



# 2021 Air Quality Annual Status Report (ASR)

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

Date: November 2021

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## Executive Summary: Air Quality in Our Area

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, the elderly, and those with existing heart and lung conditions. There is also often a strong correlation with equalities issues because areas with poor air quality are also often less affluent areas<sup>1,2</sup>.

The mortality burden of air pollution within the UK is equivalent to 28,000 to 36,000 deaths at typical ages<sup>3</sup>, with a total estimated healthcare cost to the NHS and social care of £157 million in 2017<sup>4</sup>.

Air pollution can come from many different sources – traffic, imported air pollution from the Continent, air emissions from shipping, and domestic wood burning. There are also natural sources of air pollution too, such as dust from soils, ash and sea-spray. Burning wood and coal in open fires and stoves makes up 38% of the UK's primary emissions of fine particulate matter (PM<sub>2.5</sub>). Particulates are not a single pollutant; they are made up from a huge variety of chemical compounds and materials. Around 15% of UK PM comes from naturally occurring sources, up to a third from other European countries and around half from UK human-made sources. (Clean Air Strategy 2019, Defra<sup>4</sup>).

Unfortunately, there is no 'quick fix' in regards to air quality. The air is a constantly changing and evolving environment. We may get days when air pollution is higher than others, due to a number of meteorological conditions and chemical reactions occurring in the air. We can receive 'imported' pollution from the Continent and also from sources such as domestic wood burning and shipping. Wind speed, wind direction and the topography of the land mass plays an important part in where air pollution ends up. Particles or particulate matter are extremely small bits of liquid or solid suspended in the air. They can originate from engine emissions, brake and tyre wear, industry and natural sources as

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<sup>1</sup> Public Health England. Air Quality: A Briefing for Directors of Public Health, 2017

<sup>2</sup> Defra. Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

<sup>3</sup> Defra. Air quality appraisal: damage cost guidance, July 2020

<sup>4</sup> Public Health England. Estimation of costs to the NHS and social care due to the health impacts of air pollution: summary report, May 2018

previously mentioned. Very fine particulates (PM<sub>2.5</sub>) can therefore remain in the air for weeks and travel great distances (e.g. from the continent).

## Air Quality in Lewes District Council

There are two Air Quality Management Areas (AQMAs) within the administrative boundary of Lewes District Council (LDC), both of which had been declared due to exceedances of the UK Air Quality Standard value for annual mean Nitrogen dioxide (NO<sub>2</sub>). Full details of these AQMAs can be viewed at: [https://uk-air.defra.gov.uk/aqma/local-authorities?la\\_id=146](https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=146).

The AQMAs cover parts of Lewes Town Centre and Newhaven Ring Road, and were declared in 2005 and 2014, respectively. In 2009 and 2016, Air Quality Action Plans (AQAPs) were put in place for Lewes and Newhaven, respectively, to reduce pollutant emissions and manage air quality monitoring stations established to assess the impact of the measures proposed by the aforementioned action plans.

In 2020, nitrogen dioxide monitoring using diffusion tubes was carried out at 50 measurement sites, positioned in strategic locations throughout the district. No new NO<sub>2</sub> diffusion tube monitoring locations were added to the Council's local air pollution monitoring network in 2020.

Due to the nationwide influence of the COVID-19 pandemic on traffic flows, NO<sub>2</sub> concentrations at all diffusion tube locations were observed to be below the 40µg/m<sup>3</sup> annual mean objective concentration. The highest recorded concentration at any diffusion tube within LDC was at 34.1µg/m<sup>3</sup> (Diffusion Tube 40: Newhaven – The Old Chapel). In 2019, the concentration at this diffusion tube was 44.6µg/m<sup>3</sup>, emphasising the dramatically positive impacts that the COVID-19 pandemic had on NO<sub>2</sub>.

Despite the influence of COVID-19 on the progression of several local air quality management measures, LDC were able to install a new locally-managed automatic monitoring station (LS7) on Lewes Road, Newhaven (within the existing AQMA). The station monitors NO<sub>x</sub>, PM<sub>10</sub> and O<sub>3</sub>. Additionally, consideration is being given to the monitoring of PM<sub>2.5</sub> at this location in the coming year.

Ground level ozone (O<sub>3</sub>) is normally formed when other pollutants including nitrous oxides react in sunlight to form ozone (sometimes leading to a haze/smog); ozone levels are highly dependent on the weather and warm sunny periods can cause a sharp increase in mean levels. Ozone concentrations in the summer months tend to be higher in the south-

east because it is closer to European pollution sources and tends to receive more sunlight than other areas of the country.

Due to the reduction in NO<sub>x</sub> emissions during the COVID-19 pandemic, ozone concentrations were uncharacteristically high throughout 2020. Such trends were identified across much of the [South-East](#), and were also seen at LS7, with a total of 17 exceedances of the O<sub>3</sub> objective (100µg/m<sup>3</sup> as an 8 hour mean, not to be exceeded more than 10 times a year) in its first 8 months of operation.

## Air Quality in Eastbourne Borough Council

Eastbourne Borough Council (EBC) is yet to declare an AQMA within the borough, as currently, and historically, there have been no identified areas within the borough where the UK Air Quality Standards for NO<sub>2</sub> or particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) have been exceeded.

Concentrations of PM<sub>10</sub> recorded at EBC's automatic monitoring stations EB1 (Devonshire Park) and EB3 (Holly Place) have been consistently well below the annual mean and 24-hour mean UK Air Quality Standard values since the commencement of monitoring at these locations. Currently, only one location within the borough measures PM<sub>2.5</sub> concentrations; EB3 (Holly Place), and at this location, recorded annual mean PM<sub>2.5</sub> concentrations have been consistently well below the 25µg/m<sup>3</sup> UK Air Quality Standard value.

Despite no exceedances of the 40µg/m<sup>3</sup> UK Air Quality Standard value being recorded for annual mean concentrations of NO<sub>2</sub>, this pollutant remains the primary pollutant of concern within the borough. In 2019, diffusion tube 15 (109 Whitley Road) recorded an annual mean NO<sub>2</sub> concentration of 39.3µg/m<sup>3</sup> (not distance corrected), which is below the 40µg/m<sup>3</sup> UK AQS by just 1.8%.

Due to the nationwide influence of the COVID-19 pandemic on traffic flows, NO<sub>2</sub> concentrations at all diffusion tube locations were observed to be well below the 40µg/m<sup>3</sup> annual mean objective concentration. The highest recorded concentration at any diffusion tube within EBC was at 26.8µg/m<sup>3</sup> (Diffusion Tube 15), emphasising the dramatically positive impacts that the COVID-19 pandemic had on local NO<sub>2</sub> concentrations.

Overall, measured concentrations of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> have shown a gradual decline in recent years, and are expected to continue this trend due to local, national, and international plans and measures to reduce emissions across all sectors.

Eastbourne also monitors ozone (O<sub>3</sub>) at the Devonshire Park site. The monitor had a data capture rate of 99% (which is classed as adequate data capture and therefore not requiring annualisation). At this monitor in 2020, there were 26 days of moderate ozone, double that of the previous year, which demonstrates the adverse impacts of the COVID-19 pandemic on O<sub>3</sub>. Concentrations recorded at the Devonshire Park monitor did not meet the UK Air Quality Standards for ground level ozone.

## **Actions to Improve Air Quality**

Whilst air quality has improved significantly in recent decades, and will continue to improve due to national policy decisions, there are some areas where local action is needed to improve air quality further.

The 2019 Clean Air Strategy<sup>5</sup> sets out the case for action, with goals even more ambitious than EU requirements to reduce exposure to harmful pollutants. The Road to Zero<sup>6</sup> sets out the approach to reduce exhaust emissions from road transport through a number of mechanisms; this is extremely important given that the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

## **Actions to Improve Air Quality in Lewes District**

Due both to staff shortages and the COVID-19 pandemic, actions to improve air quality throughout the reporting year were limited. However, LDC has still managed to take forward several initiatives to improve local air quality.

In October 2020, East Sussex County Council (ESCC) managed to secure funding from the Department for Transport (DfT) to deliver a programme of active travel across East Sussex. The Active Travel Programme will be delivered over the coming years, focusing on a number of growth areas, one of these being Newhaven (See Section 2). The scheme will work in partnership with Sustrans and Living Streets, with whom LDC have already

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<sup>5</sup> Defra. Clean Air Strategy, 2019

<sup>6</sup> DfT. The Road to Zero: Next steps towards cleaner road transport and delivering our Industrial Strategy, July 2018

carried out work in recent years, as well as Active Cycling Projects and Sussex Community Rail Partnership.

East Sussex County Council (ESCC) has also secured funding for several capacity-related enhancements to the A259 Corridor, through the Coast to Capital Local Growth Fund. One of the key scheme objectives is to reduce congestion along the A259, including the Newhaven Ring Road.

LDC is also continuing the anti-idling education campaign aimed at schools over both Lewes and Eastbourne councils. This anti-idling message will be continually delivered to schools over the next few years.

Other measures can be found in Section 2 and Table 2.2.

### **Actions to Improve Air Quality in Eastbourne Borough**

Due both to staff shortages and the COVID-19 pandemic, actions to improve air quality throughout the reporting year were uncharacteristically limited. However, EBC has still managed to take forward several initiatives to improve local air quality.

In October 2020, ESCC managed to secure funding from the DfT to deliver a programme of active travel across East Sussex. The Active Travel Programme will run be delivered over the coming years, focusing on a number of growth areas, one of these being Eastbourne (See Section 2). The scheme will work in partnership with Sustrans and Living Streets, with whom EBC have already carried out work in recent years, as well as Active Cycling Projects and Sussex Community Rail Partnership.

EBC is also continuing the anti-idling education campaign aimed at schools over both Lewes and Eastbourne councils. This anti-idling message will be continually delivered to schools over the next few years.

Other measures can be found in Section 2 and Table 2.3.

### **Conclusions and Priorities for Lewes District Council**

No exceedances of nitrogen dioxide or particulate matter were recorded at any monitoring location in 2020. Reductions in NO<sub>2</sub> concentrations were seen at all monitoring locations, largely due to drastic traffic flow reductions during the COVID-19 pandemic and subsequent national lockdowns.

2020 is likely to be considered an outlier of a year for air quality. As such, LDC will not rely on these results to establish strategies to improve air quality, nor to revoke any AQMAs.

LDC will continue to monitor NO<sub>2</sub>, PM<sub>10</sub> and O<sub>3</sub>, and intends to monitor PM<sub>2.5</sub> in the next year. The Council will continue to work on developing the updated AQAP for the Lewes Town AQMA which will outline the key strategies to improve air quality in Lewes town centre.

LDC will continue to work with ESCC, Sustrans and Living Streets to implement transport-related measures which will improve air quality across the district.

## Conclusions and Priorities for Eastbourne Borough Council

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2020 is likely to be considered an outlier of a year for air quality. As such, EBC will not rely on these results to establish strategies to improve air quality.

EBC will continue to monitor NO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub> and O<sub>3</sub> in the next year.

EBC will continue to work with ESCC, Sustrans and Living Streets to implement transport-related measures which will improve air quality across the borough.

## Local Engagement and How to get Involved

Both LDC and EBC have recently set a carbon zero target for Council activities to be carbon neutral by 2030. The link to the Lewes climate change and sustainability strategy can be found [here](#) and the Eastbourne sustainability policy can be found [here](#).

Measures so far achieved include:

- Air source heat pumps installed in off-gas social houses
- Social housing photovoltaics installed
- Stock condition surveys completed as preliminary to retrofitting
- Green electricity supply purchased corporately
- Alternative fuelled refuse vehicles trialled
- Community action facilitation
- Tree planting and re-wilding



- Procurement underway for EV charge points

People have been invited to take part in a [Citizen Science](#) project by having a particulate monitor installed at their home.

*Help improve your own environment:*

Can you cut down on the use of your vehicle?

- Use public transport
- Cycle
- Walk
- Use alternative routes to get from A to B. Instead of walking or cycling along a major road, use alternative quieter and less polluted routes.

Not only can you help in improving our environment, but it gives you the added benefit of exercise and helps improve general health and well-being.

*Idling engines:*

Vehicle idling causes air pollution and engines should not be left running unnecessarily. Breathing polluted air is not only extremely unpleasant but is also detrimental to our health. The air inside the vehicle can be worse than outside!

*Why it's good to turn off vehicle engines - Cut Engine Cut pollution*

- Exhaust emissions contain a range of air toxic pollutants such as carbon monoxide, benzene, formaldehyde, Polyaromatic hydrocarbons, nitrogen dioxide and particulate matter.
- Every minute your car idles you could fill 150 balloons with harmful chemicals.
- Turning off your car engine and restarting it after one minute causes less pollution and uses less fuel than keeping the engine running.
- Modern batteries need less engine running time to stay charged.
- It takes up to an hour for an engine to cool down which means your car heating fan will work with your engine turned off.
- Idling does not keep a catalytic converter warm. They retain heat for approximately 25 minutes after the engine is switched off.

Air quality is as important as exercise and diet for health. Reducing air pollutants can help reduce respiratory problems, heart disease, lung cancer and asthma attacks.

*Changing your vehicle:*

- If you are considering buying a new or second-hand vehicle/s consider the options of newer cleaner models – e.g. hybrids, electric.
- Have a good look at the vehicles emission credentials before buying.
- Consider alternatives – could you join a Car Club?

There are various organisations and clubs which offer help and advice on getting active, for example:

- Sustrans: <http://www.sustrans.org.uk/what-you-can-do>,
- Walking: <https://www.livingstreets.org.uk/walk-to-school>
- Bikeability: <http://bikeability.org.uk/>

These programmes involve schools and workplaces to try to encourage sustainable and active travel (cycling and walking activities).

Public Health England published a very informative document on air pollution and health. This can be found on this link:

<https://www.gov.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution>. Public Health England<sup>7</sup> says: *‘Epidemiological studies have shown that long-term exposure to air pollution (over years or lifetimes) reduces life expectancy, mainly due to cardiovascular and respiratory diseases and lung cancer. Short-term exposure (over hours or days) to elevated levels of air pollution can also cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in respiratory and cardiovascular hospital admissions and mortality.’*

Details, including local air quality monitoring data, annual air quality reports and the impact air quality may have on health can be found on the [Sussex-air website](#). Sussex-air also runs the airAlert service providing warnings to people with respiratory and cardiovascular conditions, health professionals and carers in Sussex. The service is FREE to register/subscribe to and anyone can join. Alerts are sent direct to the airAlert app, email, mobile phone via text message or home phone. Sussex-air also provides a free coldAlert service – providing extreme cold weather warnings and information and also a heatAlert service. The apps, airAlert, coldAlert and heat Alert are provided as a free service by the Sussex Air Quality Partnership and supported by the Public Health Bodies (East Sussex &

West Sussex County Council). Further information can be found: [www.sussex-air.net](http://www.sussex-air.net) or telephone 01273 484337.

### *Business*

Businesses in East Sussex can obtain assistance from energy advisors LoCASE (Low Carbon Across the South East). Your business may be eligible for a free energy audit and funding for energy efficiency solutions identified with a grant. More information can be found on: <http://locase.co.uk/partners-and-services/>

## Table of Contents

|   |           |
|---|-----------|
| <b>Executive Summary: Air Quality in Our Area .....</b>   | <b>i</b>  |
| Air Quality in Lewes District Council .....   | ii        |
| Air Quality in Eastbourne Borough Council .....   | iii       |
| Actions to Improve Air Quality .....  | iv        |
| Actions to Improve Air Quality in Lewes District .....  | iv        |
| Actions to Improve Air Quality in Eastbourne Borough .....  | v         |
| Conclusions and Priorities for Lewes District Council .....   | v         |
| Conclusions and Priorities for Eastbourne Borough Council .....   | vi        |
| Local Engagement and How to get Involved .....  | vi        |
| <b>1 Local Air Quality Management .....</b>   | <b>1</b>  |
| <b>2 Actions to Improve Air Quality .....</b>   | <b>2</b>  |
| Air Quality Management Areas .....  | 2         |
| Progress and Impact of Measures to address Air Quality in Lewes District Council .....                        | 4         |
| 2.1.1 Lewes Town Centre AQMA .....  | 6         |
| Lewes Town Centre AQAP .....  | 6         |
| 2.1.2 A259 Newhaven Ring Road AQMA .....  | 7         |
| Newhaven AQAP .....   | 8         |
| Additional actions .....  | 9         |
| Progress and Impact of Measures to address Air Quality in Eastbourne Borough Council .....                    | 13        |
| Eastbourne Town Centre Movement and Access Package .....  | 14        |
| Additional actions .....  | 15        |
| Cycling .....   | 15        |
| Walking .....   | 15        |
| PM <sub>2.5</sub> – Lewes District Council's Approach to Reducing Emissions and/or Concentrations .....       | 23        |
| PM <sub>2.5</sub> – Eastbourne Borough Council's Approach to Reducing Emissions and/or Concentrations .....   | 24        |
| <b>3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance .....</b> | <b>25</b> |
| Summary of Monitoring Undertaken at Lewes District Council .....  | 25        |
| 3.1.1 Automatic Monitoring Sites .....  | 25        |
| 3.1.2 Non-Automatic Monitoring Sites .....  | 26        |
| Individual Pollutants .....   | 27        |
| 3.1.3 Nitrogen Dioxide (NO <sub>2</sub> ) .....   | 27        |
| 3.1.4 Particulate Matter (PM <sub>10</sub> ) .....  | 33        |
| Summary of Monitoring Undertaken at Eastbourne Borough Council .....  | 34        |
| 3.1.5 Automatic Monitoring Sites .....  | 34        |
| 3.1.6 Non-Automatic Monitoring Sites .....  | 35        |
| Individual Pollutants .....   | 36        |

|   |  |           |
|---|--|-----------|
| 3.1.7   | Nitrogen Dioxide (NO <sub>2</sub> ) .....    | 36        |
| 3.1.8   | Particulate Matter (PM <sub>10</sub> ) ..... | 37        |
| 3.1.9   | Particulate Matter (PM <sub>2.5</sub> )..... | 38        |
| <b>Appendix A: Monitoring Results .....</b>   |  | <b>39</b> |
| <b>Appendix B: Full Monthly Diffusion Tube Results for 2020 .....</b>   |  | <b>62</b> |
| <b>Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC .....</b>                                 |  | <b>65</b> |
| New or Changed Sources Identified Within Lewes District Council During 2020.....  |  | 65        |
| New or Changed Sources Identified Within Eastbourne Borough Council During 2020 .....   |  | 65        |
| Additional Air Quality Works Undertaken by Lewes District Council During 2020 .....   |  | 65        |
| Additional Air Quality Works Undertaken by Eastbourne Borough Council During 2020 .....                                       |  | 65        |
| QA/QC of Diffusion Tube Monitoring .....  |  | 65        |
| Diffusion Tube Annualisation in Lewes District Council .....  |  | 66        |
| Diffusion Tube Annualisation in Eastbourne Borough Council.....   |  | 67        |
| Diffusion Tube Bias Adjustment Factors .....  |  | 67        |
| NO <sub>2</sub> Fall-off with Distance from the Road.....   |  | 68        |
| QA/QC of Automatic Monitoring .....   |  | 68        |
| PM <sub>10</sub> and PM <sub>2.5</sub> Monitoring Adjustment .....  |  | 68        |
| Automatic Monitoring Annualisation in Lewes District Council.....   |  | 69        |
| Automatic Monitoring Annualisation in Eastbourne Borough Council .....  |  | 69        |
| NO <sub>2</sub> Fall-off with Distance from the Road.....   |  | 69        |
| <b>Appendix D: Map(s) of Monitoring Locations and AQMAs within Lewes District Council and Eastbourne Borough Council.....</b> |  | <b>71</b> |
| <b>Appendix E: Summary of Air Quality Objectives in England.....</b>  |  | <b>76</b> |
| <b>Appendix F: Impact of COVID-19 upon LAQM .....</b>   |  | <b>77</b> |
| Impacts of COVID-19 on Air Quality within Lewes District Council .....  |  | 78        |
| Impacts of COVID-19 on Air Quality within Eastbourne Borough Council .....  |  | 78        |
| Opportunities Presented by COVID-19 upon LAQM within Lewes District Council .....   |  | 78        |
| Opportunities Presented by COVID-19 upon LAQM within Eastbourne Borough Council .....   |  | 79        |
| Challenges and Constraints Imposed by COVID-19 upon LAQM within Lewes District Council.....                                   |  | 79        |
| Challenges and Constraints Imposed by COVID-19 upon LAQM within Eastbourne Borough Council .....                              |  | 79        |
| <b>Glossary of Terms .....</b>  |  | <b>81</b> |
| <b>References .....</b>   |  | <b>82</b> |

## Figures

|  |    |
|--|----|
| Figure D.1 – Map of Lewes District Council's Monitoring Sites .....                  | 71 |
| Figure D.2 – Lewes Town Centre AQMA .....  | 72 |
| Figure D.3 – Newhaven Ring Road AQMA .....   | 73 |
| Figure D.4 – Map of Eastbourne Borough Council's Monitoring Sites .....              | 74 |
| Figure D.5 – Map of Eastbourne Borough Council's Monitoring Sites in the Town Centre | 75 |

## Tables

|   |    |
|---|----|
| Table 2.1 – Declared Air Quality Management Areas .....   | 3  |
| Table 2.2 – Progress on Measures to Improve Air Quality in Lewes District Council .....   | 11 |
| Table 2.3 – Progress on Measures to Improve Air Quality in Eastbourne Borough Council .....   | 17 |
| Table A.1 – Details of Automatic Monitoring Sites at Lewes District Council .....   | 39 |
| Table A.2 – Details of Automatic Monitoring Sites at Eastbourne Borough Council .....   | 39 |
| Table A.3 – Details of Non-Automatic Monitoring Sites at Lewes District Council .....   | 41 |
| Table A.4 – Details of Non-Automatic Monitoring Sites at Eastbourne Borough Council .....   | 45 |
| Table A.5 – Annual Mean NO <sub>2</sub> Monitoring Results: Automatic Monitoring (µg/m <sup>3</sup> ) at Lewes District Council .....                         | 47 |
| Table A.6 – Annual Mean NO <sub>2</sub> Monitoring Results: Non-Automatic Monitoring (µg/m <sup>3</sup> ) at Lewes District Council .....                     | 48 |
| Table A.7 – Annual Mean NO <sub>2</sub> Monitoring Results: Automatic Monitoring (µg/m <sup>3</sup> ) at Eastbourne Borough Council .....                     | 53 |
| Table A.8 – Annual Mean NO <sub>2</sub> Monitoring Results: Non-Automatic Monitoring (µg/m <sup>3</sup> ) at Lewes District Council .....                     | 54 |
| Table A.9 – 1-Hour Mean NO <sub>2</sub> Monitoring Results, Number of 1-Hour Means > 200µg/m <sup>3</sup> in Lewes District Council .....                     | 57 |
| Table A.10 – 1-Hour Mean NO <sub>2</sub> Monitoring Results, Number of 1-Hour Means > 200µg/m <sup>3</sup> in Eastbourne Borough Council .....                | 57 |
| Table A.11 – Annual Mean PM <sub>10</sub> Monitoring Results (µg/m <sup>3</sup> ) at Lewes District Council ....  | 58 |
| Table A.12 – Annual Mean PM <sub>10</sub> Monitoring Results (µg/m <sup>3</sup> ) at Eastbourne Borough Council .....   | 58 |
| Table A.13 – 24-Hour Mean PM <sub>10</sub> Monitoring Results, Number of PM <sub>10</sub> 24-Hour Means > 50µg/m <sup>3</sup> at Lewes District Council ..... | 60 |

|   |    |
|---|----|
| Table A.14 – 24-Hour Mean PM <sub>10</sub> Monitoring Results, Number of PM <sub>10</sub> 24-Hour Means > 50µg/m <sup>3</sup> at Eastbourne Borough Council ..... | 60 |
| Table A.15 – Annual Mean PM <sub>2.5</sub> Monitoring Results (µg/m <sup>3</sup> ) at Eastbourne Borough Council.....   | 61 |
| Table B.1 – NO <sub>2</sub> 2020 Diffusion Tube Results (µg/m <sup>3</sup> ) in Lewes District Council .....  | 62 |
| Table B.2 – NO <sub>2</sub> 2020 Diffusion Tube Results (µg/m <sup>3</sup> ) in Eastbourne Borough Council....  | 63 |
| Table C.1 – Bias Adjustment Factor .....  | 67 |
| Table C.2 – Annualisation Summary (concentrations presented in µg/m <sup>3</sup> ) for Lewes District Council.....  | 70 |
| Table C.3 – Annualisation Summary (concentrations presented in µg/m <sup>3</sup> ) for Eastbourne Borough Council .....   | 70 |
| Table E.1 – Air Quality Objectives in England .....   | 76 |
| Table F 1 – Impact Matrix .....   | 80 |

# 1 Local Air Quality Management

This report provides an overview of air quality within the administrative areas of Lewes District Council (LDC) and Eastbourne Borough Council (EBC) 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 Status Report (ASR) is an annual requirement showing the strategies employed by Lewes District and Eastbourne Borough Councils to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England are presented in Table E.1.



