



Lewes District Council

2023 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the Environment Act 1995
Local Air Quality Management, as amended by the
Environment Act 2021

Date: 30th June, 2023

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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^{1,2}.

The mortality burden of air pollution within the UK is equivalent to 29,000 to 43,000 deaths at typical ages³, with a total estimated healthcare cost to the NHS and social care of £157 million in 2017⁴.

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 were declared as a result of exceedances of the UK Air Quality Standard (AQS) for annual mean nitrogen dioxide (NO₂). Full details and maps of these AQMAs can be viewed at: https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=146.

The AQMAs cover parts of Lewes Town Centre and the Newhaven ring road and Town Centre and were declared in 2005 and 2014 respectively. In 2009 and 2016, respective Air Quality Action Plans (AQAPs) for Lewes and Newhaven were put in place to reduce pollutant emissions. The plans included details on the management of air quality monitoring stations established in each area to assess the impact of measures proposed in the AQAPs.

¹ Public Health England. Air Quality: A Briefing for Directors of Public Health, 2017

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

³ Defra. Air quality appraisal: damage cost guidance, January 2023

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

In 2022, NO₂ monitoring using diffusion tubes was carried out at 50 strategically positioned sites throughout the district. The number of tubes and their respective locations were unchanged from 2021.

In 2022, all but one site reported annual mean NO₂ concentrations below the 40 µg/m³ AQS. Site 3, located at 16 Southway in Newhaven, reported an exceedance of the annual mean NO₂ concentration of 41.3 µg/m³. However, it should be noted that following distance correction to predict annual mean concentrations at the nearest receptor (in this case, the façade of the nearest residential building), the value fell to 34.4 µg/m³, which is no longer within 10% of the annual mean NO₂ objective (36 µg/m³).

The majority of sites within the Newhaven AQMA reported small increases in NO₂ annual mean concentrations when compared to 2021 data, and in all but one location, annual means remain above the anomaly of 2020 (pandemic) levels. Within the Lewes Town Centre AQMA, more sites reported decreases in annual means compared to 2021.

There was one locally managed automatic monitoring station (LS8) operational in LDC in 2022, which is situated on Little East Street, within the existing AQMA in Lewes Town Centre. The site monitors NO₂, PM₁₀ and PM_{2.5}. No exceedances of annual means for all pollutants monitored were reported at the site: PM₁₀ and PM_{2.5} annual means were 15.6 µg/m³ and 9.8 µg/m³ respectively, both well below the annual objectives (40 µg/m³ for PM₁₀ and 20 µg/m³ for PM_{2.5}), while annual average NO₂ was reported to be 12.1 µg/m³. There was 1 reported exceedance of the 24 hour mean for PM₁₀ (50 µg/m³, not to be exceeded more than 35 times a year), and 9 reported exceedances of the 1 hour mean for NO₂ (200 µg/m³, not to be exceeded more than 18 times a year). In both cases, the number of exceedances reported by LS8 is permitted by the relevant AQS objective.

Air Quality in Eastbourne Borough Council

There are no declared AQMA's within Eastbourne Borough Council (EBC) at present, and there are no current or historical concerns regarding exceedances of UK Air Quality Standards within the area. Despite continued compliance with all AQS, NO₂ remains the primary pollutant of concern: In 2022, it was monitored using diffusion tubes placed at 21 strategic locations within the borough. The number and location of monitoring sites was unchanged from 2021.

The highest annual mean NO₂ concentration was 26.8 µg/m³, well below the UK AQS, and was recorded at site 14, 109 Whiteley Road. Despite no exceedances of the annual mean NO₂ AQS, 15 of the 21 sites reported increases compared to 2021 data, and annual means at all sites remained higher than 2020 levels.

There are two automatic monitoring sites located within EBC: EB1 (Devonshire Park) which monitors NO₂, ozone (O₃) and PM₁₀ and is locally managed, and EB3 (Holly Place) which is part of the Automatic Urban and Rural Monitoring Network (AURN) and monitors NO₂, PM₁₀ and PM_{2.5}.

24 hour mean PM₁₀ concentrations greater than 50 µg/m³ were reported on five days at site EB1 and one day at site EB3, although both sites still comply with the UK AQS objective, which permits up to 35 exceedances per year. Annual means for EB1 and EB3 were 19.3 µg/m³ and 14.6 µg/m³ respectively, which are well below the 40 µg/m³ UK AQS value. Annual mean concentrations of PM_{2.5} recorded at EB3 have consistently remained well below the 25 µg/m³ AQS, with values of 8.4 µg/m³ and 8.9 µg/m³ reported in 2021 and 2022 respectively.

O₃ is monitored exclusively at site EB1. The monitor had a data capture rate for O₃ of 99.1% (which is classed as adequate data capture that does not require annualisation). On 12 occasions in 2022, the 8 hour mean was reported to be greater than 100 µg/m³. The UK AQS O₃ objective is 100 µg/m³, not to be exceeded more than 10 times a year, and as such, the concentrations recorded at site EB1 did not meet the UK AQS for ground level ozone. O₃ reacts with atmospheric NO (formed from the interaction of NO₂ with sunlight) to form O₂ and NO₂, so uncharacteristically high O₃ concentrations are most likely due to ongoing impacts of the reduction in NO_x emissions during and after the COVID-19 pandemic. High concentrations of O₃ were also observed in 2021, so it is likely that levels are still equilibrating in response to the impact of COVID-19 and the nationally imposed lockdowns.

Actions to Improve Air Quality

Whilst air quality has improved significantly in recent decades, there are some areas where local action is needed to protect people and the environment from the effects of air pollution.

The Environmental Improvement Plan⁵ sets out actions that will drive continued improvements to air quality and to meet the new national interim and long-term PM_{2.5} targets. The National Air Quality Strategy, due to be published in 2023, will provide more information on local authorities' responsibilities to work towards these new targets and reduce PM_{2.5} in their areas. The Road to Zero⁶ details 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 Council

During 2022, LDC continues to progress the Cycle Route 90. The eastern section route, from Cliffe High Street to Southerham roundabout, has been agreed by Cycle Lewes and the preliminary design has been completed. Feasibility designs are ongoing for town centre and western section options.

LDC also has several ongoing initiatives and schemes in place, such as their eco-driving campaign, which is aimed at reducing emissions from idling vehicles at schools across both Lewes and Eastbourne councils. This anti-idling message will be continually delivered to schools over the next few years. There are also several ongoing measures in place aiming to improve coordination of building and road works in Lewes town centre and promote sustainable transport modes.

Other measures can be found in Actions to Improve Air Quality and Table 2.2 – Progress on Measures to Improve Air Quality in Lewes District Council.

Conclusions and Priorities for Lewes District Council

In 2022, there were no exceedances of PM₁₀ or PM_{2.5} AQS. One site (Site 3 at 16 Southway, Newhaven) reported an annual mean NO₂ concentration that exceeded the NO₂ annual mean AQS of 40 µg/m³ prior to fall off with distance correction.

⁵ Defra. Environmental Improvement Plan 2023, January 2023

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

In 2023, LDC started preparing a revised AQAP and dispersion modelling is currently being undertaken to evaluate the AQMA's located in Lewes Town Centre and Newhaven.

LDC will continue to monitor the impact of ongoing Transport Planning and Infrastructure measures aimed at emissions reduction and will continue to work towards the implementation of the planned Cycle Network, which is currently in the design stages. A new continuous monitoring site, LS8, was operational in 2022, and has allowed for LDC to monitor PM_{2.5} in Lewes Town Centre. LDC will continue to monitor particulate matter and NO₂ in 2023.

LDC will continue to work with ESCC, Sustrans and community groups to implement transport-related measures which will improve air quality across the borough.

