included within Table C.2.  For diffusion tube annualisation the [Annualisation Tool](https://laqm.defra.gov.uk/tools-monitoring-data/annualisation.html) or the [Diffusion Tube Data Processing Tool](https://laqm.defra.gov.uk/tools-monitoring-data/DTDP.html) can be used to complete annualisation. Either tool should be used to ensure the correct methodology for annualisation is utilised. Table C.2 has the same structure as the **Annualisation Summary** tab within both tools, therefore the required data can easily be copied.  If a LAQM tool has not been used for diffusion tube annualisation, please enter the relevant data into the table below or replace this table with one presenting the relevant details for annualisation.  Currently there is no LAQM tool to process annualisation for automatic monitoring, therefore guidance as per Chapter 7: NOx and NO2 Monitoring of the [Technical Guidance LAQM.TG16](https://laqm.defra.gov.uk/technical-guidance/index.html) should be followed and the results presented within Table C.2.  If less than four background sites have been used to annualise, the relevant boxes can be left blank or a dash added (-). Any relevant comments should be added within the Comments column.  This table should be deleted if annualisation has not been required at any site.  **Delete this box when the document is finished** |

| Site ID | Annualisation Factor Site 1 Name | Annualisation Factor Site 2 Name | Annualisation Factor Site 3 Name | Annualisation Factor Site 4 Name | Average Annualisation Factor | Raw Data Annual Mean | Annualised Annual Mean | Comments |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| DT1 |  |  |  |  |  |  |  |  |
| DT2 |  |  |  |  |  |  |  |  |

Table C. – Local Bias Adjustment Calculations

|  |
| --- |
| **INSTRUCTIONS**  Please complete Table C.3 if a local bias adjustment factor has been calculated.  For the calculation of a local bias adjustment factor the [AEA\_DifTPAN\_c04.xls](https://laqm.defra.gov.uk/bias-adjustment-factors/local-bias.html) or the [Diffusion Tube Data Processing Tool](https://laqm.defra.gov.uk/tools-monitoring-data/DTDP.html) can be used to complete the calculations. Either tool should be used to ensure the correct methodology for bias calculation is utilised. Table C.3 has the same structure as the **Local Bias Adjustment Outputs** tab within the LAQM Diffusion Tube Data Processing Tool, therefore the required data can be easily copied. If the [AEA\_DifTPAN\_c04.xls](https://laqm.defra.gov.uk/bias-adjustment-factors/local-bias.html) has been utilised, please enter the relevant data into Table C.3. Alternatively, replace this table with one presenting the equivalent data of the local bias calculation and consider adding a screenshot of the completed **Prevision & Accuracy** tab for clarity.  If a local factor from more than one local co-location study has been calculated without utilising the Diffusion Tube Data Processing Tool, guidance to average the bias B values as per Chapter 7: NOx and NO2 Monitoring of the [Technical Guidance LAQM.TG16](https://laqm.defra.gov.uk/technical-guidance/index.html) should be followed.  The table has been set up to take account of a maximum of five local co-location studies. If less than five sites have been utilised the relevant boxes can be left blank or a dash added (-). If more than five sites have been utilised, please add any additional columns to the table.  This table should be deleted if a local bias adjustment factor has not been calculated.  **Delete this box when the document is finished** |

|  | Local Bias Adjustment Input 1 | Local Bias Adjustment Input 2 | Local Bias Adjustment Input 3 | Local Bias Adjustment Input 4 | Local Bias Adjustment Input 5 |
| --- | --- | --- | --- | --- | --- |
| **Periods used to calculate bias** | 12 |  |  |  |  |
| **Bias Factor A** | 1.13 (1.06 – 1.21) |  |  |  |  |
| **Bias Factor B** | -12% (-17% - -6%) |  |  |  |  |
| **Diffusion Tube Mean (µg/m3)** | 30.9 |  |  |  |  |
| **Mean CV (Precision)** | 0.0% |  |  |  |  |
| **Automatic Mean (µg/m3)** | 35.0 |  |  |  |  |
| **Data Capture** | 100% |  |  |  |  |
| **Adjusted Tube Mean (µg/m3)** | 35 (33 – 37) |  |  |  |  |

Notes:

A single local bias adjustment factor has been used to bias adjust the 2020 diffusion tube results.

Or:

A combined local bias adjustment factor of <enter combined factor> has been used to bias adjust the 2020 diffusion tube results.

Table C. – NO2 Fall off With Distance Calculations (concentrations presented in µg/m3)

|  |
| --- |
| **INSTRUCTIONS**  Both automatic and non-automatic distance corrected results can be included within Table C.4.  For distance correction of NO2 monitoring the [NO2 Fall-Off with Distance Calculator](https://laqm.defra.gov.uk/tools-monitoring-data/no2-falloff.html) or the [Diffusion Tube Data Processing Tool](https://laqm.defra.gov.uk/tools-monitoring-data/DTDP.html) can be used to complete the calculations. Either tool should be used to ensure the correct methodology for NO2 concentration fall off is utilised. Table C.4 has the same structure as the output tabs as follows, therefore the required data can easily be copied:   * NO2 Fall-Off with Distance Calculator – **Calculator - Multiple Tubes** * Diffusion Tube Data Processing Tool – **Step 4 - Fall off with Distance**   The Limitations / Important Notes tab within the calculator should be referred to ensure only relevant sites are included within the calculator. Please ensure the correct distances are utilised within the calculator:  Any comments output from the calculator should be added within the Comments column.  This table should be deleted if distance correction has not been completed at any site.  **Delete this box when the document is finished** |

| Site ID | Distance (m): Monitoring Site to Kerb | Distance (m): Receptor to Kerb | Monitored Concentration (Annualised and Bias Adjusted | Background Concentration | Concentration Predicted at Receptor | Comments |
| --- | --- | --- | --- | --- | --- | --- |
| DT1 |  |  |  |  |  |  |
| DT2 |  |  |  |  |  |  |

# Glossary of Terms

Please add a description of any abbreviation included in the APR – 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 LA 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 |
| APR | Air quality Annual Progress Report |
| AURN | Automatic Urban and Rural Network (UK air quality monitoring network) |
| Defra | Department for Environment, Food and Rural Affairs |
| DMRB | Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England |
| FDMS | Filter Dynamics Measurement System |
| 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 |
| SO2 | Sulphur Dioxide |

# References

|  |
| --- |
| Please provide a list of all documents referred to in the report.  Delete this box when the document is finished |

Start writing here…