## 2 Actions to Improve Air Quality

### Air Quality Management Areas

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

There are currently two AQMAs within the administrative area of Lewes District Council (LDC). A summary of AQMAs declared by LDC can be found in Table 2.1. The table presents a description of the 2 AQMAs that are currently designated within Lewes District Council. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at:

[https://uk-air.defra.gov.uk/aqma/details?aqma\\_ref=04](https://uk-air.defra.gov.uk/aqma/details?aqma_ref=04)

[https://uk-air.defra.gov.uk/aqma/details?aqma\\_ref=41576](https://uk-air.defra.gov.uk/aqma/details?aqma_ref=41576)

Appendix D: Map(s) of Monitoring Locations and AQMAs within Lewes District Council and Eastbourne Borough Council provides maps of the AQMAs declared within Lewes District and also the air quality monitoring locations in relation to the AQMAs. The air quality objectives pertinent to the current AQMA designations are as follows:

- NO<sub>2</sub> annual mean.

Eastbourne Borough Council (EBC) currently does not have any declared AQMAs. A map of all monitoring locations within the administrative area of (EBC) is provided in Appendix D.

**Table 2.1 – Declared Air Quality Management Areas**

| AQMA Name               | Date of Declaration | Pollutants and Air Quality Objectives | One Line Description  | Is air quality in the AQMA influenced by roads controlled by Highways England? | Level of Exceedance: Declaration | Level of Exceedance: Current Year | Name and Date of AQAP Publication | Web Link to AQAP  |
|-------------------------|---------------------|---------------------------------------|---|--|----------------------------------|-----------------------------------|-----------------------------------|---|
| Lewes Town Centre       | 30.06.05            | NO <sub>2</sub> Annual Mean           | An area encompassing a section of Lewes Town Centre extending north to the old police station, south to St Andrews Place      | NO   | 53µg/m <sup>3</sup>              | 31.6µg/m <sup>3</sup>             | May-09                            | <a href="http://www.sussex-air.net/Reports/LewesAQAP2009.pdf">http://www.sussex-air.net/Reports/LewesAQAP2009.pdf</a>       |
| A259 Newhaven Ring Road | 16.07.14            | NO <sub>2</sub> Annual Mean           | Incorporates Newhaven Town Centre, Southway, Northway and sections of the A259 Brighton Road, Lewes Road and the swing bridge | NO   | 49µg/m <sup>3</sup>              | 34.1µg/m <sup>3</sup>             | Jun-16                            | <a href="http://www.sussex-air.net/Reports/NewhavenAQAP2016.pdf">http://www.sussex-air.net/Reports/NewhavenAQAP2016.pdf</a> |

☒ LDC confirm the information on UK-Air regarding their AQMA(s) is up to date.

☒ LDC confirm that all current AQAPs have been submitted to Defra.

## Progress and Impact of Measures to address Air Quality in Lewes District Council

Defra's appraisal of last year's ASR concluded that the report was detailed and comprehensive.

Defra has strongly recommended the introduction of a triplicate set of diffusion tubes at automatic monitor LDC 6, in order to derive a local bias adjustment factor. LDC has confirmed that they are intent on implementing this during the next reporting year.

Following the 2019 exceedance at Diffusion Tube 21 (204 School Hill), Defra requested that consideration be given to the amendment of the existing AQMA to include this location. LDC confirm that this is being considered and will be discussed fully within the updated Lewes Town AQAP.

LDC has taken forward a number of direct 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. 10 current measures are included within Table 2.2, with the type of measure and the progress LDC have made during the reporting year of 2020 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2.

Progress on the following measures has been slower than expected due to staff shortages and the COVID-19 pandemic. It is anticipated that more progress will be made throughout the next reporting year.

The Lewes District Local Plan, Part 1 Joint Core Strategy 2010-2030 (May 2016) includes Core Policy 9 – Air Quality: Link below

<https://www.lewes-eastbourne.gov.uk/planning-policy/lewes-local-plan-2003-saved-policies/>.

Its key strategic objectives include: *'reducing the need for travel and to promote a sustainable system of transport and land use for people who live, work, study in and visit the district'* and *'to ensure the district reduces locally contributing causes of climate change and is pro-active regarding climate change initiatives'*.

In brief: Local planning must have regard to AQMA areas and AQAP's. Planning must ensure applications for developments:

- provide mitigation measures where traffic may adversely affect an AQMA;

- ensure development will not have a negative impact on the surrounding area in terms of its health;
- promote opportunities for walking, cycling and public transport and congestion management to reduce traffic levels in areas of reduced air quality; and
- secure best methods to reduce levels of dust and other pollutants arising from construction.

A collaborative approach has been taken in order to improve the environment as a whole – for example the East Sussex Strategic Partnership:

<http://www.essp.org.uk/What-we-do/Pride-of-Place/Environment>

The current priority themes in the Lewes District Sustainable Community Strategy are:

- A valued environment
- Decent and affordable housing for all
- Safer and stronger communities
- Access to good local facilities
- Healthier communities
- Vibrant and sustainable economy

More on the link below:

<http://www.essp.org.uk/East-Sussex-Strategic-Partnership-Media/East-Sussex-Strategic-Partnership-Document-Library/PoP%20documents/Lewes.pdf>

One of the key tasks under the Environment and Climate Change theme is to reduce traffic by increasing alternative sustainable travel choices and to improve air quality.

LDC works in partnership with ESCC to improve local air quality. One of the main mechanisms to achieve this is through the Local Transport Plan (LTP3, 2011-2021). An update on the Local Transport Plan is provided in the Second Implementation Plan (2016/2017 to 2020/2021) which can be found at:

<https://www.eastsussex.gov.uk/roadsandtransport/localtransportplan/lt3/downloadlt3>

It identifies the importance of various improvements to key walking and cycling corridors (e.g. improving signs for cycle Regional Route 90), focussing on improvements to public transport corridors, better use of technology e.g. Real Time Bus Information and charging

points for electric vehicles. Further information can be found on:  
<https://www.eastsussex.gov.uk/roadsandtransport/localtransportplan>

While air quality is not an explicit objective for the LTP, there will be co-benefits in terms of the measures designed to tackle climate change and improve quality of life.

### 2.1.1 Lewes Town Centre AQMA

In Table 2.1 the monitoring location of initial exceedance (at declaration) was measured in Fisher Street (Fisher Street East). Initially measured at  $53\mu\text{g}/\text{m}^3$  ( $\text{NO}_2$  annual mean) in 2005/06, this had gradually decreased to an  $\text{NO}_2$  concentration reading of  $41.9\mu\text{g}/\text{m}^3$  (however this is still above the annual AQO of  $40\mu\text{g}/\text{m}^3$ ) in 2019. There is a bus stop on this street and traffic has to wait behind the bus if it stops here. This queuing traffic will add to  $\text{NO}_2$  emissions at this end of the street. This tube is also very close to the crossroads in the High Street. However, in 2020, likely due to the impacts of COVID-19 on vehicular travel, this diffusion tube recorded an annual mean  $\text{NO}_2$  concentration of  $27.6\mu\text{g}/\text{m}^3$ , which is below the  $40\mu\text{g}/\text{m}^3$  AQO by 31%.

However, there have been steady reductions in  $\text{NO}_2$  concentrations at Fisher Street West and 18 Fisher Street and this is likely due to the change of traffic priority at that end of Fisher Street where traffic is more free-flowing. This is a narrow street with high buildings either side, thus enclosing pollutants; a very common problem for old historic towns.

In 2020, concentrations were all below 10% of the annual mean AQS for  $\text{NO}_2$ , due to the influence of the COVID-19 pandemic on traffic flows.

### Lewes Town Centre AQAP

The Lewes Town Centre AQAP is currently being updated and will be prepared for public consultation in 2022. The review of air quality in Lewes identified continued exceedances of the annual mean  $\text{NO}_2$  AQO into 2021 and the requirement for interventions to improve air quality. The review also provided information on the main source of pollution responsible for the exceedances, this source apportionment identified significant ( $\text{NO}_x$ ) emissions were from diesel vehicles; especially buses, cars/taxis and light duty vehicles (vans). The AQAP assessed a series of interventions to improve air quality including different types of Bus and taxi low emission zone (LEZ) type measures. These LEZ measures were assessed, and the most effective measure identified was a Lewes Bus LEZ which would include upgrading the emissions systems or replacements of existing buses operating in the centre of Lewes (*Note: these measures were assessed pre COVID-19*). The AQAP will be reviewed by the

Council and be provided for public consultation in 2022. This is later than initially planned, but has been held back due to staff shortages and the Covid-19 pandemic.

A successful bid by Brighton & Hove City Council supported by Lewes District Council saw a grant of £149,000 awarded from the Defra Air Quality Fund to convert a series of double decker buses from the Euro-V to the Euro-VI emission standard.

The converted buses serve transboundary routes 28 and 29 (Brighton – Lewes – Tunbridge Wells) maximising the benefit in terms of improving areas of poor air quality in Brighton, Tunbridge Wells and in the Lewes AQMA.

The link to the current Lewes AQAP is:

<http://www.sussex-air.net/Reports/LewesAQAP2009.pdf>

Many of the actions originally placed into the Lewes AQAP 2009 have been completed: for example, there have been reductions in NO<sub>2</sub> concentrations (e.g. change of traffic priority in Fisher Street); the car club is well established; 20mph zones established in the town centre and beyond; Offham Road pedestrian crossing installed; a pedestrian crossing installed on the A277 Brighton Road (near corner of Montacute Road); Ringmer to Lewes cycle route completed; improvements at Lewes Railway Station; many buses coming through Lewes have cleaner engines and installation of anti-idling signs.

### **2.1.2 A259 Newhaven Ring Road AQMA**

In Table 2.1 the monitoring location of initial exceedance (at declaration) was measured at LDC-16 Southway, Newhaven with an annual NO<sub>2</sub> mean of 49µg/m<sup>3</sup> in 2013. In 2019, the annual mean for this location was 40.7µg/m<sup>3</sup> but when corrected for distance to receptor the annual mean was 35.9µg/m<sup>3</sup>. This location has shown annual means above 40µg/m<sup>3</sup> for the few years so this is a welcome reading. It is located on a busy road, near a bus stop and traffic lights and is at the top of a steep incline so these factors will affect NO<sub>2</sub> readings at this location. However, the diffusion tube by The Old Chapel, Newhaven, which is located on that inclined link of the A259 ring road, has been shown to be in exceedance of the AQS at the nearest relevant receptor for the past few years, and was 40.1µg/m<sup>3</sup> at relevant exposure in 2019.

In 2020, concentrations were all below 10% of the annual mean AQS for NO<sub>2</sub>, due to the influence of the COVID-19 pandemic on traffic flows.

## Newhaven AQAP

Following the declaration of an Air Quality Management Area in July 2014 for the centre of Newhaven, an Air Quality Action Plan was prepared to address the high concentrations of NO<sub>2</sub> which people are exposed to alongside the busy roads in the centre of Newhaven. Road transport is the main source of emissions relating to NO<sub>2</sub>, and particularly diesel vehicles in stop-start traffic, which make the biggest contribution resulting in higher emissions.

The AQAP has seven broad areas of action to help deliver better air quality, with specific measures then identified for each of these *Actions areas*. The categories of action are as follows:

Action 1: Enable the use of sustainable travel choices through the delivery of transport infrastructure and initiatives.

Action 2: Actively promote low emission vehicles and supporting infrastructure.

Action 3: Use the planning system to ensure that air quality is fully considered for new development.

Action 4: Use traffic management to reduce emissions within the AQMA.

Action 5: Work with Public Health colleagues to inform the public about health impacts of Air Pollution and how they can change behaviour to reduce emissions and reduce exposure.

Action 6: Continue to monitor and assess air quality in line with Government guidance on Local Air Quality Management (LAQM).

Action 7: Target point sources in Newhaven Town Centre

The above actions are evaluated in terms of their impact on:

- Air quality
- Cost & feasibility
- Timescale for implementation

The delivery of the Newhaven Action Plan is dependent on adequate levels of resourcing, both for capital costs and staffing. Currently, increases in traffic around the ring road are likely assuming planned development for Newhaven proceeds. Any improvements made will therefore be challenged by an increase in vehicles due to new developments. The plan can be found on this link:

<http://www.sussex-air.net/Reports/NewhavenAQAP2016.pdf>

## Additional actions

### Cycling

Under the Active Access for Growth – ESCC have launched Pedal Power which gives people the opportunity to try cycling by offering bikes for rent for between 1 and 6 months. There are a range of bikes to try – for more information please see this link:

<https://eastsussexpedalpower.com/>

There are further plans to introduce a new cycle route on Avis Road which will tie into the existing NCR2 cycle route on the A259.

### Walking

Under the ESCC Active Access for Growth not only is cycling encouraged but also walking opportunities: using active travel maps, journey planning and giving people walking challenges and pledges. There are also opportunities to explore the South Downs by walking and or cycling.

Many of the above initiatives feed into the Newhaven A259 Ring Road AQAP 7 main actions, with other improvements such as improvements to bus shelters and facilities which should help encourage further use of buses.

More detail on these measures can be found in their respective Action Plans (see above for links)

The planned installation of the Newhaven air quality monitoring station was slow due to a variety of issues, one being difficulties in locating a suitable site within the AQMA. This station was eventually installed and up and running during 2020. The AQAP review may give rise to further challenges. Progress on the Lewes AQAP has been slower than expected due to staff shortages and the Covid-19 pandemic.

DEFRA's, Clean Air Strategy (Jan 2019)<sup>4</sup> states:

*'New legislation will create a stronger and more coherent framework for action to tackle air pollution. This will be underpinned by new England-wide powers to control major sources of air pollution, in line with the risk they pose to public health and the environment, plus new local powers to take action in areas with an air pollution problem. These will support the creation of Clean Air Zones to lower emissions from all sources of air pollution, backed up with clear enforcement mechanisms.'*



If local authorities are going to be given 'new powers' to 'take action' the government need to consider how they will support and fund resources for this. Staff resourcing and funding is already an issue for many local authorities. Other challenges range from: changing people's behaviour on their travel choices, getting people to recognise the polluting and health effects of engine idling, linking of cycle routes to encourage and make cycling safer (particularly if trying to encourage more children to cycle – the safety aspect of this can make parents very anxious), the increased popularity of domestic wood burning stoves in homes and how quickly can/will company vehicle fleets change to cleaner vehicles?

There are lots of pressures placed upon local authorities – on one hand they must improve air quality but on the other they must find suitable locations for development. In Newhaven, for example, the need for economic regeneration places pressure on air quality and the environment. There is significant investment in the Port area (following approval for a deep water berth at the harbour mouth) – which should grow the ferry service for both freight and passenger travel between Newhaven and Dieppe. There are more businesses moving into the area and residential plans in the pipeline. Investment will also entail increased business premises and new homes in the Newhaven area, which in turn will increase traffic loading to the Ring Road. Careful planning measures will be required.

Whilst the measures stated above in Section 2 and in **Error! Reference source not found.** will help to contribute towards compliance, Lewes District Council anticipates that further additional measures not yet prescribed will be required in subsequent years to achieve compliance and enable the revocation of Lewes Town centre and Newhaven A259 Ring Road AQMAs.

Table 2.2 – Progress on Measures to Improve Air Quality in Lewes District Council

| Measure No. | Measure  | Category                              | Classification | Year Measure Introduced | Estimated / Actual Completion Year | Organisations Involved  | Funding Source     | Defra AQ Grant Funding | Funding Status | Estimated Cost of Measure | Measure Status | Reduction in Pollutant / Emission from Measure | Key Performance Indicator  | Progress to Date    | Comments / Barriers to Implementation                         |
|-------------|--|---------------------------------------|----------------|-------------------------|------------------------------------|-------------------------|--------------------|------------------------|----------------|---------------------------|----------------|--|--|---------------------|---|
| 1           | Lewes – Cycle Route 90   | Transport Planning and Infrastructure | Cycle network  |                         | 2023                               | ESCC                    | TBC                |                        |                |                           | Planning       |  | Increased use of sustainable transport modes   | Pre-liminary Design | Physical constraints on a coherent route                      |
| 2           | Better coordination of building and road works in the Lewes town area (LTP+) - Enhance existing LTP scheme to include building works and haulage route management  | Transport Planning and Infrastructure | Other          |                         |                                    | ESCC Network Management | TBC                |                        |                |                           | Implementation |  | Number of agreements and s.61 agreements   | Ongoing             |   |
| 3           | Target long-distance freight management & heavy traffic through town (LTP+) a) Intensification of existing LTP programmes b) Review signage on weight restrictions at access road links  | Transport Planning and Infrastructure | Other          |                         |                                    | ESCC                    | TBC                |                        |                |                           | Planning       |  | Traffic counts   |                     | Will be reviewed as part of Local Transport Plan 2021 onwards |
| 4           | Reduce emissions from idling vehicles a) Install "cut engine cut pollution" signs (i.e. schools, taxi & bus terminals) b) Raise awareness through eco-driving campaign c) investigate enforcing legislation (issue fines)  | Transport Planning and Infrastructure | Other          |                         |                                    | LDC                     | In-house resources |                        |                |                           | Implementation |  | NO <sub>2</sub> / Participation/ Enforcements  | Ongoing             | As funding available  |
| 5           | Lewes Parking Management (LTP+) - Intensification of existing/planned LTP programmes a) extension of parking controlled area b) re-allocation of parking/loading spaces c) higher charges for long stay parking d) higher charges for residents second parking permits e) discounted permits for low-emission vehicles f) introduce car spaces for low-emission vehicles, car-clubs and car share g) maintain/increase provision of two-wheelers parking | Transport Planning and Infrastructure | Other          |                         |                                    | ESCC                    |                    |                        |                |                           | Planning       |  | reduced traffic and congestion at peak time, reduced re-circulation, reduced emissions; and modal shift and sustainable travel behaviour |                     | Will be undertaken as part of parking reviews                 |

| Measure No. | Measure  | Category                              | Classification                                | Year Measure Introduced | Estimated / Actual Completion Year | Organisations Involved | Funding Source                         | Defra AQ Grant Funding | Funding Status | Estimated Cost of Measure | Measure Status | Reduction in Pollutant / Emission from Measure | Key Performance Indicator    | Progress to Date | Comments / Barriers to Implementation   |
|-------------|--|---------------------------------------|---|-------------------------|------------------------------------|------------------------|--|------------------------|----------------|---------------------------|----------------|--|------------------------------|------------------|---|
| 6           | Partnership work with bus & train operators (LTP+) a) Reduce emissions: calculate emissions from existing bus fleet, route/fleet management (i.e. only cleaner vehicles through AQMA), eco-driving training b) Increase bus and train patronage: through supporting marketing campaign, extend use of subsidised/discounted fares, improve bus connection to key area, bus stop facilities, bus information c) Provision of additional undercover cycle parking at Lewes station | Transport Planning and Infrastructure | Other   |                         |                                    | ESCC/LDC               |  |                        |                |                           | Implementation | accessibility/ awareness                       |                              |                  | As funding is available.  |
| 7           | New pipeline schemes - cycling infrastructure (Local Cycling & Walking Infrastructure Plan)  | Transport Planning and Infrastructure | Cycle network                                 |                         | 2023                               | ESCC                   | ESCC Local Transport Capital Programme |                        |                |                           | Planning       |  |                              | Feasibility      | Commissioning delayed due to impact of the Covid 19 Pandemic on operations of the council |
| 8           | Address traffic flow & congestion on Newhaven Ring Road  | Traffic Management                    | UTC, Congestion management, traffic reduction |                         |                                    |                        | ESCC                                   |                        |                |                           | Implementation |  | Traffic flow/NO <sub>2</sub> |                  | Will be addressed through A259 South Coast Corridor Package                               |
| 9           | Newhaven Ring Road – Pedestrian Crossings  | Transport Planning and Infrastructure | Other   |                         | 2021                               |                        | ESCC                                   |                        |                |                           | Completed      |  |                              | Constructed      |   |
| 10          | A259 South Coast Corridor Package – A259 Corridor Package  | Transport Planning and Infrastructure | Other   |                         | 2022                               |                        | ESCC                                   |                        |                |                           | Implementation |  |                              | Feasibility      |   |

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

Defra's appraisal of last year's ASR concluded that the report was detailed and comprehensive.

Defra have strongly recommended the introduction of a triplicate set of diffusion tubes within the borough in order to derive a local bias adjustment factor. EBC has confirmed that they are intent on implementing this during the next reporting year.

EBC has taken forward a number of direct 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. 18 measures are included within Table 2.2, with the type of measure and the progress EBC have made during the reporting year of 2020 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2.

Progress on the following measures has been slower than expected due to staff shortages and the COVID-19 pandemic.

Although air quality objectives are not exceeded in Eastbourne, we are required to report on strategies aimed at improving air quality during 2020. A collaborative approach has been taken in order to improve the environment as a whole – for example the East Sussex Strategic Partnership:

<http://www.essp.org.uk/What-we-do/Pride-of-Place/Environment>

<http://www.essp.org.uk/East-Sussex-Strategic-Partnership-Media/East-Sussex-Strategic-Partnership-Document-Library/PoP%20documents/Eastbourne.pdf>

One of the key tasks under the Environment and Climate Change theme is to reduce traffic by increasing alternative sustainable travel choices and to improve air quality. Under Health and Social Care, one of the priorities is encouraging people to take more exercise, reduce obesity and improve diet and nutrition. Coupled with this under 'Environment Priorities', Eastbourne aims to improve the standard and quantity of public transport, improve facilities for walking and cycling and encouraging the production of green travel plans.

EBC works in partnership with ESCC to improve local air quality. One of the main mechanisms to achieve this is through the Local Transport Plan (LTP3, 2011-2026). An update on the Local Transport Plan is provided in the Second Implementation Plan (2016/2017 to 2020/2021) which can be found at: [ESCC Local Transport Plan 3](#).

It identifies the importance of various improvements to key walking and cycling corridors (e.g. improving signs for cycle Regional Route 90), focussing on improvements to public transport corridors, better use of technology e.g. Real Time Bus Information and charging points for electric vehicles. Further information can be found on: [ESCC Local Transport Plan](#).

While air quality is not an explicit objective for the LTP, there will be co-benefits in terms of the measures designed to tackle climate change and improve quality of life. Measures will indirectly aid reductions in pollutant levels by encouraging more people to walk and cycle instead of using vehicles.

More detail on these measures is likely to be found within the upcoming Eastbourne Local Plan (2018-2038), which will be the key planning document that will shape, plan and manage growth, regeneration and development across the Borough.

### **Eastbourne Town Centre Movement and Access Package**

The Town Centre Local Plan for Eastbourne aims to inform the transport measures to be prioritised and funding has been secured from the LEP to deliver improvements and access in and around the town. Further information can be found on this link:

<http://www.lewes-eastbourne.gov.uk/resources/assets/inline/full/0/223510.pdf>

The Eastbourne Town Centre Improvement Scheme (ETCIS) is a joint project between East Sussex County Council and Eastbourne Borough Council. The objectives of this are:

- Modernise the town centre, creating a pedestrian friendly environment
- Create civic space along Terminus Road for cultural and social activities
- Support local economic growth by providing a step change in the quality of the environment for local residents and visitors to Eastbourne

Terminus Road is currently Eastbourne's main commercial corridor and has resulted in a dense congregation of buses in a busy pedestrian area. The ETCIS addresses these problems using imaginative design solutions to enhance the road and the environment. The scheme was completed in 2020.

The Arndale Centre/The Beacon in Eastbourne's Town Centre has been undergoing an £85 million new extension development.