Actions to Improve Air Quality in Eastbourne Borough Council

In 2022, EBC has completed the detailed design for the Eastbourne Town Centre Improvement Scheme Phase 2a, with construction due to commence this year. The Eastbourne Town Centre Improvement Scheme (ETCIS) is a joint project between East Sussex County Council and Eastbourne Borough Council. The ETCIS aims to Create an attractive pedestrian friendly environment addressing current issues of pedestrian congestion experienced along Terminus Road.

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.

Conclusions and Priorities for Eastbourne Borough Council

No exceedances of nitrogen dioxide or particulate matter were recorded at any monitoring location in 2022. Slight increases in NO₂ concentrations were seen at 15 (of 21) monitoring locations when compared to 2021 data, but all reported annual means were still well below the AQS of 40 µg/m³.

EBC will continue to monitor NO₂, PM₁₀, PM_{2.5} and O₃ 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

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 England⁷ 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 Sussex Air Quality Alert 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 Sussex Air Quality Alert app, email, mobile phone via text message or home phone. The app is 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 at: <http://www.sussex-air.net> or by 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 at: <http://locase.co.uk/partners-and-services/>

1.1 Local Responsibilities and Commitment

This ASR was prepared by the Green Consultancy – Air Quality Department of Lewes District Council and Eastbourne Borough Council with the support and agreement of the following officers and departments:

- Councillor Emily O'Brien

This ASR has been approved by:

Rachel Sadler

This ASR has not been signed off by a Director of Public Health.

If you have any comments on this ASR please send them to Rachel Sadler at:

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1 Local Air Quality Management

This report provides an overview of air quality in Lewes District Council and Eastbourne Borough Council during 2022. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995), as amended by the Environment Act (2021), 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 order to achieve and maintain the objectives and the dates by which each measure will be carried out. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by Lewes District Council and Eastbourne Borough Council 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

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority should prepare an Air Quality Action Plan (AQAP) within 18 months. The AQAP should specify how air quality targets will be achieved and maintained, and provide dates by which measures will be carried out.

A summary of AQMAs declared by LDC can be found in Table 2.1. The table presents a description of the two AQMAs that are currently designated within LDC. Appendix D: Maps of Monitoring Locations and AQMAs provides maps of AQMAs and also the air quality monitoring locations in relation to the AQMAs. The air quality objective pertinent to the current AQMA designations is as follows:

- NO₂ annual mean;

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: Maps of Monitoring Locations and AQMAs.

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	Number of Years Compliant with Air Quality Objective	Name and Date of AQAP Publication	Web Link to AQAP
Lewes Town Centre AQMA	Declared 30/06/2005	Nitrogen dioxide NO ₂ Annual Mean	An area encompassing a section of Lewes Town Centre extending north to include the Police Station, south to St Andrews Place.	NO	53 µg/m ³	29.3 µg/m ³	3 years**	LDC AQAP May-09	https://www.lewes-eastbourne.gov.uk/resources/assets/inline/full/0/261611.pdf
A259 Newhaven ring road and Town Centre No 1	Declared 16/07/2014	Nitrogen dioxide NO ₂ Annual Mean	The designated area incorporates Newhaven Town Centre, Southway, Northway, and sections of the A259 Brighton Road, Lewes Road and the swing bridge.	NO	49 µg/m ³	41.3 (34.4)* µg/m ³	3 years**	Newhaven AQAP Jun-16	https://sussex-air.net/reports/NewhavenAQAP2016.pdf

*Level of exceedance after fall off with distance correction to calculate annual mean concentration at the nearest receptor.

**Number of years compliant includes 2020 and 2021, which are likely anomalies due to the impact of the COVID-19 pandemic and nationally imposed lockdowns on emissions. Excluding anomalous years, this is the first year that both AQMAs have been compliant with the Air Quality Objective.

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.

2.2 Progress and Impact of Measures to address Air Quality in Lewes District Council and Eastbourne Borough Council

Defra's appraisal of last year's ASR concluded that "The report is well structured, detailed, and provides the information specified in the Guidance." The following comments were made to help inform future reports:

1. *There is a good discussion of annual mean concentration trends across the district and the AQMAs, with reference to the COVID-19 pandemic. Observed trends are also presented clearly, this is encouraged.*
2. *Some of the policy text, for example around the Environment Act, which was amended in 2021, is now outdated and so could be updated.*
3. *There was an error regarding a missing reference source under the section NO₂ Fall-off with Distance from the Road. It is important that future reports have been formatted correctly.*
4. *There was an error in the text beneath Table C.3 – NO₂ Fall off With Distance Calculations that stated that 'No diffusion tube NO₂ monitoring locations within Eastbourne Borough required distance correction during 2021', which was contradictory of the distance correction for site 3 that was presented above it. The text should be checked to ensure consistency.*
5. *It seems that robust QA/QC procedures have been used. The council could provide a screen capture of the National Diffusion Bias Adjustment Factor Spreadsheet to ensure accuracy.*
6. *The map provides an overview of the monitoring sites and AQMA boundary, this is welcomed. The map should be updated to include the automatic monitoring site at LS5, Lewes Town West Street.*
7. *Overall, this report is comprehensive and well detailed. Lewes District and Eastbourne Borough Council are committed to improving air quality, with plans to draft an updated AQAP in 2022. Further comments on the progress of this should be included in the 2023 ASR.*

In 2023, LDC and EBC are committed to providing a well-structured ASR which follows and provides all of the information specified in the Guidance. All appraisal comments from the 2022 ASR have been addressed.

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

LDC has taken forward a number of direct measures during the current reporting year of 2022 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. Nine measures are included within Table 2.2, with the type of measure and the progress LDC have made during the reporting year of 2022 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2.

More detail on these measures can be found in their respective Action Plans, [the Lewes District Local Plan](#), [East Sussex Strategic Partnership](#) and the [Local Transport Plan](#).

Key areas of progress made towards completion of measures are:

- Lewes – Cycle Route 90: preliminary design for the eastern section of Lewes Cycle Route 90, including toucan crossing and 40 mph speed limit;
- Partnership work with train and bus operators (LTP): provision of additional undercover cycle parking at Lewes station;
- Flow and congestion around Newhaven ring road addressed as a result of improvements to crossings on Newhaven Ring Road completed in 2021;
- Target long-distance freight management and heavy traffic through Lewes Town Centre: committed to address as part of the review of East Sussex Local Transport Plan 4, which will see the development of a county-wide freight policy.

LDC expects the following progress on measures to be made over the course of the next reporting year:

- New pipeline schemes – cycling and infrastructure: detailed design for School Streets Southover CofE Primary
- A259 South Coast Corridor Package – A259 Corridor Package: submission of Strategic Outline Business Case to the Department for Transport for Major Road Network Funding

LDC's priorities for the coming year are to carry out further design work and consultation with key stakeholders for Lewes Cycle Route 90, and to continue to make progress on the Local Transport Plan.

LDC worked to implement these measures in partnership with the following stakeholders during 2022:

- National Highways (NH);
- ESCC;
- ESCC Network Management;
- Lewes Town Council (LTC);
- LDC;
- Sussex Police;
- Cycle Lewes;
- Business Community;
- Network Rail/Southern (Lewes Rail Station);
- Private operators.

Whilst the measures stated above and in Table 2.2 will help to contribute towards compliance, LDC 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 AQMA and A259 Newhaven Ring Road AQMA. The additional measures will be included in the updated AQAP which is currently being developed.

Excluding years 2020 and 2021, which are likely to be anomalies due to the impact of the COVID-19 pandemic and nationally imposed lockdowns, both AQMA's will need to maintain compliance for two additional consecutive years before revocation can be considered.

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

EBC currently does not have any declared AQMAs, and therefore is not required to define measures or implement an AQAP. The Council will however need to specify if they are developing an Air Quality Strategy, which is now a requirement of Local Authorities who don't have AQMA's.

EBC has taken forward a number of direct measures during the current reporting year of 2022 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in

Table 2.3. 17 measures are included within

Table 2.3 with the type of measure and the progress EBC have made during the reporting year of 2022 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within the table.

EBC expects the following measures to be completed over the course of the next reporting year:

- Hailsham/Polegate/Eastbourne Sustainable Transport Corridor PHASE 1: detailed design to be completed 2023, earliest completion date is 2023/2024.
- Eastbourne / South Wealden cycling and walking improvements-Eastbourne Cycle Parking: individual locations subject to local consultation (completed in 2022) and TRO in some cases. Expected completion by September 2023;
- Eastbourne / South Wealden cycling and walking improvements- Eastbourne Town Centre Wayfinding: scheme delivered by EBC and construction is nearing completion. Expected completion by June 2023.

EBC's priorities for the coming year are to secure funding to enable the construction of the Eastbourne Walking and Cycling Network to begin in 2023/2024, and to rework the detailed design of Hailsham/Polegate/Eastbourne Sustainable Transport Corridor PHASE 1 to address drainage issues.

EBC worked to implement these measures in partnership with the following stakeholders during 2022:

- ESCC;
- EBC;
- WDC (Wealden District Council).

The principal challenges and barriers to implementation that EBC anticipates facing regarding the planned construction of Eastbourne Walking and Cycling Network are the availability of full funding and the capacity within the wider construction programme. The progress of the Hailsham/Polegate/Eastbourne Sustainable Transport Corridor is dependent on fitting the construction of PHASE 3 Ersham Road roundabout, Hailsham into the wider delivery programme of various other junction improvements on the A22 corridor around Hailsham, and the reallocation of road space that will be required for PHASE 4 and PHASE 5.

Progress on the delivery of PHASE 1 of the Hailsham/Polegate/Eastbourne Sustainable Transport Corridor has been delayed due to the impact of the COVID-19 pandemic on

operations of the council, and the need to rework the detailed design to address drainage issues.

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

Measure No.	Measure	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	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		Estimated for eastern section 2024/25	ESCC NH Cycle Lewes LTC	Development Contributions and ESCC	No			Planning	Reduction of NO ₂ (and PM) emission	Increased use of sustainable transport modes	Preliminary design for eastern section, including toucan crossing and 40mph speed limit complete. Feasibility Designs ongoing for town centre and western section options.	Eastern section route, Cliffe High Street to Southerham roundabout has been agreed by Cycle Lewes. Implementation subject to securing full funding. The town centre and western section requires more design work and further consultation with key stakeholders.
2	Better coordination of building and road works in the Lewes town area (LTP)	Transport Planning and Infrastructure	Other			ESCC Network Management	TBC	TBC			Implementation	Reduction of NO ₂ (and PM) emission	Number of agreements and s.61 agreements	Ongoing	Ongoing
3	Target long-distance freight management & heavy traffic through town (LTP)	Transport Planning and Infrastructure	Other		March 2024	ESCC, LDC, Sussex Police (enforcement)	TBC	TBC			Planning	Reduction of NO ₂ (and PM) emission	Traffic counts	Committed	A county wide freight policy will be developed as part of the review of the East Sussex Local Transport Plan 4.
4	Reduce emissions from idling vehicles - raise awareness through eco-driving campaign	Transport Planning and Infrastructure	Other			LDC	In-house resources	No			Implementation	Reduction of NO ₂ (and PM) emission	NO ₂ / 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		Higher charges for residents second parking permits and discounted permits for lower emission vehicles; the most recent increase was in 2020	ESCC, LDC, Lewes Town Council, Business Community, Network Rail/Southern (Lewes Rail Station), private operators	TBC	TBC			Ongoing	Reduction of NO ₂ (and PM) emission	Reduced traffic and congestion at peak time, reduced re-circulation, reduced emissions; and modal shift and sustainable travel behaviour	Higher charges for residents second parking permits and discounted permits for lower emission vehicles; the most recent increase was in 2020.	Will be undertaken as part of parking reviews
6	Partnership work with bus & train operators (LTP) Increase bus and train patronage: through supporting marketing campaign, extend use of subsidised/discounted fares, improve bus stop facilities, bus information, provision of additional undercover cycle parking at Lewes station	Transport Planning and Infrastructure	Other		Ongoing	ESCC/LDC Bus Operators Train Operating Companies	TBC	TBC			Implementation	Accessibility/ awareness		Ongoing Point c – Lewes station cycle parking is complete	As funding is available.
7	New pipeline schemes - cycling infrastructure (Local Cycling & Walking Infrastructure Plan)	Transport Planning and Infrastructure	Cycle network		Ongoing	ESCC	ESCC Local Transport Capital Programme	No			Planning	Reduction of NO ₂ (and PM) emission		Feasibility	As funding is available. Pipeline scheme – School Streets Southover CofE Primary – detailed design during 2023.
8	Address traffic flow & congestion on Newhaven Ring Road	Traffic Management	UTC, Congestion management, traffic reduction				ESCC				Implementation	Reduction of NO ₂ (and PM) emission	Traffic flow/NO ₂	Improvements to crossings completed summer 2021 has helped to address flow and congestion	Will be further considered through A259 South Coast Corridor Package
9	A259 South Coast Corridor Package – A259 Corridor Package	Multi Modal Transport Study	Other				ESCC				Implementation	Reduction of NO ₂ (and PM) emission		Feasibility	Strategic Outline Business Case – submission to Department for Transport for Major Road Network funding - autumn 2023