The proposals for the Town Centre have been designed around the concept of Shared Space which aims to improve pedestrian movement and comfort by reducing the dominance of motor vehicles and enable users to share the space.

Shared spaces encourage low vehicle speeds, create an environment in which pedestrians can walk, or stop and chat, without feeling intimidated by motor traffic. They also make it easier for people to move around and promote social interaction.

The key design objectives are to:

- Improve public realm and connections with wider town
- Reallocate road space to pedestrians and public realm
- Reduce conflict of buses and pedestrians
- Improve relationship and connection with railway station
- Retain accessibility and visibility of buses on Terminus Road
- Coordinate the design of street furniture and signage which will be finished to a high standard befitting a key gateway into the Town Centre.
- Future proof design to aid a potential expansion of the shared space concept

Measures will enable walking between key destinations, including residential areas, town centres, schools and employment. There are now significant pedestrian and bus facility upgrades to Terminus Road and Cornfield Terrace area in association with the redevelopment of the Arndale Centre.

## **Additional actions**

### **Cycling**

Under the Active Access for Growth – ESCC has launched Pedal Power which gives people the opportunity to try cycling by offering bikes for rent for between 1 and 6 months. There are a range of bikes to try – for more information please see this link:

<https://eastsussexpedalpower.com/>

### **Walking**

Under the ESCC Active Access for Growth not only is cycling encouraged but also walking opportunities: using active travel maps, journey planning and giving people walking

challenges and pledges. There are also opportunities to explore the South Downs by walking and or cycling.

Table 2.3– Progress on Measures to Improve Air Quality in Eastbourne Borough Council

| Measure No. | Measure  | Category                              | Classification | Year Measure Introduced | Estimated / Actual Completion Year | Organisations Involved | Funding Source | Defra AQ Grant Funding | Funding Status | Estimated Cost of Measure | Measure Status | Reduction in Pollutant / Emission from Measure | Key Performance Indicator | Progress to Date | Comments / Barriers to Implementation  |
|-------------|--|---------------------------------------|----------------|-------------------------|------------------------------------|------------------------|----------------|------------------------|----------------|---------------------------|----------------|--|---------------------------|------------------|--|
| 1           | Hailsham/Polegate/Eastbourne Sustainable Transport Corridor PHASE 1                                      | Transport Planning and Infrastructure | Other          |                         | 2022                               | ESCC, EBC, WDC         | Defra          |                        |                |                           | Planning       |  |                           | Detailed design  | Delivery delayed due to impact of the Covid 19 Pandemic on operations of the council |
| 2           | Hailsham/Polegate/Eastbourne Sustainable Transport Corridor PHASE 2 Victoria Drive bus lane              | Transport Planning and Infrastructure | Other          |                         | 2025                               | ESCC, EBC, WDC         | Defra          |                        |                |                           | Planning       |  |                           | Feasibility      |  |
| 3           | Hailsham/Polegate/Eastbourne Sustainable Transport Corridor PHASE 3 Ersham Road roundabout, Hailsham     | Transport Planning and Infrastructure | Other          |                         | 2025                               | ESCC, EBC, WDC         | Defra          |                        |                |                           | Planning       |  |                           | Feasibility      |  |
| 4           | Hailsham/Polegate/Eastbourne Sustainable Transport Corridor PHASE 4 A2021 Kings Drive/Rodmill Roundabout | Transport Planning and Infrastructure | Other          |                         | 2031                               | ESCC, EBC, WDC         | Defra          |                        |                |                           | Planning       |  |                           | Feasibility      |  |
| 5           | Hailsham/Polegate/Eastbourne Sustainable Transport Corridor  | Transport Planning and                | Other          |                         | 2031                               | ESCC, EBC, WDC         | Defra          |                        |                |                           | Planning       |  |                           | Feasibility      |  |



| Measure No. | Measure  | Category                              | Classification | Year Measure Introduced | Estimated / Actual Completion Year | Organisations Involved | Funding Source | Defra AQ Grant Funding | Funding Status | Estimated Cost of Measure | Measure Status | Reduction in Pollutant / Emission from Measure | Key Performance Indicator | Progress to Date                               | Comments / Barriers to Implementation  |
|-------------|--|---------------------------------------|----------------|-------------------------|------------------------------------|------------------------|----------------|------------------------|----------------|---------------------------|----------------|--|---------------------------|--|--|
|             | PHASE 5 – Rodmill roundabout to town centre                  | Infrastructure                        |                |                         |                                    |                        |                |                        |                |                           |                |  |                           |  |  |
| 6           | Eastbourne Town Centre Improvement scheme Phase 1            | Transport Planning and Infrastructure | Other          |                         | 2021                               | ESCC, EBC              | Defra          |                        |                |                           | Completed      |  |                           | Constructed                                    |  |
| 7           | Eastbourne town centre improvement scheme Phase 2a           | Transport Planning and Infrastructure | Other          |                         | 2023                               | ESCC, EBC              | Defra          |                        |                |                           | Planning       |  |                           | Detailed design                                |  |
| 8           | Eastbourne town centre improvement scheme Phase 2b           | Transport Planning and Infrastructure | Other          |                         |                                    | ESCC, EBC              | Defra          |                        |                |                           | Planning       |  |                           | Detailed design                                | Will be seeking funding for this phase   |
| 9           | A22/A2290 MRN Corridor Study (Golden Jubilee Way to Seaside) | Transport Planning and Infrastructure | Other          |                         |                                    | ESCC                   | Defra          |                        |                |                           | Planning       |  |                           | Consultation & Outline business case developed | Consultation delayed due to impact of the Covid 19 Pandemic on operations of the council |
| 10          | Eastbourne Walking and Cycle Network - Horsey Way Phase      | Transport Planning and                | Cycle network  |                         | 2023                               | ESCC                   | Defra          |                        |                |                           | Planning       |  |                           | Consultation detailed design                   | Consultation delayed due to  |

| Measure No. | Measure  | Category                              | Classification | Year Measure Introduced | Estimated / Actual Completion Year | Organisations Involved | Funding Source | Defra AQ Grant Funding | Funding Status | Estimated Cost of Measure | Measure Status | Reduction in Pollutant / Emission from Measure | Key Performance Indicator | Progress to Date                            | Comments / Barriers to Implementation  |
|-------------|--|---------------------------------------|----------------|-------------------------|------------------------------------|------------------------|----------------|------------------------|----------------|---------------------------|----------------|--|---------------------------|---|--|
|             | 1B (Cavendish Place to Ringwood Road)                              | Infrastructure                        |                |                         |                                    |                        |                |                        |                |                           |                |  |                           | September 2021                              | impact of the Covid 19 Pandemic on operations of the council                             |
| 11          | Eastbourne Walking and Cycle Network - Langney Rise cycle route    | Transport Planning and Infrastructure | Cycle network  |                         | 2023                               | ESCC                   | Defra          |                        |                |                           | Planning       |  |                           | Consultation detailed design September 2021 | Consultation delayed due to impact of the Covid 19 Pandemic on operations of the council |
| 12          | Eastbourne Walking and Cycle Network- Willingdon Drove cycle route | Transport Planning and Infrastructure | Cycle network  |                         | 2023                               | ESCC                   | Defra          |                        |                |                           | Planning       |  |                           | Consultation detailed design September 2021 | Consultation delayed due to impact of the Covid 19 Pandemic on operations of the council |

| Measure No. | Measure  | Category                              | Classification | Year Measure Introduced | Estimated / Actual Completion Year | Organisations Involved | Funding Source | Defra AQ Grant Funding | Funding Status | Estimated Cost of Measure | Measure Status | Reduction in Pollutant / Emission from Measure | Key Performance Indicator | Progress to Date                            | Comments / Barriers to Implementation  |
|-------------|--|---------------------------------------|----------------|-------------------------|------------------------------------|------------------------|----------------|------------------------|----------------|---------------------------|----------------|--|---------------------------|---|--|
| 13          | Eastbourne / South Wealden cycling and walking improvements - Stone Cross Royal Parade via Langney | Transport Planning and Infrastructure | Cycle network  |                         | 2023                               | ESCC                   | Defra          |                        |                |                           | Planning       |  |                           | Consultation detailed design September 2021 | Consultation delayed due to impact of the Covid 19 Pandemic on operations of the council |
| 14          | Eastbourne / South Wealden cycling and walking improvements- Eastbourne Cycle Parking              | Transport Planning and Infrastructure | Cycle network  |                         | 2022                               | ESCC                   | Defra          |                        |                |                           | Planning       |  |                           | Consultation detailed design September 2021 | Consultation delayed due to impact of the Covid 19 Pandemic on operations of the council |
| 15          | Eastbourne / South Wealden cycling and walking improvements - Eastbourne town centre cycle routes  | Transport Planning and Infrastructure | Cycle network  |                         | 2023                               | ESCC                   | Defra          |                        |                |                           | Planning       |  |                           | Consultation detailed design September 2021 | Consultation delayed due to impact of the Covid 19 Pandemic on operations                |

| Measure No. | Measure  | Category                              | Classification | Year Measure Introduced | Estimated / Actual Completion Year | Organisations Involved | Funding Source | Defra AQ Grant Funding | Funding Status | Estimated Cost of Measure | Measure Status | Reduction in Pollutant / Emission from Measure | Key Performance Indicator | Progress to Date | Comments / Barriers to Implementation   |
|-------------|--|---------------------------------------|----------------|-------------------------|------------------------------------|------------------------|----------------|------------------------|----------------|---------------------------|----------------|--|---------------------------|------------------|---|
|             |  |                                       |                |                         |                                    |                        |                |                        |                |                           |                |  |                           |                  | of the council  |
| 16          | Eastbourne / South Wealden cycling and walking improvements- Eastbourne Town Centre Wayfinding | Transport Planning and Infrastructure | Cycle network  |                         | 2022                               | EBC                    | Defra          |                        |                |                           | Implementation |  |                           | Construction     | Delivery delayed due to impact of the Covid 19 Pandemic on operations of the council      |
| 17          | Eastbourne seafront cycle feasibility study  | Transport Planning and Infrastructure | Cycle network  |                         | 2023                               | ESCC                   | Defra          |                        |                |                           | Planning       |  |                           | Feasibility      |   |
| 18          | New pipeline schemes - cycling infrastructure (Local Cycling & Walking Infrastructure Plan)    | Transport Planning and Infrastructure | Cycle network  |                         | 2023                               | ESCC                   | Defra          |                        |                |                           | Planning       |  |                           | Feasibility      | Commissioning delayed due to impact of the Covid 19 Pandemic on operations of the council |

| Measure No. | Measure  | Category                              | Classification | Year Measure Introduced | Estimated / Actual Completion Year | Organisations Involved | Funding Source     | Defr a AQ Grant Funding | Funding Status | Estimated Cost of Measure | Measure Status | Reduction in Pollutant / Emission from Measure | Key Performance Indicator                   | Progress to Date | Comments / Barriers to Implementation |
|-------------|--|---------------------------------------|----------------|-------------------------|------------------------------------|------------------------|--------------------|-------------------------|----------------|---------------------------|----------------|--|---|------------------|---------------------------------------|
| 19          | Reduce emissions from idling vehicles a) Install "cut engine cut pollution" signs (i.e. schools, taxi & bus terminals) b) Raise awareness through eco-driving campaign c) investigate enforcing legislation (issue fines | Transport Planning and Infrastructure | Other          |                         |                                    | EBC                    | In-house resources |                         |                |                           | Implementation |  | NO <sub>2</sub> /Participation/Enforcements | Ongoing          | As funding available                  |

## PM<sub>2.5</sub> – Lewes District Council's Approach to Reducing Emissions and/or Concentrations

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

In DEFRA's recently published Clean Air Strategy 2019<sup>4</sup> the government want to cut PM<sub>2.5</sub> levels to those recommended by the World Health Organisation:

*'We will progressively cut public exposure to particulate matter pollution as suggested by the World Health Organisation. We will halve the population living in areas with concentrations of fine particulate matter above WHO guideline levels (10µg/m<sup>3</sup>) by 2025.'*

Although LDC does not directly measure PM<sub>2.5</sub> at this stage, by taking other various measures such as the schools anti-idling campaign and other actions/plans mentioned in Section 2 and by reviewing, remodelling and implementing possible new initiatives under the Lewes Air Quality Action Plan – these would only benefit the reduction in pollutants generally, including PM<sub>2.5</sub>.

Plans are also in place for the addition of PM<sub>2.5</sub> monitors at both of LDC's Automatic Monitoring Stations. It is expected that both locations will monitor PM<sub>2.5</sub> in 2022, helping the Council to gain a clearer understanding of local concentrations and the effects of measures to improve them.

In 2020, Lewes District Council monitored PM<sub>10</sub> at the new Newhaven automatic monitor (LS7), which can be used in the interim to estimate PM<sub>2.5</sub> concentrations.

A report by UK-AIR which compared the concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> at numerous locations throughout the UK found that in urban areas, the ratio of PM<sub>2.5</sub>:PM<sub>10</sub> is, on average, 0.67. The annual mean concentration of PM<sub>10</sub> recorded in Newhaven in 2020 was 24µg/m<sup>3</sup>. Using this ratio, it is possible to estimate that PM<sub>2.5</sub> concentrations at this location would be 16.1µg/m<sup>3</sup>.

## PM<sub>2.5</sub> – Eastbourne Borough Council's Approach to Reducing Emissions and/or Concentrations

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

Site EB3 Holly Place has a continuous automatic monitor measuring PM<sub>2.5</sub>. Data capture at this site during 2018 was 98%, giving an annual mean of 9µg/m<sup>3</sup>. This figure is lower than last years (10.4µg/m<sup>3</sup>).

In DEFRA's recently published Clean Air Strategy 2019 the government want to cut PM<sub>2.5</sub> levels to those recommended by the World Health Organisation:

*'We will progressively cut public exposure to particulate matter pollution as suggested by the World Health Organisation. We will halve the population living in areas with concentrations of fine particulate matter above WHO guideline levels (10 µg/m<sup>3</sup>) by 2025.'*

Public Health England published a very informative 'Health Matters'<sup>7</sup> of which an example page is reproduced below. The document demonstrates the causes and effects of pollutants and links the problems of air pollution and health. This connects well with the schools anti-idling campaign the council are running, anti-idling signage installed in a few heavily trafficked/problematic areas and the new Clean Burn Sussex education campaign which has been recently undertaken. Results for this are to be reported soon.

Whilst the measures stated in this section are not necessarily aimed directly at one pollutant such as PM<sub>2.5</sub>, they will indirectly aid reductions in all pollutant levels, including particulates such as PM<sub>2.5</sub> by encouraging more people to walk and cycle and make use of public transport rather than private vehicles.

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

This section sets out the monitoring undertaken within 2020 by Lewes District Council and Eastbourne Borough Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2016 and 2020 to allow monitoring trends to be identified and discussed.

#### Summary of Monitoring Undertaken at Lewes District Council

##### 3.1.1 Automatic Monitoring Sites

Lewes District Council undertook automatic (continuous) monitoring at 2 sites during 2020. Table A.1 in Appendix A shows the details of the automatic monitoring sites. **Error! Reference source not found.** in Appendix A shows the details of the LS5 Lewes Town Centre site and LS7 Lewes Road, Newhaven site.

NB. Local authorities do not have to report annually on the following pollutants: 1,3 butadiene, benzene, carbon monoxide and lead, unless local circumstances indicate there is a problem. National monitoring results are available at <http://www.sussex-air.net/>, with automatic monitoring results also available through the UK-Air website.

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

**Figure 3.1: Annual average NO<sub>2</sub> concentration in µg/m<sup>3</sup> measured at Lewes automatic monitoring site in the Lewes district 2016-2020**





**Error! Reference source not found.** shows the annual average NO<sub>2</sub> concentrations measured at the automatic monitoring sites from 2016-2020. Annual mean concentration levels demonstrate consistent levels below the 40µg/m<sup>3</sup> annual mean objective for NO<sub>2</sub>.

### 3.1.2 Non-Automatic Monitoring Sites

LDC undertook non-automatic (passive) monitoring of NO<sub>2</sub> at 50 sites during 2020. Table A.3 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 (where the annual mean data capture is below 75% and greater than 25%), and distance correction. Further details on adjustments are provided in Appendix C.

### 3.1.3 Nitrogen Dioxide (NO<sub>2</sub>)

Table A.5 and Table A.6 in Appendix A compare the ratified and adjusted monitored NO<sub>2</sub> annual mean concentrations for the past five years with the air quality objective of 40µg/m<sup>3</sup>. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the full 2020 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 includes distance corrected values, only where relevant.

Figures 3.2 -3.5 show trends in nitrogen dioxide measured by diffusion tubes from 2016 to 2020. Each figure illustrates the concentration for groups of sites with data readings.

#### **Figure 3.2: Annual average NO<sub>2</sub> concentration (diffusion tubes) located within the A259 Newhaven Ring Road AQMA from 2016-2020:**

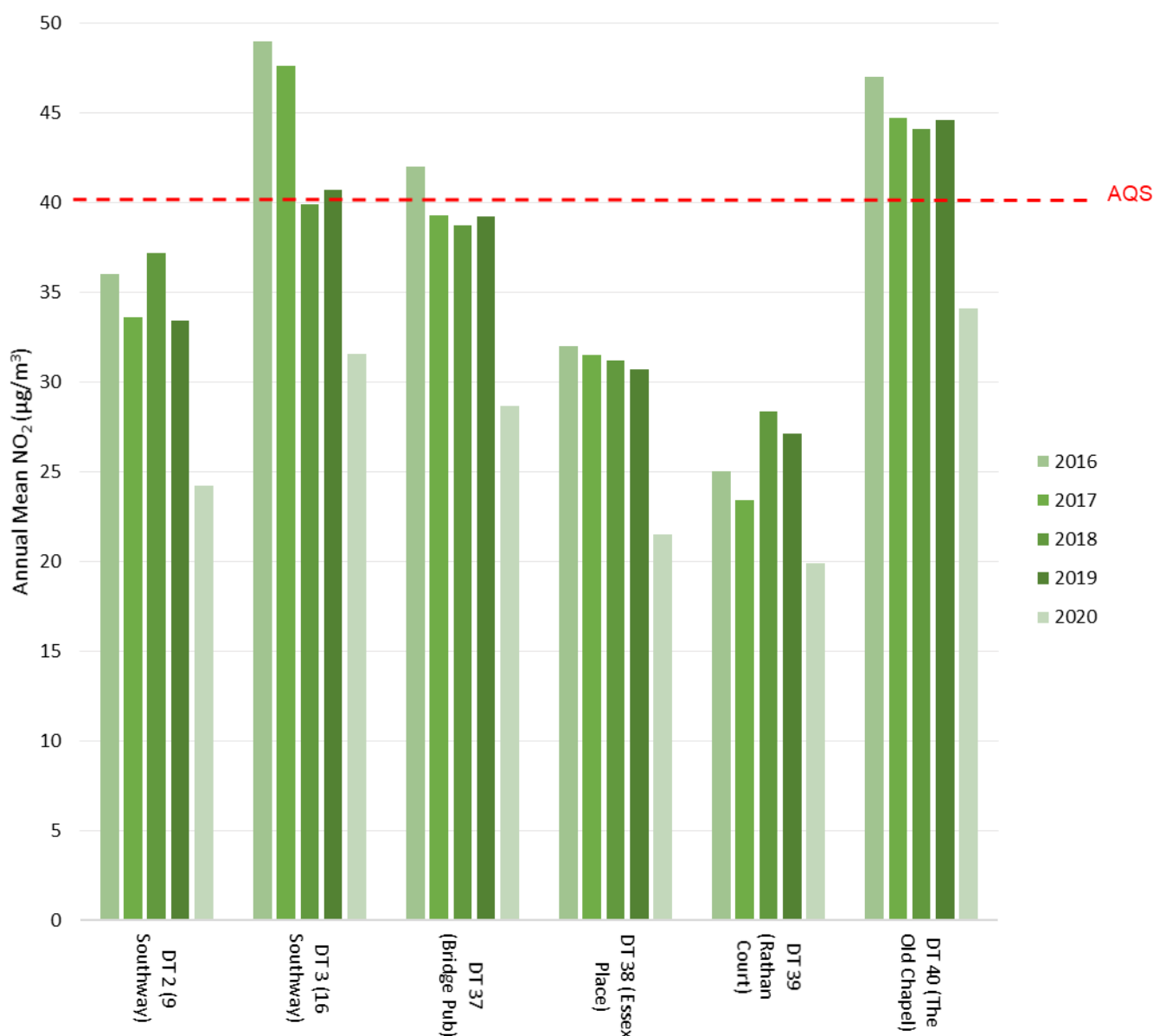


Figure 3.2 shows the diffusion tubes within the Newhaven AQMA. It is clear that two sites, DT 3 (16 Southway) and DT 40 (The Old Chapel) have illustrated consistent exceedances over the last few years. The Old Chapel is located on a hill, near a junction and will receive 'launch' exhaust from vehicles that have stopped and then started on the hill at the nearby pedestrian crossing. 16 Southway is at the apex of the hill, where vehicles queue and there is a nearby bus stop. In 2019, following the distance correction to the nearest relevant receptor, 16 Southway met the annual objective of below  $40\mu\text{g}/\text{m}^3$ . However, an annual mean exceedance was still identified following distance correction of The Old Chapel diffusion tube in 2019.

In 2020, due primarily to the impacts of COVID-19, dramatic reductions in  $\text{NO}_2$  were observed at all diffusion tubes within Newhaven's AQMA, so much that no tube recorded concentrations within 10% of the annual mean AQS.

Excluding the year 2020, which is likely to be considered an aberrational year in the future, there is no discernible trend to suggest an overall increase or decrease in NO<sub>2</sub> concentrations – they appear to have slightly fallen on some tubes but increased on others.

**Figure 3.3: Annual average NO<sub>2</sub> concentration (diffusion tubes) located within the Lewes Town Centre AQMA from 2016-2020**

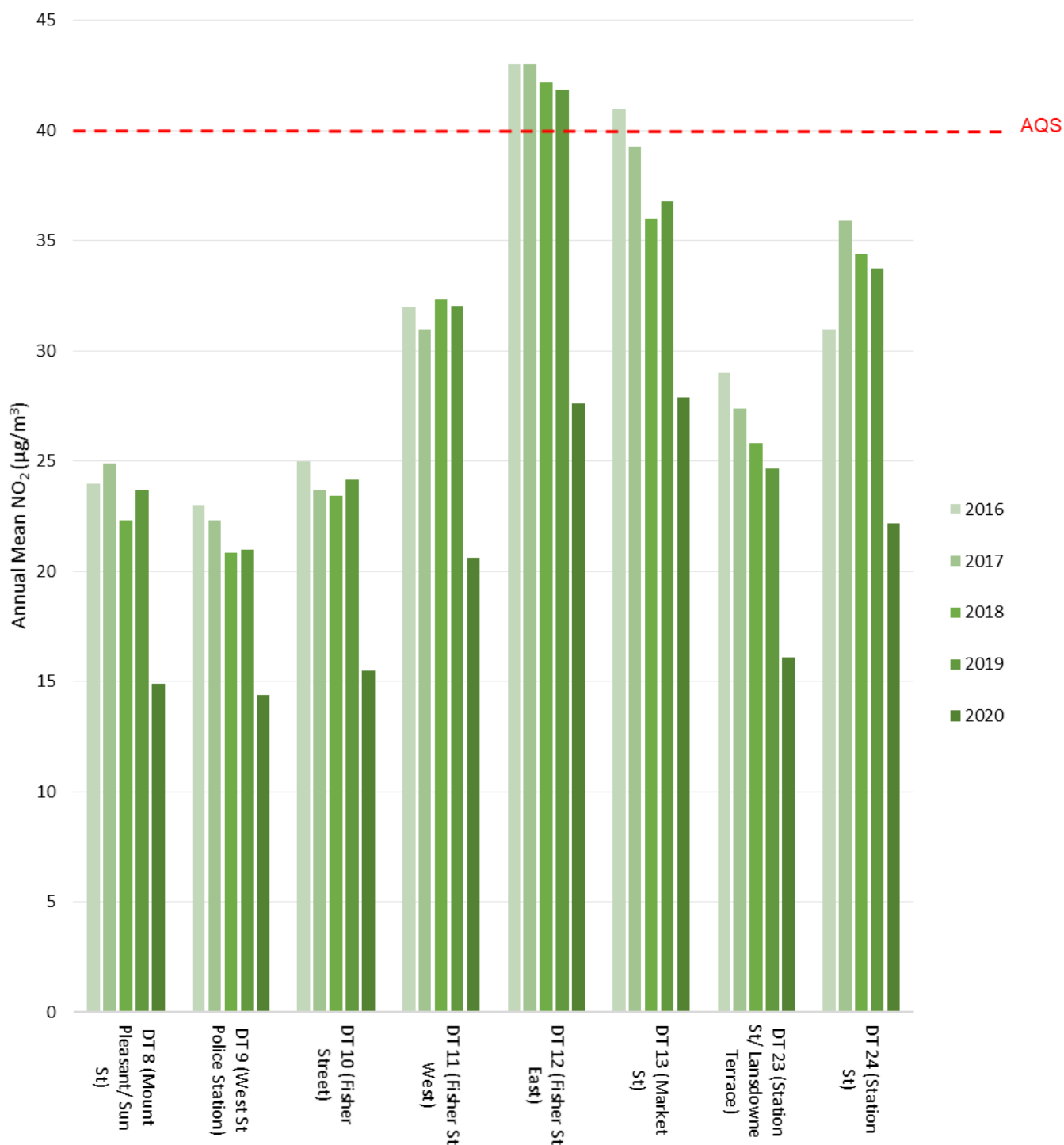


Figure 3.3 shows the diffusion tubes which are located within the Lewes AQMA. DT 12 (Fisher St East) has consistently shown concentrations above annual objective over the last 5 years, with the exception of 2020. This is the only diffusion tube within the Lewes Town Centre AQMA to be in exceedance of the annual mean AQS since 2017. Fisher Street diffusion tubes have shown consistently lower concentrations towards the middle and western end of this street where a change of priority in traffic was implemented as part of recommendations made in the Lewes AQAP 2009.