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

Measure No.	Measure	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	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		2023/24 earliest	ESCC, EBC, WDC	ESCC Local Growth Funding	No			Planning	Reduction of NO ₂ (and PM) emission		Detailed design to be completed 2023	Delivery delayed due to impact of the Covid 19 Pandemic on operations of the council and need to rework detailed design to address drainage issues
2	Hailsham/Polegate/Eastbourne Sustainable Transport Corridor PHASE 2 Victoria Drive bus lane	Transport Planning and Infrastructure	Other		Completion within 4 years	ESCC, EBC, WDC	Development Contributions / Other national funding	No			Planning	Reduction of NO ₂ (and PM) emission		Detailed Design	
3	Hailsham/Polegate/Eastbourne Sustainable Transport Corridor PHASE 3 Ersham Road roundabout, Hailsham	Transport Planning and Infrastructure	Other		Completion within 2/3 years	ESCC, EBC, WDC	CIL	No			Planning	Reduction of NO ₂ (and PM) emission		LMTE report on consultation and next steps Oct 22 – resolved to progress to detailed design and construction. Detailed design to commence 2023/24 Village Green de-designated to enable roundabout to be delivered	Various other junction improvement on the A22 corridor around Hailsham will mean construction will need to be fitted into that wider delivery programme
4	Hailsham/Polegate/Eastbourne Sustainable Transport Corridor PHASE 4 A2021 Kings Drive/Rodmill Roundabout	Transport Planning and Infrastructure	Other		Completion by March 2025	ESCC, EBC	Bus Service Improvement Plan funding	No			Planning	Reduction of NO ₂ (and PM) emission		Feasibility – part of Bus Service Improvement Plan funded package of bus priority measures.	Will require the re-allocation of road space Short timescales for design and delivery
5	Hailsham/Polegate/Eastbourne Sustainable Transport Corridor PHASE 5 – Rodmill roundabout to town centre (northbound bus lane on approach to Rodmill roundabout)	Transport Planning and Infrastructure	Other		Completion by March 2025	ESCC, EBC, WDC	Development Contributions /Bus Service Improvement Plan funding	No			Planning	Reduction of NO ₂ (and PM) emission		Feasibility – part of Bus Service Improvement Plan funded package of bus priority measures.	Will require the re-allocation of road space Short timescales for design and delivery
6	Eastbourne town centre improvement scheme Phase 2a	Transport Planning and Infrastructure	Other		mid 2024	ESCC, EBC	ESCC Local Growth Funding, ESCC	No				Reduction of NO ₂ (and PM) emission		Detailed design Construction to commence in 2023	
7	Eastbourne town centre improvement scheme Phase 2b	Transport Planning and Infrastructure	Other		March 2025	ESCC, EBC	EBC Levelling Up Fund	No				Reduction of NO ₂ (and PM) emission		Detailed design	Public consultation still be undertaken TRO consultation
8	A22/A2290 MRN Corridor Study (Golden Jubilee Way to Seaside)	Transport Planning and Infrastructure	Other		Unknown	ESCC	Major Road Network Funding	No				N/A	N/A	Consultation undertaken in summer 2021 & Strategic Outline business case being developed	Securing funding
9	Eastbourne Walking and Cycle Network - Horseway Phase 1B (Cavendish Place to Ringwood Road)	Transport Planning and Infrastructure	Cycle network		March 2024	ESCC	ESCC Local Growth Funding	No				Reduction of NO ₂ (and PM) emission	Increased use of sustainable transport modes	Consultation completed 2021. Detailed Design being undertaken in 2022. Construction to commence 2023.	Construction will be subject to full funding being available and capacity within wider construction programme.
10	Eastbourne Walking and Cycle Network - Langney Rise cycle route	Transport Planning and Infrastructure	Cycle network		December 2024	ESCC	ESCC Local Growth Funding	No				Reduction of NO ₂ (and PM) emission	Increased use of sustainable transport modes	Consultation completed 2021. Detailed Design being undertaken in 2022/23. Construction to commence 2023/24.	Construction will be subject to full funding being available and capacity within wider construction programme
11	Eastbourne Walking and Cycle Network- Willingdon Drove cycle route	Transport Planning and Infrastructure	Cycle network		March 2024	ESCC	ESCC Local Growth Funding	No				Reduction of NO ₂ (and PM) emission	Increased use of sustainable transport modes	Consultation completed 2021. Detailed Design being undertaken in 2022. Construction to commence 2023/24.	Construction will be subject to full funding being available and capacity within wider construction programme
12	Eastbourne / South Wealden cycling and walking improvements - Stone Cross Royal Parade via Langney	Transport Planning and Infrastructure	Cycle network		Unknown	ESCC	ESCC Local Growth Funding	No				Reduction of NO ₂ (and PM) emission	Increased use of sustainable transport modes	Consultation completed 2021. Detailed Design being undertaken in 2022.	Subject to securing funding

Measure No.	Measure	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	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- Eastbourne Cycle Parking	Transport Planning and Infrastructure	Cycle network		Sept 2023	ESCC	ESCC Local Growth Funding	No				Reduction of NO ₂ (and PM) emission	Increased use of sustainable transport modes	Consultation completed in 2022	Individual locations subject to local consultation and, in some cases, TRO process.
14	Eastbourne / South Wealden cycling and walking improvements - Eastbourne town centre cycle routes	Transport Planning and Infrastructure	Cycle network		March 2024	ESCC	ESCC Local Growth Funding	No				Reduction of NO ₂ (and PM) emission	Increased use of sustainable transport modes	Consultation completed 2021. Detailed Design being undertaken in 2022. Construction to commence late 2022.	Construction will be subject to full funding being available and capacity within wider construction programme
15	Eastbourne / South Wealden cycling and walking improvements- Eastbourne Town Centre Wayfinding	Transport Planning and Infrastructure	Cycle network		June 2023	EBC	ESCC Local Growth Funding	No				Reduction of NO ₂ (and PM) emission	Increased use of sustainable transport modes	Construction	Scheme delivered by EBC, nearing completion.
16	Eastbourne seafront cycle feasibility study	Transport Planning and Infrastructure	Cycle network		March 2024	ESCC	ESCC Local Transport Capital Programme	No				N/A	N/A	Feasibility	
17	New pipeline schemes - cycling infrastructure (Local Cycling & Walking Infrastructure Plan)	Transport Planning and Infrastructure	Cycle network		March 2024	ESCC	ESCC Local Transport Capital Programme	No				Reduction of NO ₂ (and PM) emission	Increased use of sustainable transport modes	Feasibility	As funding is available. Pipeline schemes – School Streets Langney Primary – detailed design during 2023 & cycle route Royal Parade – pre-liminary design 2023

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

As detailed in Policy Guidance LAQM.PG22 (Chapter 8), local authorities are expected to work towards reducing emissions and/or concentrations of PM_{2.5} (particulate matter with an aerodynamic diameter of 2.5 µm or less). There is clear evidence that PM_{2.5} has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

Lewes District Council

In 2022 PM_{2.5} was monitored at one newly established site within LDC, LS8 in Lewes Town Centre and within the existing AQMA. Data capture at this site during 2022 was 86.6% giving an annual mean of 9.8 µg/m³. Site LS7 in Newhaven, the sole site monitoring PM_{2.5} in 2021, was not operational during 2022.

Many of the measures to improve air quality currently being implemented in LDC are expected to lower PM_{2.5} concentrations over time by reducing emissions from road traffic. LDC plan to implement a cycle route and new pipeline schemes for cycling infrastructure as part of their Local Cycling and Walking Infrastructure Plan to promote sustainable transport modes. The eco-driving campaign aiming to reduce emissions from idling vehicles and measures to intensify existing/planned LTP programmes are also expected to reduce PM_{2.5} road traffic emissions.

The [Public Health Outcomes Framework](#) data tool compiled by Public Health England quantifies the mortality burden of PM_{2.5} within England on a county and local authority scale. The 2021 fraction of mortality attributable to particulate air pollution across England is 5.5%, and the fraction within LDC significantly lower than the national average at 4.7% and the South East regional average of 5.4%.

Eastbourne Borough Council

Within EBC, PM_{2.5} was monitored at one site, EB3 Holly Place. Data capture at this site during 2022 was 96.7%, giving an annual mean of 8.9 µg/m³. This was slightly higher than the 2021 reported annual mean (8.4 µg/m³).

As in LDC, numerous measures to be implemented in EBC are focused on reducing road traffic emissions are therefore expected to reduce PM_{2.5} emissions. The Hailsham/Polegate/Eastbourne Sustainable Transport Corridor will be implemented in

phases and aims to improve public transport services, while there are also plans to extend the existing cycle network to promote sustainable transport modes.

The [Public Health Outcomes Framework](#) compiled by Public Health England quantifies the mortality burden of PM_{2.5} within England on a county and local authority scale. The 2021 fraction of mortality attributable to particulate air pollution across England is 5.5%, and the fraction within LDC significantly lower than the national average at 4.8% and the South East regional average of 5.4%.

In Defra's recently published Clean Air Strategy 2019 the government want to cut PM_{2.5} 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/m³) by 2025.'

Public Health England published a very informative 'Health Matters'⁷ 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 will be reported this year.

⁷ Health Matters: air pollution, Public Health England, published 14 November 2018. Available at: <https://www.gov.uk/government/publications/health-matters-air-pollution>

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

This section sets out the monitoring undertaken within 2022 by Lewes Borough Council and Eastbourne District Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2018 and 2022 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

LDC undertook automatic (continuous) monitoring at 1 site during 2022. Table A.1 in Appendix A shows the details of the automatic monitoring site. The [Sussex-Air monitoring data](#) page presents automatic monitoring results for LDC.