In 2020, due primarily to the impacts of COVID-19, dramatic reductions in NO<sub>2</sub> were observed at all diffusion tubes within the Lewes Town AQMA, so much so that no tube recorded concentrations within 25% of the annual mean AQS.

**Figure 3.4: Annual average NO<sub>2</sub> concentration (diffusion tubes) located within the Newhaven area but not in the AQMA from 2016-2020.**

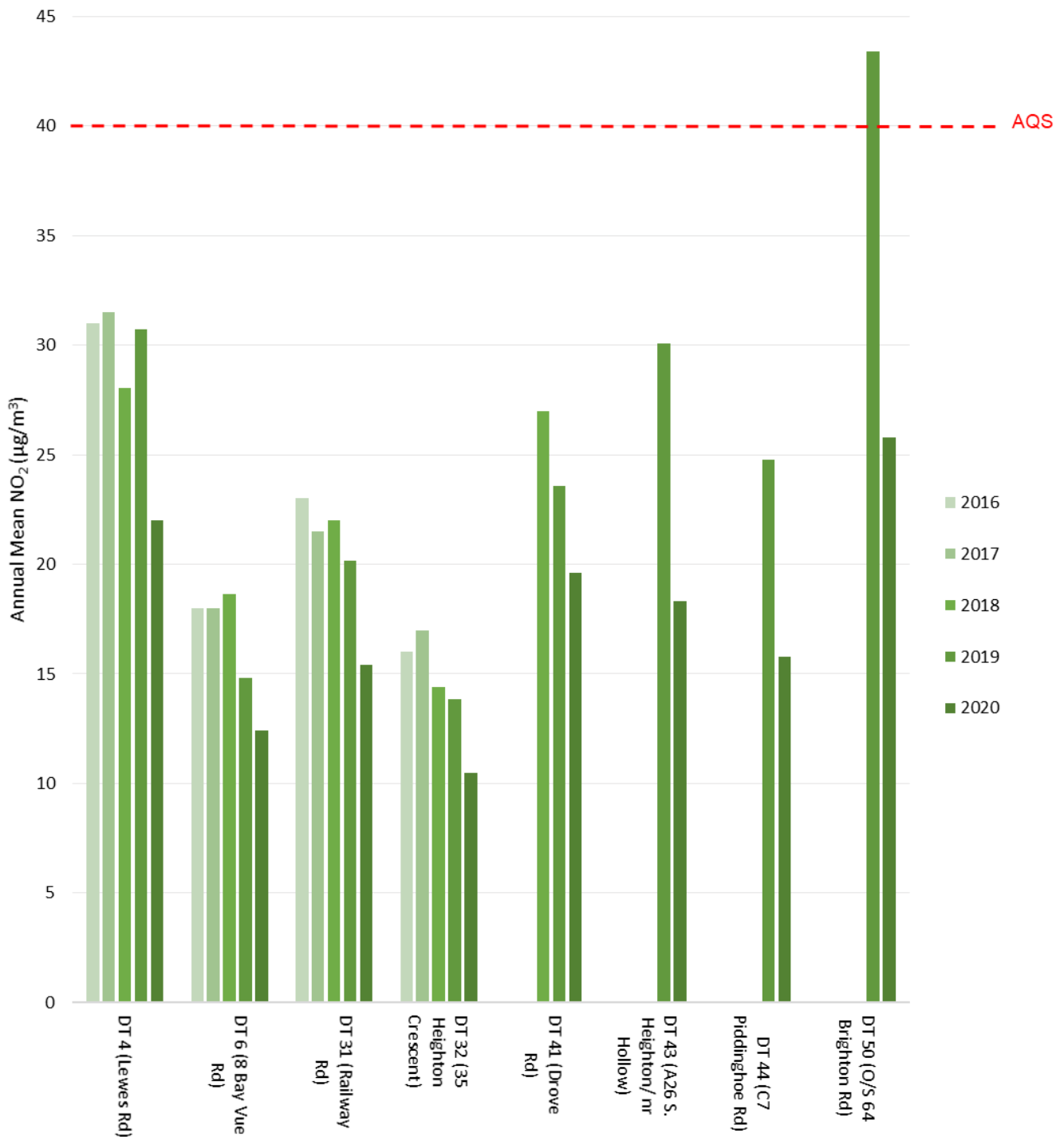


Figure 3.4 shows that the majority of sites demonstrate considerably lower concentrations than those tubes found within the Newhaven AQMA, except for the recently added tube outside 64 Brighton Road which showed readings above the annual mean AQS in 2019. It should be noted that this tube location sits on the edge of the Newhaven AQMA, therefore actions taken to improve air quality within the AQMA are likely to have a positive influence on this diffusion tube as well.

In 2020, due primarily to the impacts of COVID-19, dramatic reductions in NO<sub>2</sub> were observed at all diffusion tubes across the area, so much so that no tube recorded concentrations within 25% of the annual mean AQS.

**Figure 3.5: Annual average NO<sub>2</sub> concentration (diffusion tubes) located within the Lewes area but not in the AQMA from 2016-2020.**

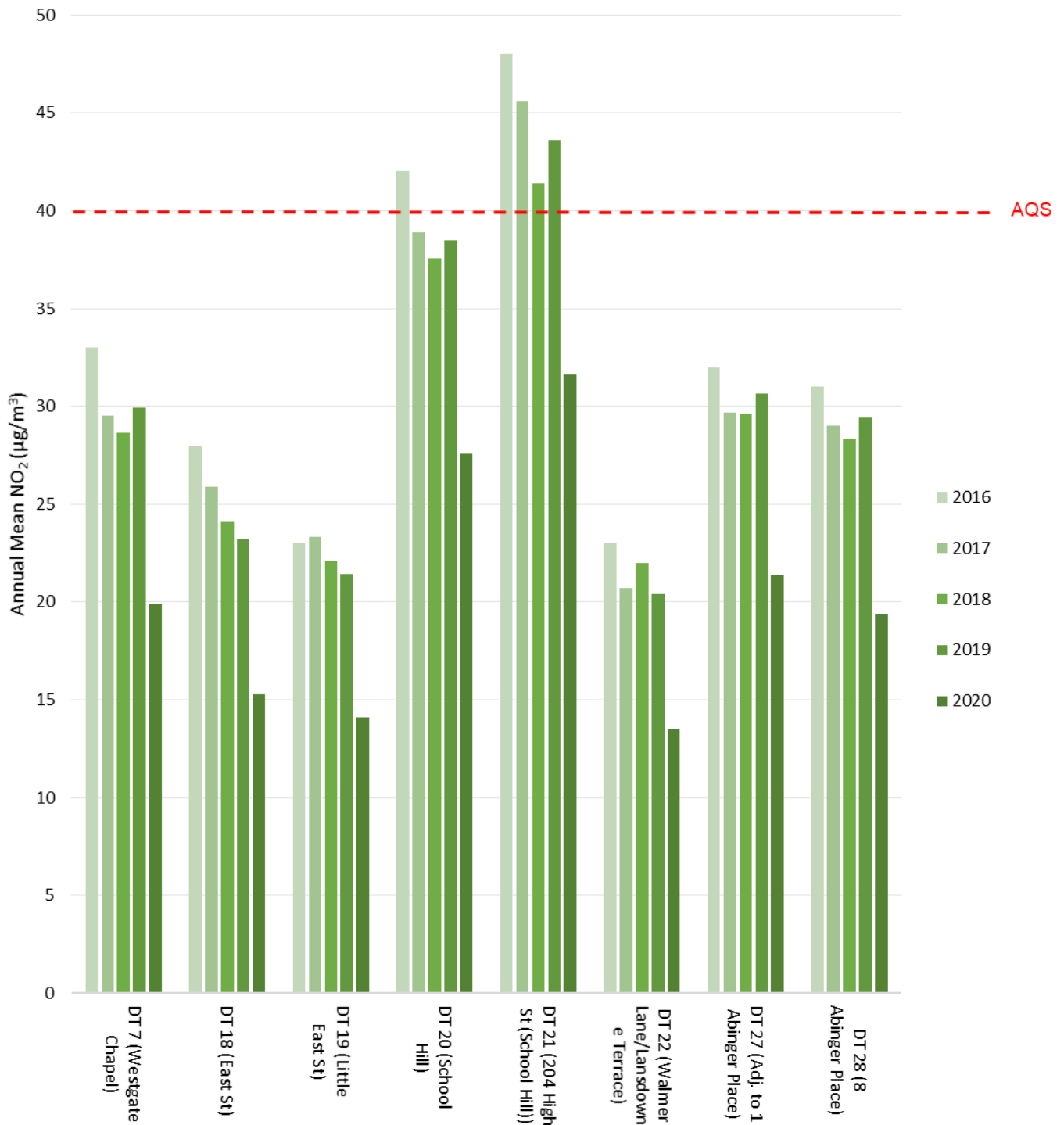


Figure 3.5 demonstrates that although all of these sites may be out of the Lewes AQMA, not all have been meeting the annual objective since 2016. School Hill sits on a steep incline with a bus stop nearby and just above the area of site DT 21 (204 High St). When this road is busy, there is fume from vehicle 'launch' and often idling when waiting in traffic. Acknowledging that this diffusion tube was in exceedance of the annual mean AQS, even when distance corrected to the relevant exposure location, LDC are considering the amendment of their Lewes Town AQMA to encompass this section of road. More details regarding this matter will be provided within the upcoming Lewes Town AQAP.

All other sites indicate concentrations within the annual objective, with most showing a decrease over time, which is encouraging. In 2020, due primarily to the impacts of COVID-19, dramatic reductions in NO<sub>2</sub> were observed at all diffusion tubes outside the Lewes Town AQMA, so much that no tube recorded concentrations within 10% of the annual mean AQS.

Table A.9 in Appendix A compares the ratified continuous monitored NO<sub>2</sub> hourly mean concentrations for the past five years with the air quality objective of 200µg/m<sup>3</sup>, not to be exceeded more than 18 times per year.

### 3.1.4 Particulate Matter (PM<sub>10</sub>)

Table A.11 in Appendix A: Monitoring Results compares the ratified and adjusted monitored PM<sub>10</sub> annual mean concentrations for the past five years with the air quality objective of 40µg/m<sup>3</sup>.

In 2020, no PM<sub>10</sub> data was collected at automatic monitor LS5 (Lewes Town Centre). The automatic monitor is due to be replaced in November 2021, following which, PM<sub>10</sub> will once again be continuously monitored. LS7 on London Road (Newhaven) monitored PM<sub>10</sub> from 24<sup>th</sup> March 2020, capturing data for 58% of the year. In its first year of operation, the annual concentration recorded was 23µg/m<sup>3</sup>, well below the annual mean AQS, with 1 recorded exceedance of the 24-hour mean 50µg/m<sup>3</sup> AQS.

Table A.13 in Appendix A compares the ratified continuous monitored PM<sub>10</sub> daily mean concentrations for the past five years with the air quality objective of 50µg/m<sup>3</sup>, not to be exceeded more than 35 times per year.



## Summary of Monitoring Undertaken at Eastbourne Borough Council

### 3.1.5 Automatic Monitoring Sites

Eastbourne Borough Council undertook automatic (continuous) monitoring at 2 sites during 2020. Table A.2 in Appendix A shows the details of the automatic monitoring sites, EB1 Devonshire Park site and EB3 Holly Place site.

EB3 is part of the Government's AURN (Automatic Urban and Rural Network) and continuously monitors NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>. In 2020, NO<sub>2</sub> concentrations decreased by 1µg/m<sup>3</sup> from the previous year to 10µg/m<sup>3</sup>. PM<sub>10</sub> concentrations decreased by over 1 µg/m<sup>3</sup> to 14µg/m<sup>3</sup> in 2020, whilst PM<sub>2.5</sub> decreased to 9µg/m<sup>3</sup>. All concentrations were well below their respective short-term and annual mean AQSs.

EB1 is locally managed and monitors NO<sub>2</sub> and PM<sub>10</sub>. Concentrations of NO<sub>2</sub> at EB1 showed no obvious upward or downward trend between 2016 and 2019, but due to Covid-19, did markedly decrease in 2020 to a concentration of 11µg/m<sup>3</sup>. 2020 PM<sub>10</sub> concentrations remained constant from the 2019 levels, at 17µg/m<sup>3</sup>, well below the annual mean AQS.

Local authorities do not have to report annually on the following pollutants: 1,3 butadiene, benzene, carbon monoxide and lead, unless local circumstances indicate there is a problem. National monitoring results are available at <http://www.sussex-air.net/>, with automatic monitoring results also available through the UK-Air website.

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

**Figure 3.6: Annual average NO<sub>2</sub> concentration in µg/m<sup>3</sup> measured at the automatic monitoring sites in the Eastbourne Borough Council 2016-2020**

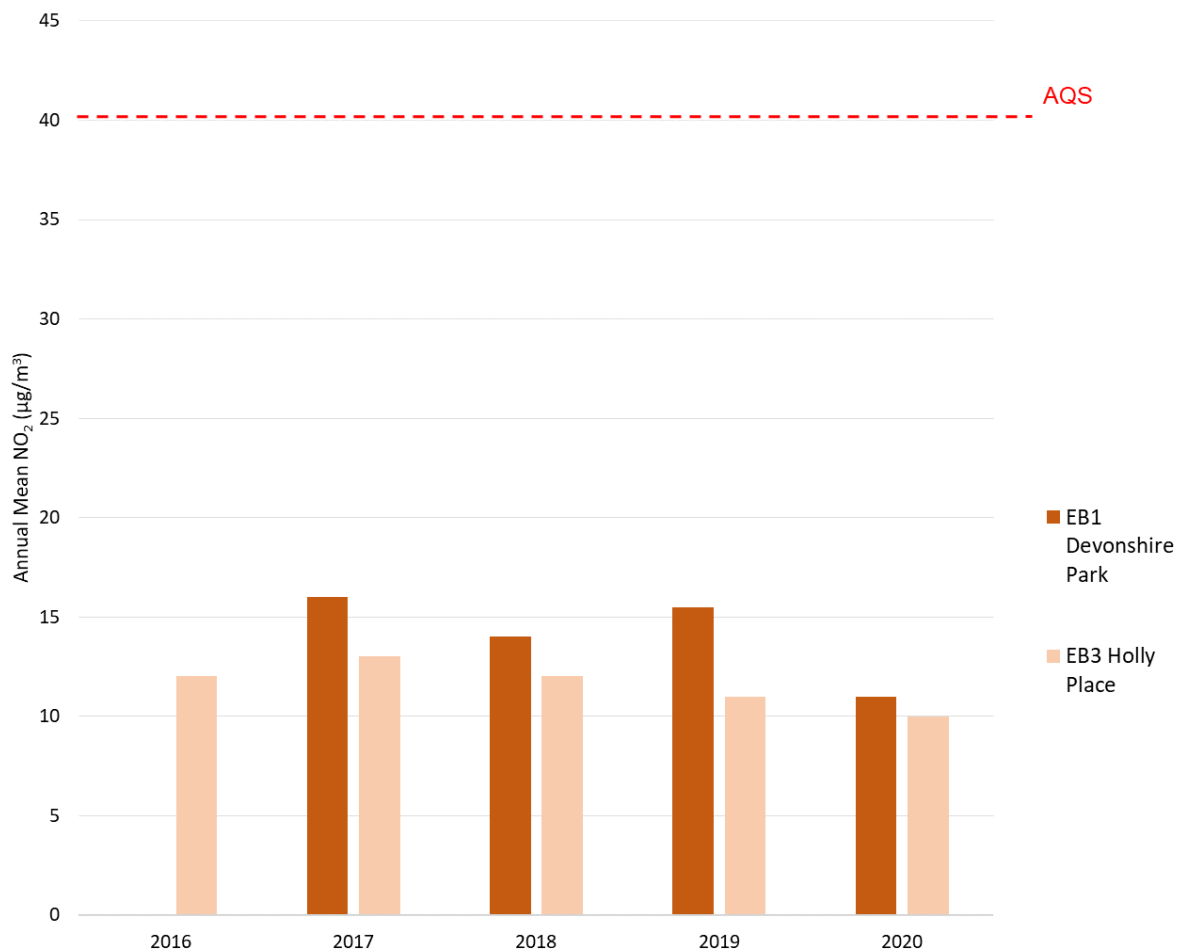


Figure 3.6 shows the annual average NO<sub>2</sub> concentrations measured at the automatic monitoring sites from 2016-2020. Annual mean concentration levels demonstrate consistent levels well below the 40µg/m<sup>3</sup> annual mean objective for NO<sub>2</sub>.

### 3.1.6 Non-Automatic Monitoring Sites

Eastbourne Borough Council undertook non- automatic (passive) monitoring of NO<sub>2</sub> at 22 sites during 2020. Table A.4 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided in Appendix D. The most recent non-automatic monitoring data is now available on: <http://www.sussex-air.net/Tools/NO2DiffusionMap.aspx>

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 (where the annual mean data capture is below 75% and greater than 25%), and distance correction. Further details on adjustments are provided in Appendix C.

### 3.1.7 Nitrogen Dioxide (NO<sub>2</sub>)

Table A.7 and Table A.8 in Appendix A compare the ratified and adjusted monitored NO<sub>2</sub> annual mean concentrations for the past five years with the air quality objective of 40µg/m<sup>3</sup>. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the full 2020 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.2 includes distance corrected values, only where relevant.

**Figure 3.7: Annual average NO<sub>2</sub> concentration (diffusion tubes) located within Eastbourne Borough Council from 2016-2020:**

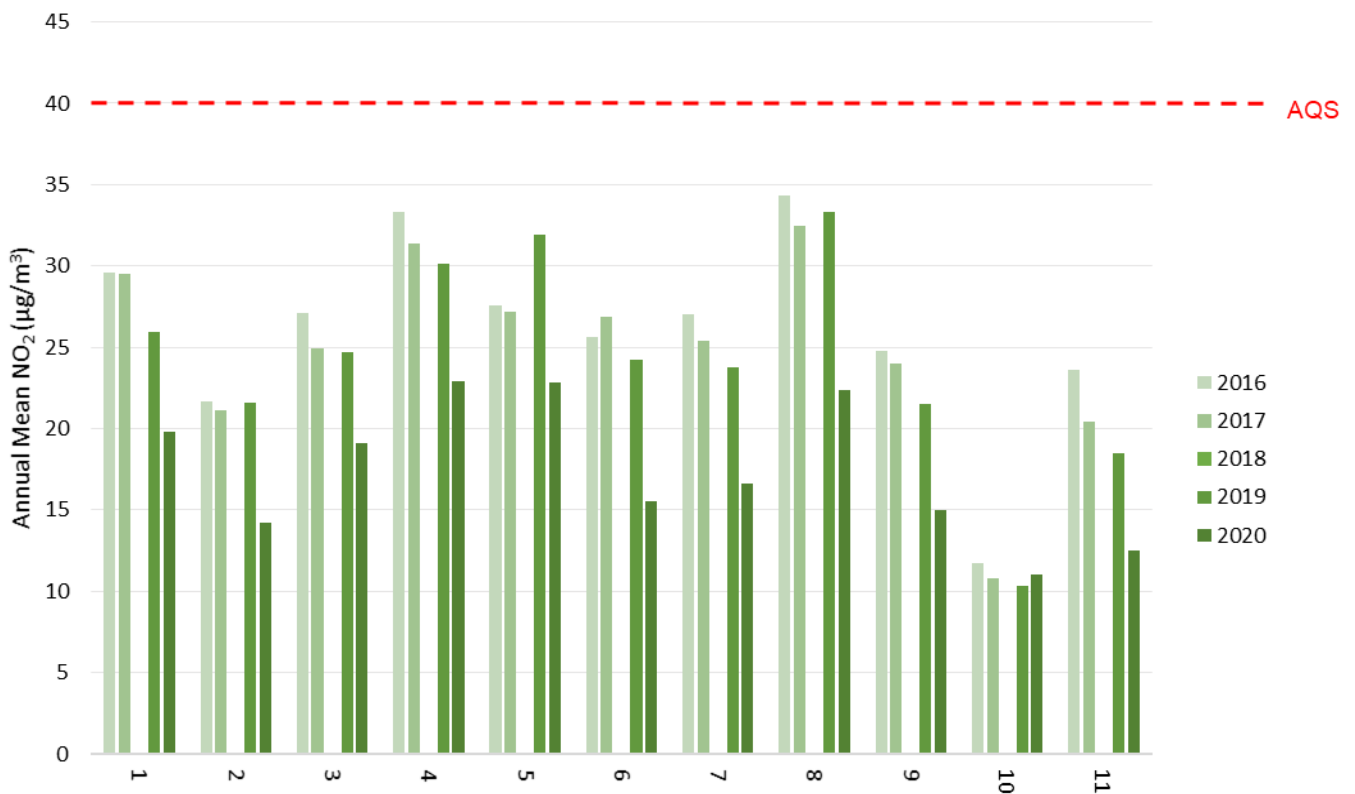


Figure 3.7 shows the trends at all original monitoring locations within the borough. Results show that no monitoring location has been in exceedance of the annual mean objective of  $40\mu\text{g}/\text{m}^3$  in the last 5 years. Prior to 2020, there was no discernible increase or decreasing trend in concentrations. The majority of concentrations decreased markedly as a consequence of the Covid-19 pandemic in 2020.

### 3.1.8 Particulate Matter (PM<sub>10</sub>)

Table A.12 in Appendix A: Monitoring Results compares the ratified and adjusted monitored PM<sub>10</sub> annual mean concentrations for the past five years with the air quality objective of  $40\mu\text{g}/\text{m}^3$ .

In 2020, PM<sub>10</sub> data was collected at both automatic monitors, with data capture rates of over 98%. In 2020, the annual concentrations recorded were  $17\mu\text{g}/\text{m}^3$  and  $14\mu\text{g}/\text{m}^3$ , at EB1 and EB3, respectively, well below the annual mean AQSs, with just 1 recorded exceedance of the 24-hour mean  $50\mu\text{g}/\text{m}^3$  AQS at EB1.

Table A.14 in Appendix A compares the ratified continuous monitored PM<sub>10</sub> daily mean concentrations for the past five years with the air quality objective of  $50\mu\text{g}/\text{m}^3$ , not to be exceeded more than 35 times per year.

### 3.1.9 Particulate Matter (PM<sub>2.5</sub>)

Table A.15 in Appendix A presents the ratified and adjusted monitored PM<sub>2.5</sub> annual mean concentrations for the past five years.

In 2020, PM<sub>2.5</sub> data was collected at EB3 Holly Place, with data capture rates of 98%. In 2020, the annual concentrations recorded was 9µg/m<sup>3</sup>, well below the annual mean AQSSs.

## Appendix A: Monitoring Results

**Table A.1 – Details of Automatic Monitoring Sites at Lewes District Council**

| Site ID | Site Name              | Site Type | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Pollutants Monitored                                | In AQMA? Which AQMA? | Monitoring Technique                                  | Distance to Relevant Exposure (m) <sup>(1)</sup> | Distance to kerb of nearest road (m) <sup>(2)</sup> | Inlet Height (m) |
|---------|------------------------|-----------|-------------------------|--------------------------|---|----------------------|---|--|---|------------------|
| LS5     | Lewes Town West Street | Roadside  | 541541                  | 110246                   | NO <sub>2</sub> ; PM <sub>10</sub>                  | YES (Lewes AQMA)     | Chemiluminescent and TEOM                             | 5  | 2.5   | 2                |
| LS7     | Lewes Road, Newhaven   | Roadside  | 544366                  | 101367                   | NO <sub>2</sub> ; PM <sub>10</sub> ; O <sub>3</sub> | Yes (Newhaven AQMA)  | Chemiluminescent, BAM Beta-attenuation, UV Absorption | 3.3  | 2.1   | 1.9              |

**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.2 – Details of Automatic Monitoring Sites at Eastbourne Borough Council**

| Site ID | Site Name           | Site Type        | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Pollutants Monitored                                   | In AQMA? Which AQMA? | Monitoring Technique                                 | Distance to Relevant Exposure (m) <sup>(1)</sup> | Distance to kerb of nearest road (m) <sup>(2)</sup> | Inlet Height (m) |
|---------|---------------------|------------------|-------------------------|--------------------------|--|----------------------|--|--|---|------------------|
| EB1     | EB1 Devonshire Park | Urban Background | 561150                  | 98341                    | NO <sub>2</sub> , PM <sub>10</sub> , O <sub>3</sub>    | NO                   | Chemiluminescent BAM Beta-attenuation; UV absorption | N/A  | 5   | 3                |
| EB3     | EB3 Holly Place     | Urban Background | 560085                  | 103118                   | NO <sub>2</sub> , PM <sub>10</sub> , PM <sub>2.5</sub> | NO                   | Chemiluminescent FDMS                                | N/A  | N/A   | 4                |

**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.3 – Details of Non-Automatic Monitoring Sites at Lewes District Council**

| Diffusion Tube ID | Site Name                              | Site Type        | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Pollutants Monitored | In AQMA? Which AQMA? | Distance to Relevant Exposure (m) <sup>(1)</sup> | Distance to kerb of nearest road (m) <sup>(2)</sup> | Tube Co-located with a Continuous Analyser? | Tube Height (m) |
|-------------------|--|------------------|-------------------------|--------------------------|----------------------|----------------------|--|---|---|-----------------|
| 1                 | Seaford- Sutton Pk Rd/Warwick Ave      | Roadside         | 548420                  | 99223                    | NO2                  | N                    | 4.5  | 2.8   | NO  | 2.8             |
| 2                 | LDC 10 - 9 Southway – Newhaven         | Kerbside         | 544354                  | 101388                   | NO2                  | Y (Newhaven)         | 5  | 1   | NO  | 2.5             |
| 3                 | LDC - 16 Southway – Newhaven           | Kerbside         | 544414                  | 101273                   | NO2                  | Y (Newhaven)         | 2.5  | 1   | NO  | 2.5             |
| 4                 | LDC 11 - Lewes Rd – Newhaven           | Roadside         | 544273                  | 101532                   | NO2                  | N                    | 4  | 2   | NO  | 2.5             |
| 5                 | Telscombe – South Coast Rd/Central Ave | Roadside         | 540063                  | 101263                   | NO2                  | N                    | 6  | 1.8   | NO  | 2.6             |
| 6                 | LDC 8 - 8 Bay Vue Rd - Newhaven        | Urban Background | 544521                  | 101089                   | NO2                  | N                    | 3  | N/A   | NO  | 2.5             |
| 7                 | LDC 25 - Westgate Chapel               | Roadside         | 541285                  | 109969                   | NO2                  | N                    | 2.2  | 1.9   | NO  | 2.3             |
| 8                 | LDC 26 - Mount Pleasant/Sun Street     | Roadside         | 541481                  | 110277                   | NO2                  | Y (Lewes)            | 0.5  | 2   | NO  | 2.5             |
| 9                 | LDC 27 - West St Police Station        | Roadside         | 541541                  | 110246                   | NO2                  | Y (Lewes)            | 5  | 2.6   | YES   | 2.3             |
| 10                | LDC 18 - Fisher Street                 | Kerbside         | 541505                  | 110236                   | NO2                  | Y (Lewes)            | 0  | 1.4   | NO  | 2.5             |
| 11                | LDC 36 - Fisher St West                | Kerbside         | 541519                  | 110167                   | NO2                  | Y (Lewes)            | N/A  | 1   | NO  | 2.2             |
| 12                | LDC 1- Fisher St East                  | Kerbside         | 541540                  | 110130                   | NO2                  | Y (Lewes)            | N/A  | 1   | NO  | 3.5             |
| 13                | LDC 29 - Market St                     | Kerbside         | 541598                  | 110169                   | NO2                  | Y (Lewes)            | 1.5  | 1   | NO  | 2.5             |



| Diffusion Tube ID | Site Name                                | Site Type        | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Pollutants Monitored | In AQMA? Which AQMA? | Distance to Relevant Exposure (m) <sup>(1)</sup> | Distance to kerb of nearest road (m) <sup>(2)</sup> | Tube Co-located with a Continuous Analyser? | Tube Height (m) |
|-------------------|--|------------------|-------------------------|--------------------------|----------------------|----------------------|--|---|---|-----------------|
| 14                | Peacehaven – o/s 223 South Coast Rd      | Kerbside         | 540969                  | 100974                   | NO2                  | N                    | 2.9  | 1.4   | NO  | 2.7             |
| 15                | LDC 31 - North St                        | Kerbside         | 541646                  | 110370                   | NO2                  | N                    | 5  | 1   | NO  | 3               |
| 16                | LDC 33 - Cullfail Tunnel/Thomas St       | Roadside         | 542178                  | 110454                   | NO2                  | N                    | 8  | 5   | NO  | 3               |
| 17                | LDC 4 - 159 Malling St – Lewes           | Roadside         | 542315                  | 110733                   | NO2                  | N                    | 3  | 2   | NO  | 3.5             |
| 18                | LDC 6 East Street                        | Roadside         | 541669                  | 110278                   | NO2                  | N                    | 0  | 3.5   | NO  | 2.5             |
| 19                | LDC 30 - Little East St                  | Roadside         | 541726                  | 110335                   | NO2                  | N                    | 1  | 2.7   | NO  | 2.5             |
| 20                | LDC 45 - School Hill                     | Kerbside         | 541755                  | 110206                   | NO2                  | N                    | 2.5  | 1   | NO  | 2.5             |
| 21                | LDC 34 - 204 High St (School Hill)       | Roadside         | 541684                  | 110181                   | NO2                  | N                    | 0  | 2.7   | NO  | 2.6             |
| 22                | LDC 35 - Walmer Lane/Lansdowne Terrace   | Roadside         | 541709                  | 109990                   | NO2                  | N                    | 1.8  | 3   | NO  | 2.4             |
| 23                | LDC 23 - Station St/Lansdowne Terrace    | Roadside         | 541615                  | 109968                   | NO2                  | Y (Lewes)            | N/A  | 1.8   | NO  | 2.5             |
| 24                | LDC 14 - Station St - Lewes              | Roadside         | 541603                  | 110001                   | NO2                  | Y (Lewes)            | 2  | 1.9   | NO  | 3               |
| 25                | LS6 - Denton Community Centre            | Urban Background | 545142                  | 102433                   | NO2                  | N                    | N/A  | N/A   | NO  | 2               |
| 26                | Peacehaven – South Coast Rd/Stepping Ave | Roadside         | 541231                  | 100957                   | NO2                  | N                    | 10   | 3   | NO  | 2.7             |

| Diffusion Tube ID | Site Name                                      | Site Type        | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Pollutants Monitored | In AQMA? Which AQMA? | Distance to Relevant Exposure (m) <sup>(1)</sup> | Distance to kerb of nearest road (m) <sup>(2)</sup> | Tube Co-located with a Continuous Analyser? | Tube Height (m) |
|-------------------|--|------------------|-------------------------|--------------------------|----------------------|----------------------|--|---|---|-----------------|
| 27                | LDC 46 - No Entry Sign Adj. To 1 Abinger Place | Roadside         | 541438                  | 110293                   | NO2                  | N                    | 4  | 1.5   | NO  | 2               |
| 28                | LDC 47 - 8 Abinger Place                       | Roadside         | 541430                  | 110328                   | NO2                  | N                    | 1.2  | 1.5   | NO  | 2.5             |
| 29                | Peacehaven – o/s 53 South Coast Rd             | Roadside         | 542168                  | 100675                   | NO2                  | N                    | 10   | 3   | NO  | 2.7             |
| 30                | ESCC 20 - A259 SFD (nr Chyngton Gardens)       | Roadside         | 550077                  | 99291                    | NO2                  | N                    | 10   | 1.5   | NO  | 3               |
| 31                | ESCC 23 - Railway Rd – Newhaven                | Kerbside         | 544996                  | 101264                   | NO2                  | N                    | 5  | 1   | NO  | 3               |
| 32                | ESCC 24 - 35 Heighton Crescent - Denton        | Urban Background | 544908                  | 102704                   | NO2                  | N                    | 10   | N/A   | NO  | 1.8             |
| 33                | ESSCC 2 - Ringmer Village Hall                 | Roadside         | 544681                  | 112441                   | NO2                  | N                    | N/A  | 1.8   | NO  | 2               |
| 34                | ESCC 18 - High St – Ditchling                  | Roadside         | 532605                  | 115203                   | NO2                  | N                    | 5  | 2   | NO  | 2.5             |
| 35                | Ditchling High Street 2                        | Kerbside         | 532587                  | 115410                   | NO2                  | N                    | 1  | 1   | NO  | 1.8             |
| 36                | ESCC 22 - Southover High St – Lewes            | Roadside         | 541032                  | 109613                   | NO2                  | N                    | 1  | 2   | NO  | 2.1             |
| 37                | Newhaven - Bridge Pub                          | Kerbside         | 544603                  | 101485                   | NO2                  | Y (Newhaven)         | N/A  | 0.5   | NO  | 2               |
| 38                | Newhaven- Essex Place                          | Roadside         | 544497                  | 101499                   | NO2                  | Y (Newhaven)         | 5  | 1.2   | NO  | 2               |
| 39                | Newhaven - Rathan Court                        | Roadside         | 544330                  | 101423                   | NO2                  | Y (Newhaven)         | 10   | 1.5   | NO  | 2               |

| Diffusion Tube ID | Site Name                              | Site Type | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Pollutants Monitored | In AQMA? Which AQMA? | Distance to Relevant Exposure (m) <sup>(1)</sup> | Distance to kerb of nearest road (m) <sup>(2)</sup> | Tube Co-located with a Continuous Analyser? | Tube Height (m) |
|-------------------|--|-----------|-------------------------|--------------------------|----------------------|----------------------|--|---|---|-----------------|
| 40                | Newhaven - The Old Chapel              | Roadside  | 544497                  | 101285                   | NO2                  | Y (Newhaven)         | 3  | 1.5   | NO  | 2.5             |
| 41                | Drove Rd - Newhaven                    | Roadside  | 544948                  | 101549                   | NO2                  | N                    | N/A  | 4   | NO  | 2.5             |
| 42                | Kings Gate Road - Falmer Roundabout    | Roadside  | 535187                  | 108928                   | NO2                  | N                    | 20   | 2.5   | NO  | 1.9             |
| 43                | A26 South Heighton/nr Hollow           | Roadside  | 544886                  | 102879                   | NO2                  | N                    | 12   | 1   | NO  | 1               |
| 44                | C7 Piddinghoe Rd                       | Roadside  | 543431                  | 103022                   | NO2                  | N                    | 3.5  | 1.3   | NO  | 1.8             |
| 45                | O/S Kingston Primary school            | Roadside  | 539543                  | 108284                   | NO2                  | N                    | 15   | 2.5   | NO  | 1.8             |
| 46                | Opp Seaford Station - Station Approach | Roadside  | 548167                  | 99160                    | NO2                  | N                    | 2  | 1.5   | NO  | 3               |
| 47                | Plumpton Green/Station Rd, flood sign  | Roadside  | 536441                  | 116231                   | NO2                  | N                    | 7  | 1   | NO  | 2               |
| 48                | Barcombe High Str o/s old shop         | Roadside  | 542029                  | 115781                   | NO2                  | N                    | 3  | 2.5   | NO  | 2.5             |
| 49                | O/S Covers, Cooksbridge                | Roadside  | 540141                  | 113548                   | NO2                  | N                    | 0  | 2   | NO  | 2               |
| 50                | O/S 64 Brighton Rd                     | Roadside  | 544185                  | 101350                   | NO2                  | N                    | 2.5  | 1.5   | NO  | 2.8             |

**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.4 – Details of Non-Automatic Monitoring Sites at Eastbourne Borough Council**

| Diffusion Tube ID | Site Name                         | Site Type        | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Pollutants Monitored | In AQMA? Which AQMA? | Distance to Relevant Exposure (m) <sup>(1)</sup> | Distance to kerb of nearest road (m) <sup>(2)</sup> | Tube Co-located with a Continuous Analyser? | Tube Height (m) |
|-------------------|-----------------------------------|------------------|-------------------------|--------------------------|----------------------|----------------------|--|---|---|-----------------|
| 1                 | PO Upperton Road                  | Kerbside         | 560774                  | 99163                    | NO <sub>2</sub>      | N/A                  | 2  | 0   | NO  | 3.1             |
| 2                 | E/B1 Langney Rd                   | Kerbside         | 561458                  | 99116                    | NO <sub>2</sub>      | N/A                  | 4  | 0   | NO  | 2.9             |
| 3                 | SRTS4 Pevensey Rd                 | Kerbside         | 561568                  | 99108                    | NO <sub>2</sub>      | N/A                  | 3  | 0   | NO  | 2.7             |
| 4                 | SRTS2 Seaside East                | Kerbside         | 561717                  | 99061                    | NO <sub>2</sub>      | N/A                  | 3  | 0   | YES   | 2.8             |
| 5                 | SRTS1 Seaside West                | Kerbside         | 561621                  | 99004                    | NO <sub>2</sub>      | N/A                  | 3  | 0   | NO  | 2.8             |
| 6                 | SRTS3 Cavendish Place             | Kerbside         | 561737                  | 98948                    | NO <sub>2</sub>      | N/A                  | 3  | 0   | NO  | 2.6             |
| 7                 | 61 Royal Parade Princes Park      | Kerbside         | 562692                  | 100149                   | NO <sub>2</sub>      | N/A                  | 4  | 0   | NO  | 2.7             |
| 8                 | 53- Seaside (Tesco)               | Kerbside         | 562655                  | 100970                   | NO <sub>2</sub>      | N/A                  | 10   | 0   | NO  | 2.8             |
| 9                 | ESCC102/EB6 Friday St/Larkspur Dr | Kerbside         | 561885                  | 103847                   | NO <sub>2</sub>      | N/A                  | 8  | 1   | NO  | 2.7             |
| 10                | E/B5 Woodland Ave                 | Urban Background | 559392                  | 102006                   | NO <sub>2</sub>      | N/A                  | N/A  | 0   | NO  | 1.8             |
| 11                | 26- East Dean Road                | Roadside         | 557829                  | 98190                    | NO <sub>2</sub>      | N/A                  | 20   | 3   | NO  | 2               |
| 12                | 6 The Goffs                       | Roadside         | 560440                  | 99352                    | NO <sub>2</sub>      | N/A                  | 3  | 1.95  | NO  | 3               |

| Diffusion Tube ID | Site Name                               | Site Type | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Pollutants Monitored | In AQMA? Which AQMA? | Distance to Relevant Exposure (m) <sup>(1)</sup> | Distance to kerb of nearest road (m) <sup>(2)</sup> | Tube Co-located with a Continuous Analyser? | Tube Height (m) |
|-------------------|---|-----------|-------------------------|--------------------------|----------------------|----------------------|--|---|---|-----------------|
| 13                | 32 The Avenue                           | Kerbside  | 560943                  | 99480                    | NO <sub>2</sub>      | N/A                  | 7  | 0.9   | NO  | 2.4             |
| 14                | 68 Susans Rd                            | Kerbside  | 561354                  | 99279                    | NO <sub>2</sub>      | N/A                  | 3  | 0.6   | NO  | 2.4             |
| 15                | 109 Whitley Rd                          | Roadside  | 561527                  | 99846                    | NO <sub>2</sub>      | N/A                  | 6.5  | 1.5   | NO  | 2.5             |
| 16                | opp 7 Lewes Rd                          | Roadside  | 561043                  | 99828                    | NO <sub>2</sub>      | N/A                  | 2  | 1.6   | NO  | 2.7             |
| 17                | Lottbridge Drove<br>Tesco               | Kerbside  | 562583                  | 101109                   | NO <sub>2</sub>      | N/A                  | N/A  | 0.9   | NO  | 2.7             |
| 18                | Mountfield Rd, next<br>to rail crossing | Roadside  | 560749                  | 102189                   | NO <sub>2</sub>      | N/A                  | 5  | 1.6   | NO  | 2.6             |
| 19                | o/s 43 Brassy Ave                       | Roadside  | 560505                  | 102196                   | NO <sub>2</sub>      | N/A                  | 7  | 1.7   | NO  | 2.5             |
| 20                | Kings Drive/<br>Weavers Close           | Roadside  | 560134                  | 100561                   | NO <sub>2</sub>      | N/A                  | 5.5  | 2.9   | NO  | 2.8             |
| 21                | o/s/ 181 Kings Drive                    | Roadside  | 559894                  | 101035                   | NO <sub>2</sub>      | N/A                  | 11   | 0.9   | NO  | 2.9             |
| 22                | 114 Willingdon Rd                       | Roadside  | 559730                  | 100251                   | NO <sub>2</sub>      | N/A                  | 10   | 1.5   | NO  | 2.4             |

**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.5 – Annual Mean NO<sub>2</sub> Monitoring Results: Automatic Monitoring (µg/m<sup>3</sup>) at Lewes District Council**

| Site ID | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Site Type | Valid Data Capture for Monitoring Period (%) <sup>(1)</sup> | Valid Data Capture 2020 (%) <sup>(2)</sup> | 2016 | 2017 | 2018 | 2019 | 2020 |
|---------|-------------------------|--------------------------|-----------|---|--|------|------|------|------|------|
| LS5     | 541541                  | 110246                   | Roadside  | 100   | 100  | 24   | 21   | 19   | 19   | 16   |
| LS7     | 544366                  | 101367                   | Roadside  | 99  | 63   | -    | -    | -    | -    | 21   |

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16**

☒ **Reported concentrations are those at the location of the monitoring site (annualised, as required), i.e. prior to any fall-off with distance correction**

**Notes:**

The annual mean concentrations are presented as µg/m<sup>3</sup>.

Exceedances of the NO<sub>2</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.

All means have been “annualised” as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

(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.6 – Annual Mean NO<sub>2</sub> Monitoring Results: Non-Automatic Monitoring (µg/m<sup>3</sup>) at Lewes District Council**

| Diffusion Tube ID | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Site Type        | Valid Data Capture for Monitoring Period (%) <sup>(1)</sup> | Valid Data Capture 2020 (%) <sup>(2)</sup> | 2016      | 2017        | 2018        | 2019        | 2020 |
|-------------------|-------------------------|--------------------------|------------------|---|--|-----------|-------------|-------------|-------------|------|
| 1                 | 548420                  | 99223                    | Roadside         | 100.0   | 100.0                                      | -         | -           | 24.5        | 25.2        | 18.5 |
| 2                 | 544354                  | 101388                   | Kerbside         | 100.0   | 100.0                                      | 36        | 33.6        | 37.2        | 33.4        | 24.2 |
| 3                 | 544414                  | 101273                   | Kerbside         | 100.0   | 100.0                                      | <b>49</b> | <b>47.6</b> | 39.9        | <b>40.7</b> | 31.6 |
| 4                 | 544273                  | 101532                   | Roadside         | 100.0   | 100.0                                      | 31        | 31.5        | 28.1        | 30.7        | 22.0 |
| 5                 | 540063                  | 101263                   | Roadside         | 100.0   | 100.0                                      | -         | 25.6        | 23.0        | 23.4        | 16.6 |
| 6                 | 544521                  | 101089                   | Urban Background | 83.3  | 83.3                                       | 18        | 18          | 18.7        | 14.8        | 12.4 |
| 7                 | 541285                  | 109969                   | Roadside         | 100.0   | 100.0                                      | 33        | 29.5        | 28.7        | 29.9        | 19.9 |
| 8                 | 541481                  | 110277                   | Roadside         | 75.0  | 75.0                                       | 24        | 24.9        | 22.3        | 23.7        | 14.9 |
| 9                 | 541541                  | 110246                   | Roadside         | 100.0   | 100.0                                      | 23        | 22.3        | 20.8        | 21.0        | 14.4 |
| 10                | 541505                  | 110236                   | Kerbside         | 100.0   | 100.0                                      | 25        | 23.7        | 23.4        | 24.1        | 15.5 |
| 11                | 541519                  | 110167                   | Kerbside         | 100.0   | 100.0                                      | 32        | 31          | 32.4        | 32.0        | 20.6 |
| 12                | 541540                  | 110130                   | Kerbside         | 100.0   | 100.0                                      | <b>43</b> | <b>43</b>   | <b>42.2</b> | <b>41.9</b> | 27.6 |
| 13                | 541598                  | 110169                   | Kerbside         | 100.0   | 100.0                                      | <b>41</b> | 39.3        | 36.0        | 36.8        | 27.9 |
| 14                | 540969                  | 100974                   | Kerbside         | 100.0   | 100.0                                      | -         | 32.5        | 28.8        | 30.5        | 21.3 |

| Diffusion Tube ID | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Site Type        | Valid Data Capture for Monitoring Period (%) <sup>(1)</sup> | Valid Data Capture 2020 (%) <sup>(2)</sup> | 2016      | 2017        | 2018        | 2019        | 2020 |
|-------------------|-------------------------|--------------------------|------------------|---|--|-----------|-------------|-------------|-------------|------|
| 15                | 541646                  | 110370                   | Kerbside         | 100.0   | 100.0                                      | 25        | 23          | 21.9        | 21.4        | 15.1 |
| 16                | 542178                  | 110454                   | Roadside         | 100.0   | 100.0                                      | 32        | 31          | 29.5        | 30.4        | 22.3 |
| 17                | 542315                  | 110733                   | Roadside         | 100.0   | 100.0                                      | 33        | 30.8        | 30.5        | 29.8        | 20.9 |
| 18                | 541669                  | 110278                   | Roadside         | 100.0   | 100.0                                      | 28        | 25.9        | 24.1        | 23.2        | 15.3 |
| 19                | 541726                  | 110335                   | Roadside         | 100.0   | 100.0                                      | 23        | 23.3        | 22.1        | 21.4        | 14.1 |
| 20                | 541755                  | 110206                   | Kerbside         | 100.0   | 100.0                                      | <b>42</b> | 38.9        | 37.6        | 38.5        | 27.6 |
| 21                | 541684                  | 110181                   | Roadside         | 91.7  | 91.7                                       | <b>48</b> | <b>45.6</b> | <b>41.4</b> | <b>43.6</b> | 31.6 |
| 22                | 541709                  | 109990                   | Roadside         | 91.7  | 91.7                                       | 23        | 20.7        | 22.0        | 20.4        | 13.5 |
| 23                | 541615                  | 109968                   | Roadside         | 100.0   | 100.0                                      | 29        | 27.4        | 25.8        | 24.7        | 16.1 |
| 24                | 541603                  | 110001                   | Roadside         | 75.0  | 75.0                                       | 31        | 35.9        | 34.4        | 33.7        | 22.2 |
| 25                | 545142                  | 102433                   | Urban Background | 100.0   | 100.0                                      | 13        | 14.1        | 11.6        | 11.2        | 8.2  |
| 26                | 541231                  | 100957                   | Roadside         | 100.0   | 100.0                                      | -         | 25.4        | 23.2        | 22.8        | 16.9 |
| 27                | 541438                  | 110293                   | Roadside         | 100.0   | 100.0                                      | 32        | 29.7        | 29.6        | 30.7        | 21.4 |
| 28                | 541430                  | 110328                   | Roadside         | 50.0  | 50.0                                       | 31        | 29          | 28.3        | 29.4        | 19.2 |