EBC undertook automatic (continuous) monitoring at 2 sites during 2022. Table A.2 in Appendix A shows the details of the automatic monitoring sites. The [Sussex-Air monitoring data](#) page presents automatic monitoring results for EBC.

Maps showing the location of the monitoring sites are provided in Appendix D: Maps of Monitoring Locations and AQMAs. Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC.

3.1.2 Non-Automatic Monitoring Sites

LDC undertook non-automatic (i.e. passive) monitoring of NO₂ at 50 sites during 2022. Table A.3 in Appendix A presents the details of the non-automatic sites.

EBC undertook non-automatic (i.e. passive) monitoring of NO₂ at 21 sites during 2022. Table A.4 in Appendix A presents the details of the non-automatic sites.

Maps showing the location of the monitoring sites are provided in in Appendix D: Maps of Monitoring Locations and AQMAs. 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: Supporting Technical Information / Air Quality Monitoring Data QA/QC.

3.2 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.

3.2.1 Nitrogen Dioxide (NO₂)

Lewes District Council

Table A.5 and Table A.7 in Appendix A compare the ratified and adjusted monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40 µg/m³. 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 2022 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.

Table A.9 in Appendix A compares the ratified continuous monitored NO₂ hourly mean concentrations for the past five years with the air quality objective of 200 µg/m³, not to be exceeded more than 18 times per year.

Figures A.1 – A.4 show trends in nitrogen dioxide measured by diffusion tubes from 2018 to 2022. Each figure illustrates the concentration for groups of sites with data readings.

Newhaven AQMA

Figure A.1 presents the annual mean NO₂ concentrations for the last 5 years reported at diffusion tube sites within the Newhaven AQMA. Compliance has been maintained for the past three years, although years 2020 and 2021 are likely anomalies as a result of the impact of the COVID-19 pandemic and nationally imposed lockdowns. Excluding these years, this the first year Newhaven AQMA has been compliant. Compliance will need to be maintained for an additional two consecutive years before revocation can be considered.

In 2022, DT ID 3 – 16 Southway – reported the highest annual mean of 41.3 µg/m³, which exceeds the annual air quality objective of 40 µg/m³. However, it should be noted that following fall off with distance correction to estimate the annual mean at the nearest

receptor, this value fell to 34.4 $\mu\text{g}/\text{m}^3$. All other sites reported values below the annual objective, although only two sites – DT ID 2 (9 Southway) and DT ID 40 (The Old Chapel) – reported decreases in annual means when compared to 2021 data. 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.

Lewes AQMA

Table A.9 shows that there were 9 occasions where 1 hour NO_2 concentrations greater than 200 $\mu\text{g}/\text{m}^3$ were reported at the continuous monitoring site, LS8, located within the existing Lewes AQMA. As up to 35 exceedances a year are permitted by the NO_2 1 hour AQS objective, the site is compliant with the 1 hour NO_2 AQS objective. Table A.5 shows that the annual mean NO_2 concentration recorded at LS8 was 12.1 $\mu\text{g}/\text{m}^3$, which is well below the NO_2 annual mean AQS objective (40 $\mu\text{g}/\text{m}^3$). LS8 reported a valid data capture rate of 88.9% for NO_2 in 2022.

Figure A.2 shows the diffusion tubes within Lewes AQMA. The highest annual mean concentration was 29.3 $\mu\text{g}/\text{m}^3$, recorded at DT ID 12 (Fisher St. East). Only one site (DT ID 10, Fisher St.) reported an increase in annual average concentration compared to 2021 data. 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. Lewes AQMA has been compliant for the last three years, although excluding the years 2020 and 2021, which are likely to be considered aberrational years, this is the first year that there have been no annual exceedances within Lewes AQMA. Revocation of the Lewes AQMA will be able to be considered if compliance is maintained for the next two years.

Outside of AQMA's

Figure A.3 and Figure A.4 show the diffusion tubes outside of any AQMA's in LDC. During 2022, all sites outside of AQMA's in LDC recorded NO_2 concentrations below the annual mean AQS of 40 $\mu\text{g}/\text{m}^3$. DT ID 21 recorded the highest annual mean concentration outside of AQMA's of 33.0 $\mu\text{g}/\text{m}^3$.

Eastbourne Borough Council

Table A.6 and Table A.8 in Appendix A compare the ratified and adjusted monitored NO_2 annual mean concentrations in EBC for the past five years with the air quality objective of 40 $\mu\text{g}/\text{m}^3$. 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 in EBC, the full 2022 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.

Table A.10 in Appendix A compares the ratified continuous monitored NO₂ hourly mean concentrations in EBC for the past five years with the air quality objective of 200 µg/m³, not to be exceeded more than 18 times per year.

Figure A.5 and Figure A.6 show all the diffusion tubes within EBC. Results show that no monitoring location has been in exceedance of the annual mean objective of 40 µg/m³ in the last 5 years. Table A.10 shows that there were no 1 hour NO₂ concentrations greater than 200 µg/m³ reported at either of the continuous monitoring sites, EB1 and EB3.

3.2.2 Particulate Matter (PM₁₀)

Lewes District Council

Table A.11 in Appendix A: Monitoring Results compares the ratified and adjusted monitored PM₁₀ annual mean concentrations within LDC for the year 2022 with the air quality objective of 40 µg/m³. As this is the first year that site LS8 has been operational, comparisons with previous years are not possible.

Table A.13 in Appendix A compares the ratified continuous monitored PM₁₀ daily mean concentrations within LDC for the past five years with the air quality objective of 50µg/m³, not to be exceeded more than 35 times per year.

LS8 in Lewes Town Centre monitored PM₁₀ with a data capture of 88.1% for the year 2022. The annual mean concentration recorded at LS8 was 15.6 µg/m³, well below the annual mean AQS. There was 1 recorded exceedance of the 24 hour mean AQS (50 µg/m³).

Eastbourne Borough Council

Table A.12 in Appendix A: Monitoring Results compares the ratified and adjusted monitored PM₁₀ annual mean concentrations within EBC for the past five years with the air quality objective of 40 µg/m³.

Table A.14 in Appendix A compares the ratified continuous monitored PM₁₀ daily mean concentrations within EBC for the past five years with the air quality objective of 50 µg/m³, not to be exceeded more than 35 times per year.

In 2022, PM₁₀ data was collected at both automatic monitors EB1 and EB3, with data capture rates of 95.8% and 96.7% respectively. In 2022, the annual concentrations recorded were 19.3 µg/m³ and 14.6 µg/m³ at EB1 and EB3 respectively, well below the annual mean AQS. There were 5 recorded exceedances of the 24 hour mean 50 µg/m³ AQS at EB1 and 1 recorded exceedance of the 24 hour mean AQS at EB3.

3.2.3 Particulate Matter (PM_{2.5})

Lewes District Council

Table A.15 in Appendix A presents the ratified and adjusted monitored PM_{2.5} annual mean concentrations for 2022. As this is the first year that site LS8 has been operational, comparisons with previous years are not possible. In 2022, site LS8 had a valid data capture of 86.6%, and recorded an annual mean concentration of 9.8 µg/m³, well below the UK AQS of 20 µg/m³.