| Diffusion Tube ID | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Site Type        | Valid Data Capture for Monitoring Period (%) <sup>(1)</sup> | Valid Data Capture 2020 (%) <sup>(2)</sup> | 2016      | 2017        | 2018        | 2019        | 2020 |
|-------------------|-------------------------|--------------------------|------------------|---|--|-----------|-------------|-------------|-------------|------|
| 29                | 542168                  | 100675                   | Roadside         | 100.0   | 100.0                                      | -         | 21.4        | 21.9        | 19.5        | 14.5 |
| 30                | 550077                  | 99291                    | Roadside         | 91.7  | 91.7                                       | 35        | 33.5        | 30.2        | 29.0        | 22.5 |
| 31                | 544996                  | 101264                   | Kerbside         | 100.0   | 100.0                                      | 23        | 21.5        | 22.0        | 20.1        | 15.4 |
| 32                | 544908                  | 102704                   | Urban Background | 91.7  | 91.7                                       | 16        | 17          | 14.4        | 13.8        | 10.5 |
| 33                | 544681                  | 112441                   | Roadside         | 100.0   | 100.0                                      | 24        | 22.5        | 21.8        | 20.9        | 14.7 |
| 34                | 532605                  | 115203                   | Roadside         | 91.7  | 91.7                                       | 31        | 27.9        | 29.7        | 26.9        | 18.2 |
| 35                | 532587                  | 115410                   | Kerbside         | 91.7  | 91.7                                       | 27        | 23.6        | 23.1        | 21.4        | 13.8 |
| 36                | 541032                  | 109613                   | Roadside         | 100.0   | 100.0                                      | 36        | 31.7        | 31.9        | 32.2        | 20.3 |
| 37                | 544603                  | 101485                   | Kerbside         | 100.0   | 100.0                                      | <b>42</b> | 39.3        | 38.7        | 39.2        | 28.7 |
| 38                | 544497                  | 101499                   | Roadside         | 100.0   | 100.0                                      | 32        | 31.5        | 31.2        | 30.7        | 21.5 |
| 39                | 544330                  | 101423                   | Roadside         | 83.3  | 83.3                                       | 25        | 23.4        | 28.4        | 27.1        | 19.9 |
| 40                | 544497                  | 101285                   | Roadside         | 100.0   | 100.0                                      | <b>47</b> | <b>44.7</b> | <b>44.1</b> | <b>44.6</b> | 34.1 |
| 41                | 544948                  | 101549                   | Roadside         | 41.7  | 41.7                                       | -         | -           | 27.0        | 23.6        | 19.1 |
| 42                | 535187                  | 108928                   | Roadside         | 100.0   | 100.0                                      | -         | -           | -           | <b>57.0</b> | 25.6 |

| Diffusion Tube ID | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Site Type | Valid Data Capture for Monitoring Period (%) <sup>(1)</sup> | Valid Data Capture 2020 (%) <sup>(2)</sup> | 2016 | 2017 | 2018 | 2019        | 2020 |
|-------------------|-------------------------|--------------------------|-----------|---|--|------|------|------|-------------|------|
| 43                | 544886                  | 102879                   | Roadside  | 100.0   | 100.0                                      | -    | -    | -    | 29.5        | 18.3 |
| 44                | 543431                  | 103022                   | Roadside  | 100.0   | 100.0                                      | -    | -    | -    | 24.3        | 15.8 |
| 45                | 539543                  | 108284                   | Roadside  | 100.0   | 100.0                                      | -    | -    | -    | 21.1        | 16.9 |
| 46                | 548167                  | 99160                    | Roadside  | 100.0   | 100.0                                      | -    | -    | -    | 29.5        | 17.9 |
| 47                | 536441                  | 116231                   | Roadside  | 83.3  | 83.3                                       | -    | -    | -    | 13.9        | 8.5  |
| 48                | 542029                  | 115781                   | Roadside  | 100.0   | 100.0                                      | -    | -    | -    | 16.6        | 10.7 |
| 49                | 540141                  | 113548                   | Roadside  | 100.0   | 100.0                                      | -    | -    | -    | 18.5        | 10.7 |
| 50                | 544185                  | 101350                   | Roadside  | 100.0   | 100.0                                      | -    | -    | -    | <b>42.6</b> | 25.8 |

☒ Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16

☒ Diffusion tube data has been bias adjusted

☒ Reported concentrations are those at the location of the monitoring site (bias adjusted and annualised, as required), i.e. prior to any fall-off with distance correction

**Notes:**

The annual mean concentrations are presented as µg/m<sup>3</sup>.

Exceedances of the NO<sub>2</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.

NO<sub>2</sub> annual means exceeding 60µg/m<sup>3</sup>, indicating a potential exceedance of the NO<sub>2</sub> 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.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

(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.7 – Annual Mean NO<sub>2</sub> Monitoring Results: Automatic Monitoring (µg/m<sup>3</sup>) at Eastbourne Borough Council**

| Site ID | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Site Type        | Valid Data Capture for Monitoring Period (%) <sup>(1)</sup> | Valid Data Capture 2020 (%) <sup>(2)</sup> | 2016 | 2017 | 2018 | 2019 | 2020 |
|---------|-------------------------|--------------------------|------------------|---|--|------|------|------|------|------|
| EB1     | 561150                  | 98341                    | Urban Background | 99  | 99   | N/A  | 16   | 14   | 15.5 | 11   |
| EB3     | 560085                  | 103118                   | Urban Background | 51  | 51   | 12   | 13   | 12   | 11   | 9    |

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16**

☒ **Reported concentrations are those at the location of the monitoring site (annualised, as required), i.e. prior to any fall-off with distance correction**

**Notes:**

The annual mean concentrations are presented as µg/m<sup>3</sup>.

Exceedances of the NO<sub>2</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.

All means have been “annualised” as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

(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.8 – Annual Mean NO<sub>2</sub> Monitoring Results: Non-Automatic Monitoring (µg/m<sup>3</sup>) at Eastbourne Borough Council**

| Diffusion Tube ID | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Site Type        | Valid Data Capture for Monitoring Period (%) <sup>(1)</sup> | Valid Data Capture 2020 (%) <sup>(2)</sup> | 2016 | 2017 | 2018 | 2019 | 2020 |
|-------------------|-------------------------|--------------------------|------------------|---|--|------|------|------|------|------|
| 1                 | 560774                  | 99163                    | Kerbside         | 100.0   | 100.0                                      | N/A  | 16   | 14   | 15.5 | 19.8 |
| 2                 | 561458                  | 99116                    | Kerbside         | 100.0   | 100.0                                      | 12   | 13   | 12   | 11.7 | 14.2 |
| 3                 | 561568                  | 99108                    | Kerbside         | 100.0   | 100.0                                      | 29.6 | 29.5 | N/A  | 26.0 | 19.1 |
| 4                 | 561717                  | 99061                    | Kerbside         | 100.0   | 100.0                                      | 21.7 | 21.1 | N/A  | 21.6 | 22.9 |
| 5                 | 561621                  | 99004                    | Kerbside         | 100.0   | 100.0                                      | 27.1 | 24.9 | N/A  | 24.7 | 22.8 |
| 6                 | 561737                  | 98948                    | Kerbside         | 100.0   | 100.0                                      | 33.3 | 31.4 | N/A  | 30.1 | 15.5 |
| 7                 | 562692                  | 100149                   | Kerbside         | 100.0   | 100.0                                      | 27.6 | 27.2 | N/A  | 31.9 | 16.6 |
| 8                 | 562655                  | 100970                   | Kerbside         | 100.0   | 100.0                                      | 25.6 | 26.9 | N/A  | 24.2 | 22.4 |
| 9                 | 561885                  | 103847                   | Kerbside         | 91.7  | 91.7                                       | 27   | 25.4 | N/A  | 23.8 | 15.0 |
| 10                | 559392                  | 102006                   | Urban Background | 25.0  | 25.0                                       | 34.3 | 32.5 | N/A  | 33.3 | 11.0 |
| 11                | 557829                  | 98190                    | Roadside         | 91.7  | 91.7                                       | 24.8 | 24   | N/A  | 21.5 | 12.5 |
| 12                | 560440                  | 99352                    | Roadside         | 91.7  | 91.7                                       | 11.7 | 10.8 | N/A  | 10.4 | 17.5 |
| 13                | 560943                  | 99480                    | Kerbside         | 100.0   | 100.0                                      | 23.6 | 20.4 | N/A  | 18.5 | 17.1 |
| 14                | 561354                  | 99279                    | Kerbside         | 100.0   | 100.0                                      | -    | -    | -    | 25.9 | 17.3 |

| Diffusion Tube ID | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Site Type | Valid Data Capture for Monitoring Period (%) <sup>(1)</sup> | Valid Data Capture 2020 (%) <sup>(2)</sup> | 2016 | 2017 | 2018 | 2019 | 2020 |
|-------------------|-------------------------|--------------------------|-----------|---|--|------|------|------|------|------|
| 15                | 561548                  | 99869                    | Roadside  | 100.0   | 100.0                                      | -    | -    | -    | 27.3 | 26.8 |
| 16                | 561043                  | 99828                    | Roadside  | 100.0   | 100.0                                      | -    | -    | -    | 25.6 | 17.3 |
| 17                | 562583                  | 101109                   | Kerbside  | 100.0   | 100.0                                      | -    | -    | -    | 39.3 | 18.9 |
| 18                | 560749                  | 102189                   | Roadside  | 91.7  | 91.7                                       | -    | -    | -    | 27.4 | 18.0 |
| 19                | 560505                  | 102196                   | Roadside  | 100.0   | 100.0                                      | -    | -    | -    | 31.8 | 16.2 |
| 20                | 560134                  | 100561                   | Roadside  | 100.0   | 100.0                                      | -    | -    | -    | 30.8 | 12.9 |
| 21                | 559894                  | 101035                   | Roadside  | 100.0   | 100.0                                      | -    | -    | -    | 25.1 | 18.0 |
| 22                | 559730                  | 100251                   | Roadside  | 100.0   | 100.0                                      | -    | -    | -    | 20.8 | 21.0 |

☒ Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16

☒ Diffusion tube data has been bias adjusted

☒ Reported concentrations are those at the location of the monitoring site (bias adjusted and annualised, as required), i.e. prior to any fall-off with distance correction

**Notes:**

The annual mean concentrations are presented as µg/m<sup>3</sup>.

Exceedances of the NO<sub>2</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.

NO<sub>2</sub> annual means exceeding 60µg/m<sup>3</sup>, indicating a potential exceedance of the NO<sub>2</sub> 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.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

(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.9 – 1-Hour Mean NO<sub>2</sub> Monitoring Results, Number of 1-Hour Means > 200µg/m<sup>3</sup> in Lewes District Council**

| Site ID | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Site Type | Valid Data Capture for Monitoring Period (%) <sup>(1)</sup> | Valid Data Capture 2020 (%) <sup>(2)</sup> | 2016 | 2017 | 2018 | 2019 | 2020   |
|---------|-------------------------|--------------------------|-----------|---|--|------|------|------|------|--------|
| LS5     | 541541                  | 110246                   | Roadside  | 100   | 100  | 0    | 0    | 0    | 0    | 0      |
| LS7     | 544366                  | 101367                   | Roadside  | 99  | 63   | N/A  | N/A  | N/A  | N/A  | 0 (60) |

**Notes:**

Results are presented as the number of 1-hour periods where concentrations greater than 200µg/m<sup>3</sup> have been recorded.

Exceedances of the NO<sub>2</sub> 1-hour mean objective (200µg/m<sup>3</sup> 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.10 – 1-Hour Mean NO<sub>2</sub> Monitoring Results, Number of 1-Hour Means > 200µg/m<sup>3</sup> in Eastbourne Borough Council**

| Site ID | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Site Type        | Valid Data Capture for Monitoring Period (%) <sup>(1)</sup> | Valid Data Capture 2020 (%) <sup>(2)</sup> | 2016 | 2017 | 2018 | 2019 | 2020   |
|---------|-------------------------|--------------------------|------------------|---|--|------|------|------|------|--------|
| EB1     | 561150                  | 98341                    | Urban Background | 99  | 99   | 0    | 0    | 0    | 0    | 0      |
| EB3     | 560085                  | 103118                   | Urban Background | 51  | 51   | 0    | 0    | 0    | 0    | 0 (45) |

**Notes:**

Results are presented as the number of 1-hour periods where concentrations greater than 200µg/m<sup>3</sup> have been recorded.

Exceedances of the NO<sub>2</sub> 1-hour mean objective (200µg/m<sup>3</sup> 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.11 – Annual Mean PM<sub>10</sub> Monitoring Results (µg/m<sup>3</sup>) at Lewes District Council**

| Site ID | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Site Type | Valid Data Capture for Monitoring Period (%) <sup>(1)</sup> | Valid Data Capture 2020 (%) <sup>(2)</sup> | 2016 | 2017 | 2018 | 2019 | 2020 |
|---------|-------------------------|--------------------------|-----------|---|--|------|------|------|------|------|
| LS5     | 541541                  | 110246                   | Roadside  | 0   | 0  | 18   | 20   | 18   | 18   | N/A  |
| LS7     | 544366                  | 101367                   | Roadside  | 90  | 58   | N/A  | N/A  | N/A  | N/A  | 23.9 |

☒ Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16

**Notes:**

The annual mean concentrations are presented as µg/m<sup>3</sup>.

Exceedances of the PM<sub>10</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.

All means have been “annualised” as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C 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.12 – Annual Mean PM<sub>10</sub> Monitoring Results (µg/m<sup>3</sup>) at Eastbourne Borough Council**

| Site ID | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Site Type        | Valid Data Capture for Monitoring Period (%) <sup>(1)</sup> | Valid Data Capture 2020 (%) <sup>(2)</sup> | 2016 | 2017 | 2018 | 2019 | 2020 |
|---------|-------------------------|--------------------------|------------------|---|--|------|------|------|------|------|
| EB1     | 561150                  | 98341                    | Urban Background | 99  | 99   | N/A  | 19   | 19   | 17   | 17   |
| EB3     | 560085                  | 103118                   | Urban Background | 98  | 98   | 18   | N/A  | N/A  | 15.5 | 14   |

☒ Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16

**Notes:**

The annual mean concentrations are presented as µg/m<sup>3</sup>.

Exceedances of the PM<sub>10</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.

All means have been “annualised” as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C 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.13 – 24-Hour Mean PM<sub>10</sub> Monitoring Results, Number of PM<sub>10</sub> 24-Hour Means > 50µg/m<sup>3</sup> at Lewes District Council**

| Site ID | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Site Type | Valid Data Capture for Monitoring Period (%) <sup>(1)</sup> | Valid Data Capture 2020 (%) <sup>(2)</sup> | 2016 | 2017 | 2018 | 2019 | 2020   |
|---------|-------------------------|--------------------------|-----------|---|--|------|------|------|------|--------|
| LS5     | 541541                  | 110246                   | Roadside  | 0   | 0  | 2    | 1    | 0    | 1    | N/A    |
| LS7     | 544366                  | 101367                   | Roadside  | 90  | 58   | N/A  | N/A  | N/A  | N/A  | 1 (35) |

**Notes:**

Results are presented as the number of 24-hour periods where daily mean concentrations greater than 50µg/m<sup>3</sup> have been recorded.

Exceedances of the PM<sub>10</sub> 24-hour mean objective (50µg/m<sup>3</sup> not to be exceeded more than 35 times/year) are shown in **bold**.

If the period of valid data is less than 85%, the 90.4th 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.14 – 24-Hour Mean PM<sub>10</sub> Monitoring Results, Number of PM<sub>10</sub> 24-Hour Means > 50µg/m<sup>3</sup> at Eastbourne Borough Council**

| Site ID | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Site Type        | Valid Data Capture for Monitoring Period (%) <sup>(1)</sup> | Valid Data Capture 2020 (%) <sup>(2)</sup> | 2016 | 2017 | 2018 | 2019 | 2020 |
|---------|-------------------------|--------------------------|------------------|---|--|------|------|------|------|------|
| EB1     | 561150                  | 98341                    | Urban Background | 99  | 99   | N/A  | 0    | 2    | 1    | 1    |
| EB3     | 560085                  | 103118                   | Urban Background | 98  | 98   | 2    | N/A  | N/A  | 3    | 0    |

**Notes:**

Results are presented as the number of 24-hour periods where daily mean concentrations greater than 50µg/m<sup>3</sup> have been recorded.

Exceedances of the PM<sub>10</sub> 24-hour mean objective (50µg/m<sup>3</sup> not to be exceeded more than 35 times/year) are shown in **bold**.

If the period of valid data is less than 85%, the 90.4th 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.15 – Annual Mean PM<sub>2.5</sub> Monitoring Results (µg/m<sup>3</sup>) at Eastbourne Borough Council**

| Site ID | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Site Type        | Valid Data Capture for Monitoring Period (%) <sup>(1)</sup> | Valid Data Capture 2020 (%) <sup>(2)</sup> | 2016 | 2017 | 2018 | 2019 | 2020 |
|---------|-------------------------|--------------------------|------------------|---|--|------|------|------|------|------|
| EB3     | 560085                  | 103118                   | Urban Background | 98  | 98   | 12.7 | 11   | 13   | 10.4 | 9    |

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16**

**Notes:**

The annual mean concentrations are presented as µg/m<sup>3</sup>.

All means have been “annualised” as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C 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%).

## Appendix B: Full Monthly Diffusion Tube Results for 2020

Table B.1 – NO<sub>2</sub> 2020 Diffusion Tube Results (µg/m<sup>3</sup>) in Lewes District Council

| DT ID | X OS<br>Grid Ref<br>(Easting) | Y OS<br>Grid Ref<br>(Northin<br>g) | Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  | Annual Mean:<br>Raw Data | Annual Mean:<br>Annualised and<br>Bias Adjusted<br>(0.81) | Annual Mean:<br>Distance<br>Corrected to<br>Nearest<br>Exposure | Comment |
|-------|-------------------------------|------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|--------------------------|---|---|---------|
| 1     | 548420                        | 99223                              | 31.5 | 23.0 | 21.5 | 16.4 | 16.4 | 20.4 | 19.1 | 25.4 | 24.2 | 23.9 | 30.4 | 22.3 | 22.9                     | 18.5  |   |         |
| 2     | 544354                        | 101388                             | 41.3 | 25.1 | 27.7 | 20.9 | 20.9 | 30.1 | 23.3 | 35.7 | 32.9 | 25.9 | 40.3 | 35.0 | 29.9                     | 24.2  |   |         |
| 3     | 544414                        | 101273                             | 46.0 | 37.9 | 33.1 | 29.3 | 29.3 | 32.4 | 37.8 | 50.4 | 45.9 | 37.4 | 49.5 | 39.1 | 39.0                     | 31.6  |   |         |
| 4     | 544273                        | 101532                             | 34.7 | 27.6 | 24.5 | 20.1 | 20.1 | 21.4 | 21.3 | 31.2 | 28.7 | 26.2 | 37.6 | 33.2 | 27.2                     | 22.0  |   |         |
| 5     | 540063                        | 101263                             | 24.0 | 22.1 | 17.8 | 16.4 | 16.4 | 18.9 | 17.7 | 23.6 | 21.1 | 17.7 | 26.9 | 22.6 | 20.4                     | 16.6  |   |         |
| 6     | 544521                        | 101089                             | 19.0 | 12.4 | 15.3 |      |      | 13.2 | 10.5 | 14.4 | 16.0 | 13.3 | 21.8 | 17.6 | 15.4                     | 12.4  |   |         |
| 7     | 541285                        | 109969                             | 34.7 | 26.7 | 25.4 | 17.5 | 17.5 | 18.8 | 20.2 | 24.0 | 28.3 | 24.9 | 30.5 | 26.1 | 24.6                     | 19.9  |   |         |
| 8     | 541481                        | 110277                             | 27.9 | 23.8 | 17.8 | 12.9 | 12.9 | 14.3 | 16.4 | 19.2 | 20.5 |      |      |      | 18.4                     | 14.9  |   |         |
| 9     | 541541                        | 110246                             | 19.0 | 23.8 | 19.0 | 12.0 | 12.0 | 12.5 | 15.0 | 16.8 | 19.2 | 18.7 | 23.7 | 21.7 | 17.8                     | 14.4  |   |         |
| 10    | 541505                        | 110236                             | 29.3 | 20.5 | 17.8 | 12.8 | 12.8 | 13.8 | 14.2 | 19.2 | 21.1 | 20.3 | 26.7 | 21.5 | 19.2                     | 15.5  |   |         |
| 11    | 541519                        | 110167                             | 34.3 | 23.3 | 23.8 | 18.7 | 18.7 | 20.5 | 20.0 | 28.2 | 30.5 | 25.3 | 32.9 | 28.8 | 25.4                     | 20.6  |   |         |
| 12    | 541540                        | 110130                             | 46.4 | 36.6 | 34.0 | 23.4 | 23.4 | 28.3 | 27.3 | 36.9 | 41.3 | 36.1 | 40.7 | 34.9 | 34.1                     | 27.6  |   |         |
| 13    | 541598                        | 110169                             | 46.4 | 40.9 | 31.0 | 19.2 | 19.2 | 26.2 | 28.8 | 33.8 | 54.6 | 39.1 | 38.7 | 36.0 | 34.5                     | 27.9  |   |         |
| 14    | 540969                        | 100974                             | 35.6 | 28.2 | 24.0 | 19.8 | 19.8 | 24.5 | 24.3 | 30.8 | 27.7 | 19.8 | 32.7 | 27.7 | 26.2                     | 21.3  |   |         |
| 15    | 541646                        | 110370                             | 25.2 | 18.3 | 17.0 | 12.5 | 12.5 | 13.5 | 11.9 | 29.5 | 19.8 | 17.7 | 22.9 | 22.4 | 18.6                     | 15.1  |   |         |
| 16    | 542178                        | 110454                             | 36.3 | 33.9 | 23.5 | 17.1 | 17.1 | 21.5 | 23.0 | 29.5 | 30.5 | 30.2 | 35.1 | 32.8 | 27.5                     | 22.3  |   |         |
| 17    | 542315                        | 110733                             | 33.9 | 26.3 | 24.9 | 15.5 | 15.5 | 21.5 | 19.7 | 25.0 | 29.7 | 25.9 | 32.2 | 39.8 | 25.8                     | 20.9  |   |         |
| 18    | 541669                        | 110278                             | 28.1 | 18.5 | 16.5 | 13.1 | 13.1 | 13.2 | 14.2 | 18.5 | 23.4 | 21.3 | 24.6 | 21.8 | 18.9                     | 15.3  |   |         |
| 19    | 541726                        | 110335                             | 22.7 | 18.8 | 20.0 | 11.9 | 11.9 | 16.0 | 14.0 | 16.4 | 17.7 | 17.1 | 20.5 | 21.6 | 17.4                     | 14.1  |   |         |
| 20    | 541755                        | 110206                             | 52.4 | 38.0 | 32.0 | 22.6 | 22.6 | 28.5 | 27.6 | 35.6 | 41.0 | 38.5 | 39.4 | 30.7 | 34.1                     | 27.6  |   |         |
| 21    | 541684                        | 110181                             | 45.6 | 49.0 | 39.4 | 25.8 | 25.8 | 31.7 |      | 42.2 | 44.6 | 45.2 | 42.8 | 36.8 | 39.0                     | 31.6  |   |         |
| 22    | 541709                        | 109990                             | 23.4 | 17.5 | 17.6 | 11.9 | 11.9 | 10.8 | 12.1 |      | 18.5 | 17.6 | 22.5 | 19.3 | 16.7                     | 13.5  |   |         |
| 23    | 541615                        | 109968                             | 29.8 | 23.5 | 17.9 | 13.2 | 13.2 | 14.3 | 16.1 | 18.4 | 24.7 | 21.7 | 23.6 | 21.8 | 19.8                     | 16.1  |   |         |
| 24    | 541603                        | 110001                             | 43.7 | 39.9 | 26.9 | 16.2 | 16.2 | 20.9 | 23.8 | 27.6 |      | 31.6 |      |      | 27.4                     | 22.2  |   |         |
| 25    | 545142                        | 102433                             | 14.0 | 10.6 | 8.9  | 8.5  | 8.5  | 8.0  | 7.7  | 10.2 | 9.4  | 10.0 | 14.6 | 11.6 | 10.2                     | 8.2   |   |         |
| 26    | 541231                        | 100957                             | 26.4 | 26.0 | 18.1 | 16.0 | 16.0 | 18.1 | 20.0 | 21.3 | 20.0 | 19.8 | 26.4 | 22.3 | 20.9                     | 16.9  |   |         |
| 27    | 541438                        | 110293                             | 36.5 | 30.9 | 24.6 | 18.4 | 18.4 | 21.6 | 21.1 | 26.5 | 28.7 | 27.3 | 32.7 | 30.8 | 26.4                     | 21.4  |   |         |
| 28    | 541430                        | 110328                             | 35.7 | 26.2 | 24.1 | 18.6 | 18.6 | 20.6 |      |      |      |      |      |      | 24.0                     | 19.2  |   |         |
| 29    | 542168                        | 100675                             | 25.4 | 13.2 | 16.4 | 16.8 | 16.8 | 14.9 | 12.7 | 17.4 | 18.8 | 16.1 | 24.1 | 21.7 | 17.9                     | 14.5  |   |         |
| 30    | 550077                        | 99291                              | 37.1 | 32.4 |      | 19.7 | 19.7 | 24.8 | 21.4 | 29.2 | 33.9 | 30.6 | 30.1 | 26.2 | 27.7                     | 22.5  |   |         |
| 31    | 544996                        | 101264                             | 25.5 | 16.0 | 14.1 | 14.0 | 14.0 | 16.8 | 13.3 | 20.0 | 20.8 | 20.2 | 28.7 | 24.2 | 19.0                     | 15.4  |   |         |
| 32    | 544908                        | 102704                             | 18.3 | 16.5 | 12.2 | 9.6  | 9.6  | 11.1 | 9.8  | 12.7 | 12.2 | 13.7 |      | 16.3 | 12.9                     | 10.5  |   |         |
| 33    | 544681                        | 112441                             | 27.5 | 17.1 | 17.1 | 12.5 | 12.5 | 14.5 | 14.9 | 18.6 | 21.7 | 18.5 | 23.3 | 20.0 | 18.2                     | 14.7  |   |         |
| 34    | 532605                        | 115203                             |      | 21.0 | 20.6 | 16.9 | 16.9 | 20.4 | 18.4 | 26.4 | 27.6 | 23.8 | 26.8 | 27.7 | 22.4                     | 18.2  |   |         |
| 35    | 532587                        | 115410                             |      | 13.8 | 12.3 | 14.6 | 14.6 | 17.3 | 15.1 | 20.6 | 20.1 | 17.1 | 21.7 | 19.9 | 17.0                     | 13.8  |   |         |
| 36    | 541032                        | 109613                             | 38.9 | 29.7 | 25.2 | 14.9 | 14.9 | 15.7 | 19.0 | 24.0 | 31.9 | 27.9 | 30.1 | 29.2 | 25.1                     | 20.3  |   |         |
| 37    | 544603                        | 101485                             | 46.4 | 38.1 | 34.0 | 23.5 | 23.5 | 29.9 | 31.6 | 41.0 | 40.7 | 33.4 | 45.4 | 37.2 | 35.4                     | 28.7  |   |         |
| 38    | 544497                        | 101499                             | 35.9 | 27.8 | 18.1 | 21.2 | 21.2 | 24.7 | 22.6 | 32.9 | 27.0 | 26.1 | 31.8 | 28.4 | 26.5                     | 21.5  |   |         |
| 39    | 544330                        | 101423                             | 34.0 | 22.5 | 23.6 | 19.7 | 19.7 | 21.2 |      | 27.6 | 26.3 | 22.6 |      | 28.0 | 24.5                     | 19.9  |   |         |
| 40    | 544497                        | 101285                             | 56.1 | 43.0 | 42.9 | 29.7 | 29.7 | 33.7 | 41.1 | 44.5 | 50.9 | 45.6 | 48.2 | 40.3 | 42.1                     | 34.1  |   |         |
| 41    | 544948                        | 101549                             |      |      |      |      |      |      | 17.1 |      | 27.7 | 22.8 | 27.7 | 25.6 | 24.2                     | 19.1  |   |         |
| 42    | 535187                        | 108928                             | 21.0 | 52.3 | 38.3 | 11.7 | 11.7 | 29.9 | 11.5 | 34.6 | 39.8 | 45.4 | 43.8 | 39.2 | 31.6                     | 25.6  |   |         |
| 43    | 544886                        | 102879                             | 31.8 | 22.7 | 20.2 | 16.1 | 16.1 | 23.4 | 21.4 | 27.6 | 23.8 | 23.1 | 24.7 | 20.3 | 22.6                     | 18.3  |   |         |
| 44    | 543431                        | 103022                             | 24.2 | 15.5 | 15.3 | 24.8 | 24.8 | 15.1 | 13.3 | 22.0 | 19.5 | 18.3 | 23.4 | 17.1 | 19.5                     | 15.8  |   |         |
| 45    | 539543                        | 108284                             | 57.2 | 16.1 | 14.5 | 14.0 | 14.0 | 12.9 | 39.2 | 14.7 | 16.7 | 14.4 | 19.5 | 16.9 | 20.8                     | 16.9  |   |         |
| 46    | 548167                        | 99160                              | 28.8 | 16.0 | 21.6 | 20.1 | 20.1 | 21.0 | 16.5 | 24.7 | 24.8 | 19.8 | 27.9 | 23.7 | 22.1                     | 17.9  |   |         |
| 47    | 536441                        | 116231                             | 14.9 | 10.2 | 10.6 | 7.7  | 7.7  | 8.0  | 7.6  |      | 11.2 | 11.7 |      | 15.6 | 10.5                     | 8.5   |   |         |

| DT ID | X OS<br>Grid Ref<br>(Easting) | Y OS<br>Grid Ref<br>(Northin<br>g) | Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  | Annual Mean:<br>Raw Data | Annual Mean:<br>Annualised and<br>Bias Adjusted<br>(0.81) | Annual Mean:<br>Distance<br>Corrected to<br>Nearest<br>Exposure | Comment |
|-------|-------------------------------|------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|--------------------------|---|---|---------|
| 48    | 542029                        | 115781                             | 17.9 | 12.9 | 13.2 | 9.2  | 9.2  | 9.2  | 10.2 | 12.5 | 15.9 | 14.0 | 18.3 | 16.3 | 13.2                     | 10.7  |   |         |
| 49    | 540141                        | 113548                             | 18.6 | 9.6  | 11.7 | 10.4 | 10.4 | 9.9  | 10.8 | 13.7 | 16.9 | 13.4 | 16.9 | 16.0 | 13.2                     | 10.7  |   |         |
| 50    | 544185                        | 101350                             | 42.0 | 33.5 | 32.5 | 19.5 | 19.5 | 27.4 | 26.9 | 37.5 | 37.9 | 31.1 | 40.9 | 33.9 | 31.9                     | 25.8  |   |         |

☒ All erroneous data has been removed from the NO<sub>2</sub> diffusion tube dataset presented in Table B.1

☒ Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16

☐ Local bias adjustment factor used

☒ National bias adjustment factor used

☒ Where applicable, data has been distance corrected for relevant exposure in the final column

☒ Lewes District Council confirm that all 2020 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System

#### Notes:

Exceedances of the NO<sub>2</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.

NO<sub>2</sub> annual means exceeding 60µg/m<sup>3</sup>, indicating a potential exceedance of the NO<sub>2</sub> 1-hour mean objective are shown in **bold and underlined**.

See Appendix C for details on bias adjustment and annualisation.

**Table B.2 – NO<sub>2</sub> 2020 Diffusion Tube Results (µg/m<sup>3</sup>) in Eastbourne Borough Council**

| DT ID | X OS<br>Grid Ref<br>(Easting) | Y OS<br>Grid Ref<br>(Northin<br>g) | Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  | Annual Mean:<br>Raw Data | Annual Mean:<br>Annualised and<br>Bias Adjusted<br>(0.81) | Annual Mean:<br>Distance<br>Corrected to<br>Nearest<br>Exposure | Comment |
|-------|-------------------------------|------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|--------------------------|---|---|---------|
| 1     | 560774                        | 99163                              | 31.1 | 23.4 | 20.9 | 19.8 | 19.8 | 22.8 | 18.0 | 29.3 | 26.7 | 23.4 | 31.0 | 26.8 | 24.4                     | 19.8  |   |         |
| 2     | 561458                        | 99116                              | 22.8 | 16.1 | 16.6 | 14.9 | 14.9 | 16.2 | 13.8 | 17.4 | 17.5 | 16.4 | 22.8 | 20.3 | 17.5                     | 14.2  |   |         |
| 3     | 561568                        | 99108                              | 33.5 | 27.4 | 24.2 | 22.7 | 22.7 | 22.2 | 16.4 | 22.3 | 22.2 | 20.3 | 24.4 | 23.9 | 23.5                     | 19.1  |   |         |
| 4     | 561717                        | 99061                              | 37.3 | 27.8 | 27.8 | 29.3 | 29.3 | 26.6 | 20.9 | 27.2 | 29.1 | 24.3 | 30.0 | 28.9 | 28.2                     | 22.9  |   |         |
| 5     | 561621                        | 99004                              | 36.2 | 32.2 | 25.9 | 28.2 | 28.2 | 27.8 | 21.7 | 30.8 | 28.5 | 21.6 | 29.0 | 27.5 | 28.1                     | 22.8  |   |         |
| 6     | 561737                        | 98948                              | 21.8 | 20.4 | 21.3 | 18.6 | 18.6 | 15.5 | 12.2 | 21.0 | 17.3 | 15.8 | 23.9 | 22.4 | 19.1                     | 15.5  |   |         |
| 7     | 562692                        | 100149                             | 24.1 | 19.1 | 19.5 | 17.6 | 17.6 | 19.3 | 16.0 | 24.1 | 23.8 | 17.5 | 26.1 | 21.7 | 20.6                     | 16.6  |   |         |
| 8     | 562655                        | 100970                             | 34.0 | 25.1 | 25.9 | 23.6 | 23.6 | 27.1 | 24.5 | 29.6 | 29.3 | 26.3 | 35.2 | 28.4 | 27.7                     | 22.4  |   |         |
| 9     | 561885                        | 103847                             | 26.3 | 19.5 | 16.4 | 15.8 | 15.8 | 15.3 | 14.6 |      | 20.6 | 16.2 | 21.6 | 21.4 | 18.5                     | 15.0  |   |         |
| 10    | 559392                        | 102006                             | 12.0 | 9.0  |      |      |      |      |      | 22.1 |      |      |      |      | 14.3                     | 11.0  |   |         |
| 11    | 557829                        | 98190                              | 17.2 | 12.4 | 13.1 | 15.0 | 15.0 | 17.3 |      | 19.8 | 17.6 | 11.3 | 17.4 | 13.4 | 15.4                     | 12.5  |   |         |
| 12    | 560440                        | 99352                              | 28.2 | 20.0 |      | 17.1 | 17.1 | 18.6 | 16.0 | 22.1 | 24.1 | 20.1 | 23.9 | 30.6 | 21.6                     | 17.5  |   |         |
| 13    | 560943                        | 99480                              | 27.4 | 22.4 | 19.3 | 17.0 | 17.0 | 18.7 | 15.5 | 20.5 | 20.0 | 20.5 | 29.3 | 25.1 | 21.1                     | 17.1  |   |         |
| 14    | 561354                        | 99279                              | 29.8 | 21.8 | 18.1 | 18.1 | 18.1 | 18.5 | 15.7 | 20.9 | 21.4 | 20.4 | 27.0 | 26.9 | 21.4                     | 17.3  |   |         |
| 15    | 561527                        | 99846                              | 39.7 | 35.6 | 30.8 | 28.2 | 28.2 | 37.4 | 26.9 | 39.0 | 34.8 | 25.7 | 36.9 | 33.8 | 33.1                     | 26.8  |   |         |
| 16    | 561043                        | 99828                              | 25.2 | 21.2 | 19.6 | 19.3 | 19.3 | 16.5 | 15.5 | 23.8 | 21.0 | 19.4 | 30.0 | 25.6 | 21.4                     | 17.3  |   |         |
| 17    | 562583                        | 101109                             | 24.0 | 19.0 | 21.0 | 22.8 | 22.8 | 24.5 | 17.7 | 28.2 | 26.8 | 18.4 | 30.9 | 24.0 | 23.3                     | 18.9  |   |         |
| 18    | 560749                        | 102189                             | 22.6 | 21.7 | 23.2 | 21.6 | 21.6 |      | 16.7 | 19.1 | 25.5 | 20.5 | 26.8 | 25.0 | 22.2                     | 18.0  |   |         |
| 19    | 560505                        | 102196                             | 23.7 | 17.9 | 17.2 | 18.2 | 18.2 | 18.6 | 13.8 | 28.1 | 21.0 | 16.4 | 25.6 | 21.7 | 20.0                     | 16.2  |   |         |
| 20    | 560134                        | 100561                             | 21.2 | 14.4 | 14.3 | 13.1 | 13.1 | 13.5 | 11.2 | 16.6 | 17.1 | 14.8 | 22.5 | 18.6 | 15.9                     | 12.9  |   |         |
| 21    | 559894                        | 101035                             | 29.0 | 23.6 | 20.6 | 18.1 | 18.1 | 21.8 | 17.7 | 24.7 | 27.0 | 18.5 | 27.3 | 20.0 | 22.2                     | 18.0  |   |         |
| 22    | 559730                        | 100251                             | 34.7 | 22.6 | 24.7 | 19.6 | 19.6 | 24.5 | 20.3 | 28.9 | 30.3 | 23.4 | 30.3 | 31.6 | 25.9                     | 21.0  |   |         |

☒ All erroneous data has been removed from the NO<sub>2</sub> diffusion tube dataset presented in Table B.1

- ☒ Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16
- ☐ Local bias adjustment factor used
- ☒ National bias adjustment factor used
- ☒ Where applicable, data has been distance corrected for relevant exposure in the final column
- ☒ Eastbourne Borough Council confirm that all 2020 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System

**Notes:**

Exceedances of the NO<sub>2</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.  
NO<sub>2</sub> annual means exceeding 60µg/m<sup>3</sup>, indicating a potential exceedance of the NO<sub>2</sub> 1-hour mean objective are shown in **bold and underlined**.  
See Appendix C for details on bias adjustment and annualisation.

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

### **New or Changed Sources Identified Within Lewes District Council During 2020**

The Newhaven Enterprise Zone is a collaboration between Coast to Capital, Local Enterprise Partnership and LDC, set up with the aim of driving local growth and attracting new businesses to the area. Eight zones in Newhaven are proposed for regeneration, including the Town Centre. It is likely that such growth will increase traffic flows through Newhaven's AQMA. LDC will work carefully to continue to monitor and mitigate impacts within the AQMA, and will be looking to commence an AQAP review in the coming year.

### **New or Changed Sources Identified Within Eastbourne Borough Council During 2020**

EBC has not identified any new sources relating to air quality within the reporting year of 2020.

### **Additional Air Quality Works Undertaken by Lewes District Council During 2020**

Due both to staff shortages and the Covid-19 pandemic, progression on the development of the Lewes Town AQAP was temporarily inhibited and is currently at Draft stage. Progress will continue to be made throughout the next year.

### **Additional Air Quality Works Undertaken by Eastbourne Borough Council During 2020**

EBC has not completed any additional works within the reporting year of 2020.

### **QA/QC of Diffusion Tube Monitoring**

The Ambient, Indoor, Workplace Air and Stack Emissions Proficiency Testing Scheme (AIR PT) is an independent analytical proficiency-testing scheme, operated by LGC



Standards and supported by the Health and Safety Laboratory (HSL). Defra and the Devolved Administrations advise that diffusion tubes used for LAQM should be obtained from laboratories that have demonstrated satisfactory performance in the AIR PT scheme. AIR NO<sub>2</sub> PT forms an integral part of the UK NO<sub>2</sub> Network's QA/QC, and is a useful tool in assessing the analytical performance of those laboratories supplying diffusion tubes to Local Authorities for use in the context of Local Air Quality Management (LAQM). During 2020 Gradko participated in the AIR PT programme, and obtained a 75% rating for the year (AIR PT rounds AR036 and AR040). Further information can be found on this link:

<https://laqm.defra.gov.uk/assets/laqmno2performancedatauptooctober2020v1.pdf>

The diffusion tubes are supplied and analysed by Gradko utilising the 20% triethanolamine (TEA) in water preparation method. Monitoring was generally carried out in adherence with the 2020 Diffusion Tube Monitoring Calendar, with the exception of the period from April to June (the beginning of the first national lockdown), where diffusion tubes were overexposed. Results during this period were not considered erroneous, and so were not discarded from analysis.

### Diffusion Tube Annualisation in Lewes District Council

Two diffusion tubes within the district, DTs 28 and 41, required annualisation, having data captures for 2020 of 50% and 42%, respectively.

Following Defra's LAQM.TG(16), data used for annualisation should derive from background continuous monitors connected to the AURN network, within 100 miles of the relevant diffusion tubes. Data capture at nearby AURN sites were generally below 85%, so the next nearest appropriate monitoring locations were used. An example calculation for the diffusion tube 41 is provided below.

| Site   | NO <sub>2</sub> Annual Mean<br>2019 µg/m <sup>3</sup> (A <sub>m</sub> ) | NO <sub>2</sub> Period Mean<br>2019 µg/m <sup>3</sup> (P <sub>m</sub> ) | Ratio (A <sub>m</sub> /P <sub>m</sub> ) |
|--|---|---|---|
| Reading New Town AURN Urban<br>Background Site (99% data capture)      | 15.6  | 15.9  | 0.98                                    |
| Brighton Preston Park AURN Urban<br>Background Site (99% data capture) | 11.0  | 11.4  | 0.97                                    |
| Canterbury AURN Background Site (96%<br>data capture)                  | 10.4  | 10.6  | 0.98                                    |

|  |  |                                     |
|--|--|-------------------------------------|
|  |  | <b>Annual Ratio Factor = 0.9765</b> |
|--|--|-------------------------------------|

The annual mean for the diffusion tube data was multiplied by 0.9765 to give best estimates of annual mean for NO<sub>2</sub> at the site. Data was then multiplied by the national bias adjustment factor of 0.81.

### Diffusion Tube Annualisation in Eastbourne Borough Council

All diffusion tube monitoring locations within Eastbourne Borough Council recorded data capture of 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below or equal to 25% do not require annualisation.

### Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2020 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG(16) provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO<sub>x</sub>/NO<sub>2</sub> continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Lewes District Council and Eastbourne Borough Council have applied a national bias adjustment factor of 0.81 to the 2020 monitoring data. A summary of bias adjustment factors used by LDC and EBC over the past five years is presented in Table C.1.

A national bias adjustment factor was used as there are not yet any collocated triplicate tubes to identify local factors. This is set to change in the coming year. The national factor was obtained from the National Diffusion Tube Bias Adjustment Factor Spreadsheet (version 09/21), for which Gradko had obtained a factor of 0.81 from 27 studies.

**Table C.1 – Bias Adjustment Factor**

| Year | Local or National | If National, Version of National Spreadsheet | Adjustment Factor |
|------|-------------------|--|-------------------|
| 2020 | National          | 09/21  | 0.81              |
| 2019 | National          | 03/20  | 0.93              |
| 2018 | National          | 03/19  | 0.93              |

|             |          |       |      |
|-------------|----------|-------|------|
| <b>2017</b> | National | 03/18 | 0.89 |
| <b>2016</b> | National | 03/17 | 0.94 |

### NO<sub>2</sub> Fall-off with Distance from the Road

Wherever possible, local authorities should ensure that monitoring locations are representative of exposure. However, where this is not possible, the NO<sub>2</sub> concentration at the nearest location relevant for exposure should be estimated using the Diffusion Tube Data Processing Tool/NO<sub>2</sub> fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO<sub>2</sub> concentrations corrected for distance are presented in Table B.1 and Table B.2.

No diffusion tube NO<sub>2</sub> monitoring locations within Lewes District Council or Eastbourne Borough required distance correction during 2020.

### QA/QC of Automatic Monitoring

The continuous monitoring station in Lewes District Council is managed by the Sussex Air Quality Partnership (<https://www.sussex-air.net>). All continuous monitoring activities are subject to the same quality assurance/quality control objectives set out in the AURN local site operator's manual. These procedures are:

- Overnight 24-hour IZS calibration checks (NO<sub>x</sub> analyser);
- Fortnightly manual zero/span calibration using certified cylinders (carried out by Council employees fully trained in LSO duties);
- Full data analysis and ratification by the Environmental Research Group at King's College London for Devonshire Park and by Ricardo Energy & Environment for Holly Place;

Six monthly service visits are undertaken. Full site audits are not undertaken.

### PM<sub>10</sub> and PM<sub>2.5</sub> Monitoring Adjustment

Precise details of the adjustment factors used for monitors within Lewes District Council and Eastbourne District Council are unknown, as the process is carried out by separate organisation on behalf of local authorities involved with Sussex-Air.

### Automatic Monitoring Annualisation in Lewes District Council

Annualisation was required for LS7 (Lewes Rd, Newhaven) for both NO<sub>2</sub> and PM<sub>10</sub>, as the monitor was installed for the first time in March 2020. Data capture at this site was 63% for NO<sub>2</sub> and 58% for PM<sub>10</sub>. Details of the annualisation are provided in Table C.2.

### Automatic Monitoring Annualisation in Eastbourne Borough Council

Annualisation was required for EB3 (Holly Place AURN) for NO<sub>2</sub>, as the monitor was not operational between 1<sup>st</sup> April and 27<sup>th</sup> August, and again between 15<sup>th</sup> October to 10<sup>th</sup> November. Data capture at this site was 51% for NO<sub>2</sub>. Details of the annualisation are provided in Table C.3.

### NO<sub>2</sub> Fall-off with Distance from the Road

Wherever possible, local authorities should ensure that monitoring locations are representative of exposure. However, where this is not possible, the NO<sub>2</sub> concentration at the nearest location relevant for exposure should be estimated using the NO<sub>2</sub> fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO<sub>2</sub> concentrations corrected for distance are presented in Table B.1 and Table B.2

No automatic NO<sub>2</sub> monitoring locations within Lewes District Council or Eastbourne Borough Council required distance correction during 2020.