Eastbourne Borough Council

Table A.16 in Appendix A presents the ratified and adjusted monitored PM_{2.5} annual mean concentrations for the past five years. In 2022, PM_{2.5} data was collected at EB3 Holly Place, with data capture rates of 96.7%. The annual concentration recorded was 8.9 µg/m³, which is slightly higher than the annual mean reported in 2021 (8.4 µg/m³), but still well below the annual mean AQS of 20 µg/m³.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites in 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) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Inlet Height (m)
LS8	Little East Street	Roadside	541637	110276	NO ₂ , PM ₁₀ , PM _{2.5}	Yes (Lewes AQMA)	Chemiluminescent	13.1	3.1	2.25

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 in 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) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Inlet Height (m)
EB1	Eastbourne – Devonshire Park	Urban Background	561146	98346	NO ₂ , O ₃ , PM ₁₀	No	Chemiluminescent BAM Beta-attenuation; UV absorption	N/A	5	3
EB3	Eastbourne-Holly Place	Urban Background	560155	103150	NO ₂ , PM ₁₀ , PM _{2.5}	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 in 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)	Distance to Kerb of Nearest Road (m)	Tube Co-located with a Continuous Analyser	Height (m)
1	Seaford- Sutton Pk Rd/Warwick Ave	Roadside	548420	99223	NO2	No	4.5	2.8	No	2.8
2	LDC 10 - 9 Southway – Newhaven	Kerbside	544354	101388	NO2	Yes - Newhaven AQMA	5.0	1.0	No	2.5
3	LDC - 16 Southway – Newhaven	Kerbside	544414	101273	NO2	Yes - Newhaven AQMA	2.5	1.0	No	2.5
4	LDC 11 - Lewes Rd – Newhaven	Roadside	544273	101532	NO2	No	4.0	2.0	No	2.5
5	Telscombe – South Coast Rd/Central Ave	Roadside	540063	101263	NO2	No	6.0	1.8	No	2.6
6	LDC 8 - 8 Bay Vue Rd - Newhaven	Urban Background	544521	101089	NO2	No	3.0	N/A	No	2.5
7	LDC 25 - Westgate Chapel	Roadside	541285	109969	NO2	No	2.2	1.9	No	2.3
8	LDC 26 - Mount Pleasant/Sun Street	Roadside	541481	110277	NO2	Yes- Lewes AQMA	0.5	2.0	No	2.5
9	LDC 27 - West St Police Station	Roadside	541541	110246	NO2	Yes- Lewes AQMA	5.0	2.6	No	2.3
10	LDC 18 - Fisher Street	Kerbside	541505	110236	NO2	Yes- Lewes AQMA	0.0	1.4	No	2.5
11	LDC 36 - Fisher St West	Kerbside	541519	110167	NO2	Yes- Lewes AQMA	N/A	1.0	No	2.2
12	LDC 1- Fisher St East	Kerbside	541540	110130	NO2	Yes- Lewes AQMA	N/A	1.0	No	3.5
13	LDC 29 - Market St	Kerbside	541598	110169	NO2	Yes- Lewes AQMA	1.5	1.0	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)	Distance to Kerb of Nearest Road (m)	Tube Co-located with a Continuous Analyser	Height (m)
14	Peacehaven – o/s 223 South Coast Rd	Kerbside	540969	100974	NO2	No	2.9	1.4	No	2.7
15	LDC 31 - North St	Kerbside	541646	110370	NO2	No	5.0	1.0	No	3.0
16	LDC 33 - Cuilfail Tunnel/Thomas St	Roadside	542178	110454	NO2	No	8.0	5.0	No	3.0
17	LDC 4 - 159 Malling St – Lewes	Roadside	542315	110733	NO2	No	3.0	2.0	No	3.5
18	LDC 6 East Street	Roadside	541669	110278	NO2	No	0.0	3.5	No	2.5
19	LDC 30 - Little East St	Roadside	541726	110335	NO2	No	1.0	2.7	No	2.5
20	LDC 45 - School Hill	Kerbside	541755	110206	NO2	No	2.5	1.0	No	2.5
21	LDC - 204 School Hill	Roadside	541684	110181	NO2	No	0.0	2.7	No	2.6
22	LDC 35 - Walmer Lane/Lansdowne Terrace	Roadside	541709	109990	NO2	No	1.8	3.0	No	2.4
23	LDC 23 - Station St/Lansdowne Terrace	Roadside	541615	109968	NO2	Yes- Lewes AQMA	N/A	1.8	No	2.5
24	LDC 14 - Station St - Lewes	Roadside	541603	110001	NO2	Yes- Lewes AQMA	2.0	1.9	No	3.0
25	LS6 - Denton Community Centre	Urban Background	545142	102433	NO2	No	N/A	N/A	No	2.0
26	Peacehaven – South Coast Rd/Steyning Ave	Roadside	541231	100957	NO2	No	10.0	3.0	No	2.7
27	Give Way Sign Adj. To 1 Abinger Place	Roadside	541438	110293	NO2	No	4.0	1.5	No	2.0

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)	Distance to Kerb of Nearest Road (m)	Tube Co-located with a Continuous Analyser	Height (m)
28	8 Abinger Place	Roadside	541430	110328	NO2	No	1.2	1.5	No	2.5
29	Peacehaven – o/s 53 South Coast Rd	Roadside	542168	100675	NO2	No	10.0	3.0	No	2.7
30	ESCC 20 - A259 SFD (nr Chyngton Gardens)	Roadside	550077	99291	NO2	No	10.0	1.5	No	3.0
31	ESCC 23 - Railway Rd – Newhaven	Kerbside	544996	101264	NO2	No	5.0	1.0	No	3.0
32	ESCC 24 - 35 Heighton Crescent - Denton	Urban Background	544908	102704	NO2	No	10.0	N/A	No	1.8
33	ESSCC 2 - Ringmer Village Hall	Roadside	544681	112441	NO2	No	N/A	1.8	No	2.0
34	ESCC 18 - High St – Ditchling	Roadside	532605	115203	NO2	No	5.0	2.0	No	2.5
35	Ditchling High Street 2	Kerbside	532587	115410	NO2	No	1.0	1.0	No	1.8
36	ESCC 22 - Southover High St – Lewes	Roadside	541032	109613	NO2	No	1.0	2.0	No	2.1
37	Newhaven - Bridge Pub	Kerbside	544603	101485	NO2	Yes - Newhaven AQMA	N/A	0.5	No	2.0
38	Newhaven- Essex Place	Roadside	544497	101499	NO2	Yes - Newhaven AQMA	5.0	1.2	No	2.0
39	Newhaven - Rathan Court	Roadside	544330	101423	NO2	Yes - Newhaven AQMA	10.0	1.5	No	2.0
40	Newhaven - The Old Chapel	Roadside	544497	101285	NO2	Yes - Newhaven AQMA	3.0	1.5	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)	Distance to Kerb of Nearest Road (m)	Tube Co-located with a Continuous Analyser	Height (m)
41	The Drove - Newhaven	Roadside	544948	101549	NO2	No	N/A	4.0	No	2.5
42	Knight's Gate Road - Falmer Roundabout	Roadside	535187	108928	NO2	No	20.0	2.5	No	1.9
43	A26 South Heighton/nr Hollow	Roadside	544886	102879	NO2	No	12.0	1.0	No	1.0
44	C7 Piddinghoe Rd	Roadside	543431	103022	NO2	No	3.5	1.3	No	1.8
45	O/S Kingston Primary school	Roadside	539543	108284	NO2	No	15.0	2.5	No	1.8
46	Opp Seaford Station - Station Approach	Roadside	548167	99160	NO2	No	2.0	1.5	No	3
47	Plumpton Green/Station Rd, flood sign	Roadside	536441	116231	NO2	No	7.0	1.0	No	2
48	Barcombe High Str o/s old shop	Roadside	542029	115781	NO2	No	3.0	2.5	No	2.5
49	O/S Covers, Cooksbridge	Roadside	540141	113548	NO2	No	0.0	2.0	No	2
50	O/S 64 Brighton Rd	Roadside	544185	101350	NO2	No	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 in 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)	Distance to Kerb of Nearest Road (m)	Tube Co-located with a Continuous Analyser	Height (m)
1	Post Office	Kerbside	560774	99163	NO2	No	2.0	0.0	No	3.1
2	Langney KFC	Kerbside	561458	99116	NO2	No	4.0	0.0	No	2.9
3	27 Pevensey	Kerbside	561568	99108	NO2	No	3.0	0.0	No	2.7
4	Nail Fairy Seaside	Kerbside	561717	99061	NO2	No	3.0	0.0	No	2.8
5	34 Seaside	Kerbside	561621	99004	NO2	No	3.0	0.0	No	2.8
6	Top of Cavendish	Kerbside	561737	98948	NO2	No	3.0	0.0	No	2.6
7	Royale Parade/Prince's Park	Kerbside	562692	100149	NO2	No	4.0	0.0	No	2.7
8	Seaside Tesco	Kerbside	562655	100970	NO2	No	10.0	0.0	No	2.8
9	Larkspur / Friday	Kerbside	561885	103847	NO2	No	8.0	1.0	No	2.7
10	East Dean Rd	Roadside	557829	98190	NO2	No	20.0	3.0	No	2.0
11	The Goffs	Roadside	560440	99352	NO2	No	3.0	2.0	No	3.0
12	32 The Avenue	Kerbside	560943	99480	NO2	No	7.0	0.9	No	2.4
13	68 Susans	Kerbside	561354	99279	NO2	No	3.0	0.6	No	2.4

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)	Distance to Kerb of Nearest Road (m)	Tube Co-located with a Continuous Analyser	Height (m)
14	109 Whiteley Rd	Roadside	561527	99846	NO2	No	6.5	1.5	No	2.5
15	Opp 7 Lewes	Roadside	561043	99828	NO2	No	2.0	1.6	No	2.7
16	Lottebridge Tesco	Kerbside	562583	101109	NO2	No	N/A	0.9	No	2.7
17	3 Mountfield	Roadside	560749	102189	NO2	No	5.0	1.6	No	2.6
18	43 Brassey Ave	Roadside	560505	102196	NO2	No	7.0	1.7	No	2.5
19	Kings Drive / Weavers	Roadside	560134	100561	NO2	No	5.5	2.9	No	2.8
20	DGH Kings Drive	Roadside	559894	101035	NO2	No	11.0	0.9	No	2.9
21	114 Willingdon	Roadside	559730	100251	NO2	No	10.0	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) (2) N/A if not applicable.

Table A.5 – Annual Mean NO₂ Monitoring Results: Automatic Monitoring (µg/m³) in Lewes District Council

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
LS8	541637	110276	Roadside	88.9	78.8	-	-	-	-	12.1

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.

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/m³.

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

All means have been “annualised” as per LAQM.TG22 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 NO₂ Monitoring Results: Automatic Monitoring (µg/m³) in Eastbourne Borough Council

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
EB1	561150	98341	Urban Background	88.3	88.3	16.0	14.0	15.5	13.1	12.8
EB3	560085	103118	Urban Background	81.1	87.2	12.0	11.0	9.0	9.4	9.3

☒ Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.

☒ 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/m³.

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

All means have been “annualised” as per LAQM.TG22 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 NO₂ Monitoring Results: Non-Automatic Monitoring (µg/m³) in Lewes District Council

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
1	548420	99223	Roadside	83.3	84.7	24.5	25.2	18.5	20.7	20.1
2	544354	101388	Kerbside	91.7	92.1	37.2	33.4	24.2	28.5	28.1
3	544414	101273	Kerbside	100.0	99.7	39.9	40.7	31.6	36.9	41.3
4	544273	101532	Roadside	100.0	99.7	28.1	30.7	22.0	24.3	23.4
5	540063	101263	Roadside	50.0	49.9	23.0	23.4	16.6	18.0	18.3
6	544521	101089	Urban Background	100.0	99.7	18.7	14.8	12.4	15.5	14.1
7	541285	109969	Roadside	100.0	99.7	28.7	29.9	19.9	21.0	19.4
8	541481	110277	Roadside	58.3	58.0	22.3	23.7	14.9	18.0	16.0
9	541541	110246	Roadside	91.7	92.1	20.8	21.0	14.4	16.2	13.5
10	541505	110236	Kerbside	75.0	74.9	23.4	24.1	15.5	16.8	17.4
11	541519	110167	Kerbside	100.0	99.7	32.4	32.0	20.6	24.1	23.1
12	541540	110130	Kerbside	100.0	99.7	42.2	41.9	27.6	30.0	29.3
13	541598	110169	Kerbside	91.7	91.3	36.0	36.8	27.9	26.5	22.5
14	540969	100974	Kerbside	83.3	81.2	28.8	30.5	21.3	23.3	19.3
15	541646	110370	Kerbside	75.0	75.5	21.9	21.4	15.1	15.2	16.2
16	542178	110454	Roadside	100.0	99.7	29.5	30.4	22.3	24.9	22.4
17	542315	110733	Roadside	83.3	82.8	30.5	29.8	20.9	22.3	22.3
18	541669	110278	Roadside	83.3	83.9	24.1	23.2	15.3	17.0	16.8
19	541726	110335	Roadside	100.0	99.7	22.1	21.4	14.1	15.5	14.5
20	541755	110206	Kerbside	100.0	99.7	37.6	38.5	27.6	29.4	27.9
21	541684	110181	Roadside	83.3	83.1	41.4	43.6	31.6	33.0	35.3
22	541709	109990	Roadside	100.0	99.7	22.0	20.4	13.5	14.8	12.7
23	541615	109968	Roadside	66.7	66.2	25.8	24.7	16.1	19.1	17.7
24	541603	110001	Roadside	83.3	81.7	34.4	33.7	22.2	24.4	22.6
25	545142	102433	Urban Background	100.0	99.7	11.6	11.2	8.2	9.1	8.6
26	541231	100957	Roadside	83.3	82.8	23.2	22.8	16.9	17.4	18.4
27	541438	110293	Roadside	83.3	81.7	29.6	30.7	21.4	21.7	17.8
28	541430	110328	Roadside	91.7	90.7	28.3	29.4	19.2	21.2	20.7

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
29	542168	100675	Roadside	91.7	92.1	21.9	19.5	14.5	16.9	16.2
30	550077	99291	Roadside	91.7	91.3	30.2	29.0	22.5	26.7	14.3
31	544996	101264	Kerbside	100.0	99.7	22.0	20.1	15.4	18.6	22.6
32	544908	102704	Urban Background	100.0	99.7	14.4	13.8	10.5	11.7	17.8
33	544681	112441	Roadside	100.0	99.7	21.8	20.9	14.7	17.2	12.2
34	532605	115203	Roadside	100.0	99.7	29.7	26.9	18.2	20.8	20.0
35	532587	115410	Kerbside	100.0	99.7	23.1	21.4	13.8	16.2	16.0
36	541032	109613	Roadside	58.3	58.6	31.9	32.2	20.3	22.8	18.9
37	544603	101485	Kerbside	100.0	99.7	38.7	39.2	28.7	28.8	30.7
38	544497	101499	Roadside	100.0	99.7	31.2	30.7	21.5	24.0	25.1
39	544330	101423	Roadside	100.0	99.7	28.4	27.1	19.9	21.8	22.4
40	544497	101285	Roadside	83.3	83.9	44.1	44.6	34.1	35.8	33.7
41	544948	101549	Roadside	83.3	82.6	27.0	23.6	19.1	20.1	19.5
42	535187	108928	Roadside	50.0	50.4	-	57.0	25.6	30.8	31.8
43	544886	102879	Roadside	100.0	99.7	-	29.5	18.3	20.1	19.4
44	543431	103022	Roadside	91.7	91.6	-	24.3	15.8	17.1	17.3
45	539543	108284	Roadside	100.0	99.7	-	21.1	16.9	13.5	14.1
46	548167	99160	Roadside	91.7	90.7	-	29.5	17.9	21.6	19.5
47	536441	116231	Roadside	91.7	92.1	-	13.9	8.5	11.8	8.5
48	542029	115781	Roadside	83.3	83.9	-	16.6	10.7	13.8	12.2
49	540141	113548	Roadside	100.0	99.7	-	18.5	10.7	13.1	12.0
50	544185	101350	Roadside	100.0	99.7	-	42.6	25.8	29.1	29.1

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.