**Table C.2 – Annualisation Summary (concentrations presented in  $\mu\text{g}/\text{m}^3$ ) for Lewes District Council**

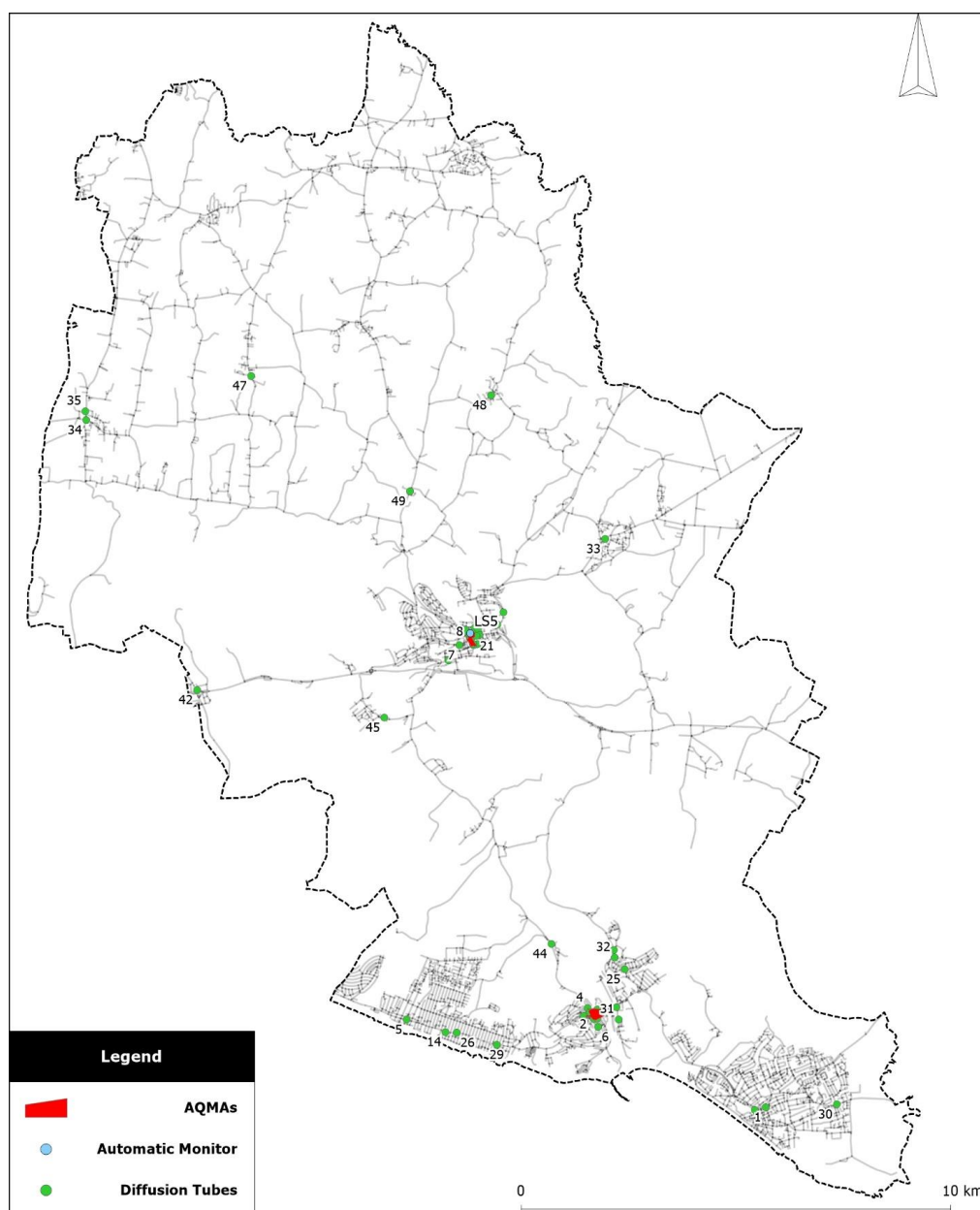
| Site ID | Annualisation Factor (AURN Brighton Preston Park) | Annualisation Factor (AURN Canterbury) | Annualisation Factor (AURN Reading New Town) | Annualisation Factor (AURN Rochester Stoke) | Average Annualisation Factor | Raw Data Annual Mean | Annualised Annual Mean | Comments          |
|---------|---|--|--|---|------------------------------|----------------------|------------------------|-------------------|
| LS7     | 1.04  | 1.06                                   | 1.13   | 1.02  | 1.077                        | 19.3                 | 20.8                   | NO <sub>2</sub>   |
| LS7     | -   | -                                      | 0.98   | 1.00  | 0.986                        | 24.2                 | 23.9                   | PM <sub>10</sub>  |
| DT28    | 1.00  | 0.99                                   | 0.97   | -   | 0.987                        | 24.0                 | 23.6                   | Not bias adjusted |
| DT41    | 0.97  | 0.98                                   | 0.98   | -   | 0.977                        | 24.2                 | 23.6                   | Not bias adjusted |

**Table C.3 – Annualisation Summary (concentrations presented in  $\mu\text{g}/\text{m}^3$ ) for Eastbourne Borough Council**

| Site ID | Annualisation Factor (AURN Brighton Preston Park) | Annualisation Factor (AURN Canterbury) | Annualisation Factor (AURN Reading New Town) | Annualisation Factor (AURN Rochester Stoke) | Average Annualisation Factor | Raw Data Annual Mean | Annualised Annual Mean | Comments        |
|---------|---|--|--|---|------------------------------|----------------------|------------------------|-----------------|
| EB3     | 0.90  | 0.96                                   | 0.83   | 0.94  | 0.909                        | 9.7                  | 8.8                    | NO <sub>2</sub> |

## Appendix D: Map(s) of Monitoring Locations and AQMAs within Lewes District Council and Eastbourne Borough Council

Figure D.1 – Map of Lewes District Council's Monitoring Sites

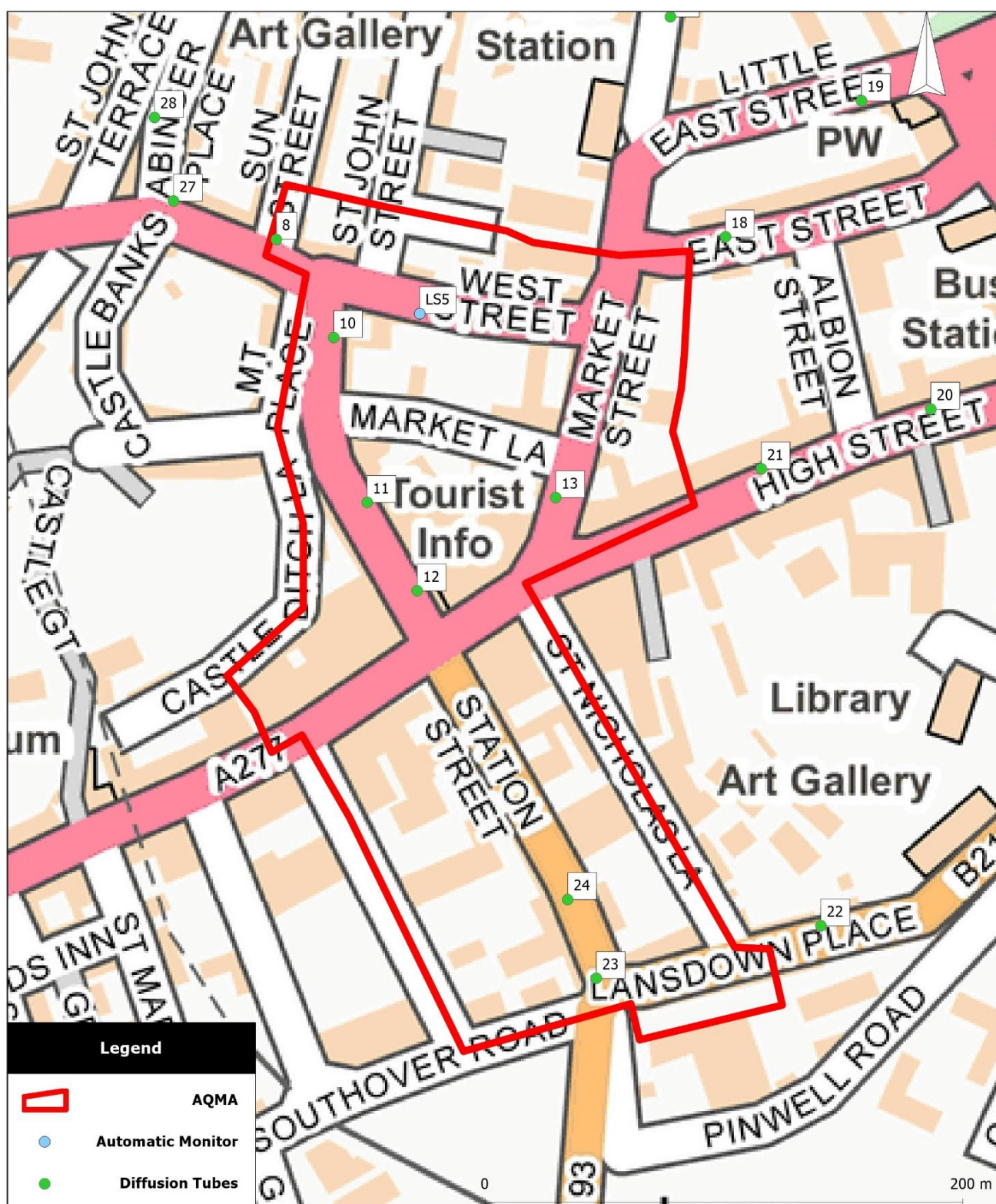


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LAQM Annual Status Report 2020



Figure D.2 – Lewes Town Centre AQMA



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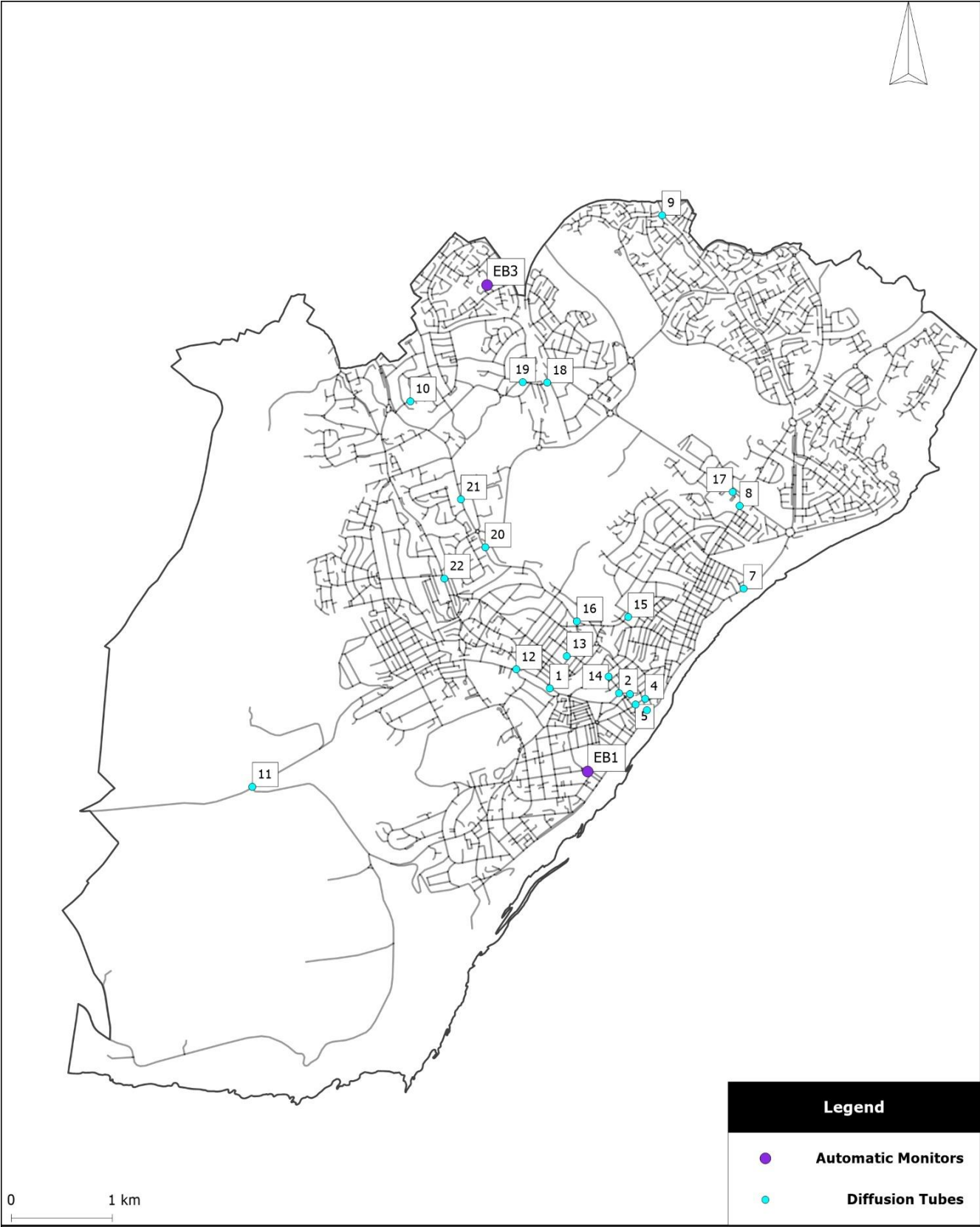
Figure D.3 – Newhaven Ring Road AQMA



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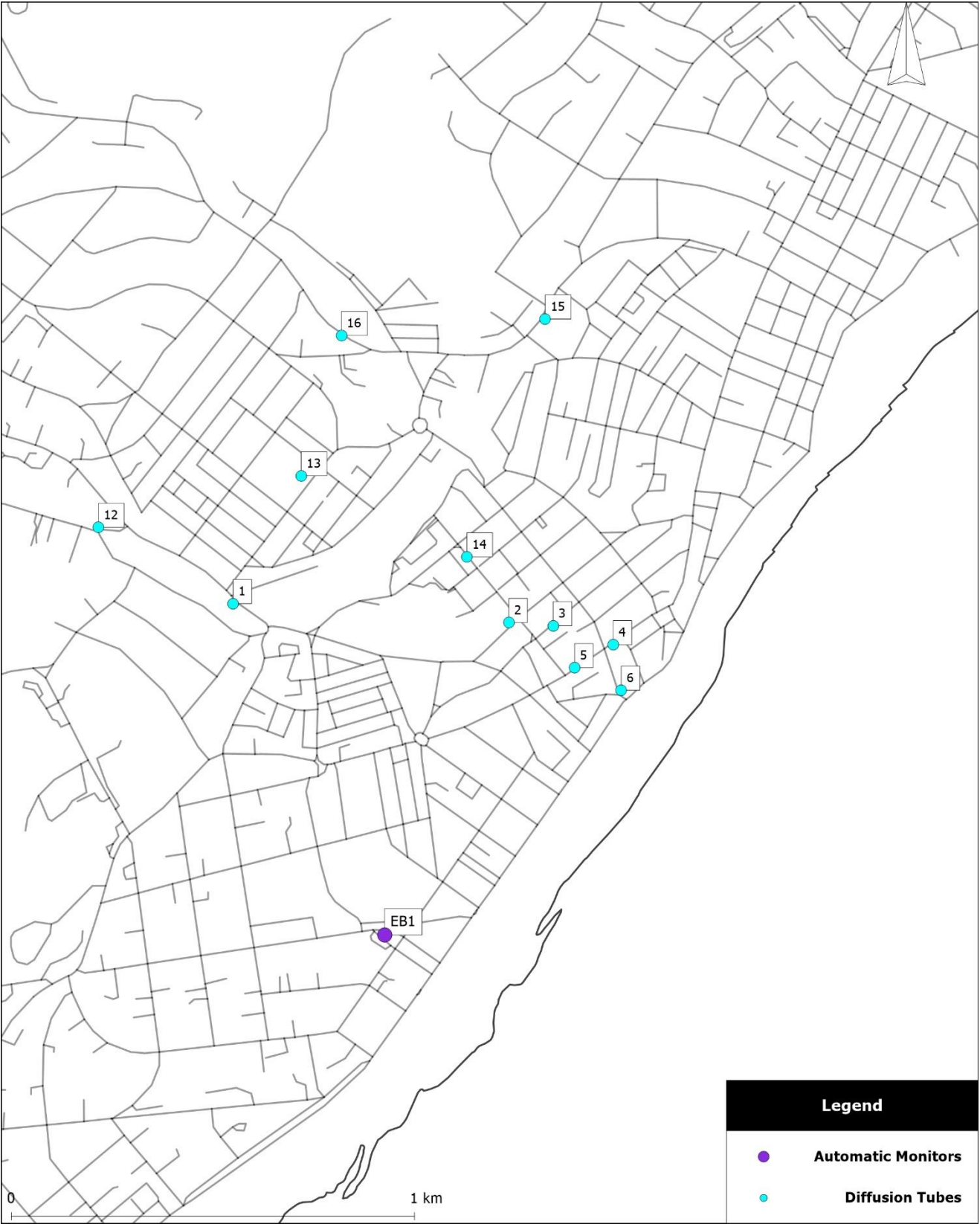


Figure D.4 – Map of Eastbourne Borough Council’s Monitoring Sites



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**Figure D.5 – Map of Eastbourne Borough Council’s Monitoring Sites in the Town Centre**



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## Appendix E: Summary of Air Quality Objectives in England

**Table E.1 – Air Quality Objectives in England<sup>7</sup>**

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

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<sup>7</sup> The units are in microgrammes of pollutant per cubic metre of air (µg/m<sup>3</sup>).

## Appendix F: Impact of COVID-19 upon LAQM

COVID-19 has had a significant impact on society. Inevitably, COVID-19 has also had an impact on the environment, with implications to air quality at local, regional and national scales.

COVID-19 has presented various challenges for Local Authorities with respect to undertaking their statutory LAQM duties in the 2021 reporting year. Recognising this, Defra provided various advice updates throughout 2020 to English authorities, particularly concerning the potential disruption to air quality monitoring programmes, implementation of Air Quality Action Plans (AQAPs) and LAQM statutory reporting requirements. Defra has also issued supplementary guidance for LAQM reporting in 2021 to assist local authorities in preparing their 2021 ASR. Where applicable, this advice has been followed.

Despite the challenges that the pandemic has given rise to, the events of 2020 have also provided Local Authorities with an opportunity to quantify the air quality impacts associated with wide-scale and extreme intervention, most notably in relation to emissions of air pollutants arising from road traffic. The vast majority (>95%) of AQMAs declared within the UK are related to road traffic emissions, where attainment of the annual mean objective for nitrogen dioxide (NO<sub>2</sub>) is considered unlikely. On 23rd March 2020, the UK Government released official guidance advising all members of public to stay at home, with work-related travel only permitted when absolutely necessary. During this initial national lockdown (and to a lesser extent other national and regional lockdowns that followed), marked reductions in vehicle traffic were observed; Department for Transport (DfT) data<sup>8</sup> suggests reductions in vehicle traffic of up to 70% were experienced across the UK by mid-April, relative to pre COVID-19 levels.

This reduction in travel in turn gave rise to a change of air pollutant emissions associated with road traffic, i.e. nitrous oxides (NO<sub>x</sub>), and exhaust and non-exhaust particulates (PM). The Air Quality Expert Group (AQEG)<sup>9</sup> has estimated that during the initial lockdown period in 2020, within urbanised areas of the UK reductions in NO<sub>2</sub> annual mean concentrations were between 20 and 30% relative to pre-pandemic levels, which

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<sup>8</sup> Prime Minister's Office, COVID-19 briefing on the 31<sup>st</sup> of May 2020

<sup>9</sup> Air Quality Expert Group, Estimation of changes in air pollution emissions, concentrations and exposure during the COVID-19 outbreak in the UK, June 2020

represents an absolute reduction of between 10 to 20µg/m<sup>3</sup> if expressed relative to annual mean averages. During this period, changes in PM<sub>2.5</sub> concentrations were less marked than those of NO<sub>2</sub>. PM<sub>2.5</sub> concentrations are affected by both local sources and the transport of pollution from wider regions, often from well beyond the UK. Through analysis of AURN monitoring data for 2018-2020, AQEG have detailed that PM<sub>2.5</sub> concentrations during the initial lockdown period are of the order 2 to 5µg/m<sup>3</sup> lower relative to those that would be expected under business-as-usual conditions.

As restrictions are gradually lifted, the challenge is to understand how these air quality improvements can benefit the long-term health of the population.

### **Impacts of COVID-19 on Air Quality within Lewes District Council**

Reductions of NO<sub>2</sub> concentrations of between 20 and 30% were experienced at roadside diffusion tube monitoring sites within Newhaven's AQMA in 2020, when compared to that of 2019. As such, all monitoring sites within the AQMA have complied with the annual mean objective. For DT40 (the Old Chapel), this is the first time concentrations have dropped below the objective, confirming the importance of targeting traffic flows to improving air quality.

Reductions of NO<sub>2</sub> concentrations of between 20 and 40% were experienced at roadside diffusion tube monitoring sites within the Lewes Town Centre AQMA in 2020, when compared to that of 2019. As such, all monitoring sites within the AQMA have complied with the annual mean objective. For DT12 (Fisher St East), this is the first time concentrations have dropped below the objective, again confirming the importance of targeting traffic flows to improving air quality.

### **Impacts of COVID-19 on Air Quality within Eastbourne Borough Council**

Reductions of NO<sub>2</sub> concentrations of between 20 and 40% were experienced at all roadside diffusion tube monitoring sites in 2020, when compared to that of 2019. As such, all monitoring sites have complied with the annual mean objective.

### **Opportunities Presented by COVID-19 upon LAQM within Lewes District Council**

No LAQM related opportunities have arisen as a consequence of COVID-19 within Lewes District Council.

## **Opportunities Presented by COVID-19 upon LAQM within Eastbourne Borough Council**

No LAQM related opportunities have arisen as a consequence of COVID-19 within Eastbourne Borough Council.

## **Challenges and Constraints Imposed by COVID-19 upon LAQM within Lewes District Council**

A revised AQAP is being developed for Lewes Town AQMA. However, owing to the shortage of Council resources during 2020, the development and implementation of the AQAP has been delayed. Current estimates are that the revised AQAP will be sent out for draft consultation in March 2022. **Small Impact**

The impacts as presented above are aligned with the criteria as defined in Table F 1, with professional judgement considered as part of their application.

## **Challenges and Constraints Imposed by COVID-19 upon LAQM within Eastbourne Borough Council**

No challenges or constraints relating to LAQM have arisen during 2020 as a consequence of COVID-19 within Eastbourne Borough Council.

**Table F 1 – Impact Matrix**

| Category   | Impact Rating: None  | Impact Rating: Small   | Impact Rating: Medium   | Impact Rating: Large   |
|--|--|--|---|--|
| Automatic Monitoring – Data Capture (%)            | More than 75% data capture   | 50 to 75% data capture   | 25 to 50% data capture  | Less than 25% data capture   |
| Automatic Monitoring – QA/QC Regime                | Adherence to requirements as defined in LAQM.TG16                          | Routine calibrations taken place frequently but not to normal regime. Audits undertaken alongside service and maintenance programmes | Routine calibrations taken place infrequently and service and maintenance regimes adhered to. No audit achieved | Routine calibrations not undertaken within extended period (e.g. 3 to 4 months). Interruption to service and maintenance regime and no audit achieved                        |
| Passive Monitoring – Data Capture (%)              | More than 75% data capture   | 50 to 75% data capture   | 25 to 50% data capture  | Less than 25% data capture   |
| Passive Monitoring – Bias Adjustment Factor        | Bias adjustment undertaken as normal                                       | <25% impact on normal number of available bias adjustment colocation studies (2020 vs 2019)  | 25-50% impact on normal number of available bias adjustment studies (2020 vs 2019)                              | >50% impact on normal number of available bias adjustment studies (2020 vs 2019) and/or applied bias adjustment factor studies not considered representative of local regime |
| Passive Monitoring – Adherence to Changeover Dates | Defra diffusion tube exposure calendar adhered to                          | Tubes left out for two exposure periods  | Tubes left out for three exposure periods   | Tubes left out for more than three exposure periods  |
| Passive Monitoring – Storage of Tubes              | Tubes stored in accordance with laboratory guidance and analysed promptly. | Tubes stored for longer than normal but adhering to laboratory guidance  | Tubes unable to be stored according to be laboratory guidance but analysed prior to expiry date                 | Tubes stored for so long that they were unable to be analysed prior to expiry date. Data unable to be used   |
| AQAP – Measure Implementation                      | Unaffected   | Short delay (<6 months) in development of a new AQAP, but is on-going  | Long delay (>6 months) in development of a new AQAP, but is on-going  | No progression in development of a new AQAP  |
| AQAP – New AQAP Development                        | Unaffected   | Short delay (<6 months) in development of a new AQAP, but is on-going  | Long delay (>6 months) in development of a new AQAP, but is on-going  | No progression in development of a new AQAP  |



## 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 |
| ASR               | Annual Status Report  |
| Defra             | Department for Environment, Food and Rural Affairs  |
| DMRB              | Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England   |
| EU                | European Union  |
| FDMS              | Filter Dynamics Measurement System  |
| LAQM              | Local Air Quality Management  |
| NO <sub>2</sub>   | Nitrogen Dioxide  |
| NO <sub>x</sub>   | Nitrogen Oxides   |
| PM <sub>10</sub>  | Airborne particulate matter with an aerodynamic diameter of 10µm or less  |
| PM <sub>2.5</sub> | Airborne particulate matter with an aerodynamic diameter of 2.5µm or less   |
| QA/QC             | Quality Assurance and Quality Control   |
| SO <sub>2</sub>   | Sulphur Dioxide   |
|                   |   |



## References

- Local Air Quality Management Technical Guidance LAQM.TG16. April 2021. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Local Air Quality Management Policy Guidance LAQM.PG16. May 2016. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.