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 $\mu\text{g}/\text{m}^3$.

Exceedances of the NO_2 annual mean objective of $40\mu\text{g}/\text{m}^3$ are shown in **bold**.

NO_2 annual means exceeding $60\mu\text{g}/\text{m}^3$, indicating a potential exceedance of the NO_2 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.TG22 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 NO₂ Monitoring Results: Non-Automatic Monitoring (µg/m³) in Eastbourne Borough Council

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
1	560774	99163	Kerbside	100.0	98.4	14.0	15.5	19.8	22.5	23.4
2	561458	99116	Kerbside	100.0	98.4	12.0	11.7	14.2	16.9	17.1
3	561568	99108	Kerbside	100.0	98.4	-	26.0	19.1	19.3	20.3
4	561717	99061	Kerbside	100.0	98.4	-	21.6	22.9	23.9	24.8
5	561621	99004	Kerbside	100.0	98.4	-	24.7	22.8	23.9	23.9
6	561737	98948	Kerbside	100.0	98.4	-	30.1	15.5	17.8	18.0
7	562692	100149	Kerbside	100.0	98.4	-	31.9	16.6	20.9	20.6
8	562655	100970	Kerbside	83.3	84.9	-	24.2	22.4	25.9	25.5
9	561885	103847	Kerbside	100.0	98.4	-	23.8	15.0	17.5	17.3
10	557829	98190	Roadside	100.0	98.4	-	21.5	12.5	13.8	14.3
11	560440	99352	Roadside	100.0	98.4	-	10.4	17.5	19.6	19.8
12	560943	99480	Kerbside	100.0	98.4	-	18.5	17.1	18.7	19.5
13	561354	99279	Kerbside	100.0	98.4	-	25.9	17.3	18.2	18.2
14	561527	99846	Roadside	100.0	98.4	-	27.3	26.8	26.4	26.8
15	561043	99828	Roadside	66.7	66.2	-	25.6	17.3	18.4	19.6
16	562583	101109	Kerbside	100.0	98.4	-	39.3	18.9	22.2	24.3
17	560749	102189	Roadside	100.0	98.4	-	27.4	18.0	21.6	21.5
18	560505	102196	Roadside	100.0	98.4	-	31.8	16.2	17.6	17.8
19	560134	100561	Roadside	100.0	98.4	-	30.8	12.9	14.4	15.2
20	559894	101035	Roadside	100.0	98.4	-	25.1	18.0	20.9	21.8
21	559730	100251	Roadside	83.3	81.0	-	20.8	21.0	24.8	25.1

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.

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 $\mu\text{g}/\text{m}^3$.

Exceedances of the NO_2 annual mean objective of $40\mu\text{g}/\text{m}^3$ are shown in **bold**.

NO_2 annual means exceeding $60\mu\text{g}/\text{m}^3$, indicating a potential exceedance of the NO_2 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.TG22 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%).

Figure A.1 – Trends in Annual Mean NO₂ Concentrations within Newhaven AQMA in Lewes District Council

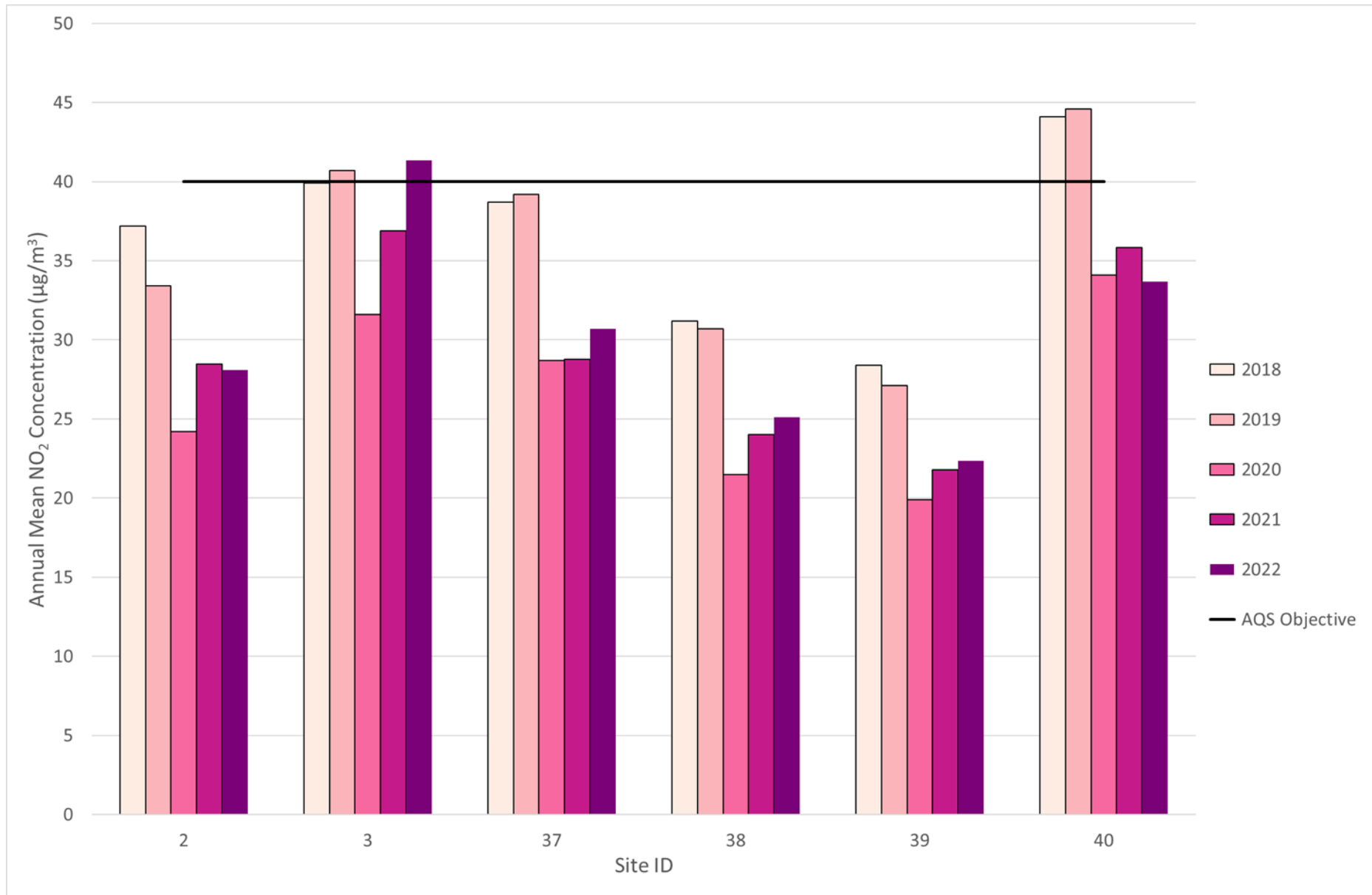


Figure A.2 – Trends in Annual Mean NO₂ Concentrations within Lewes AQMA in Lewes District Council

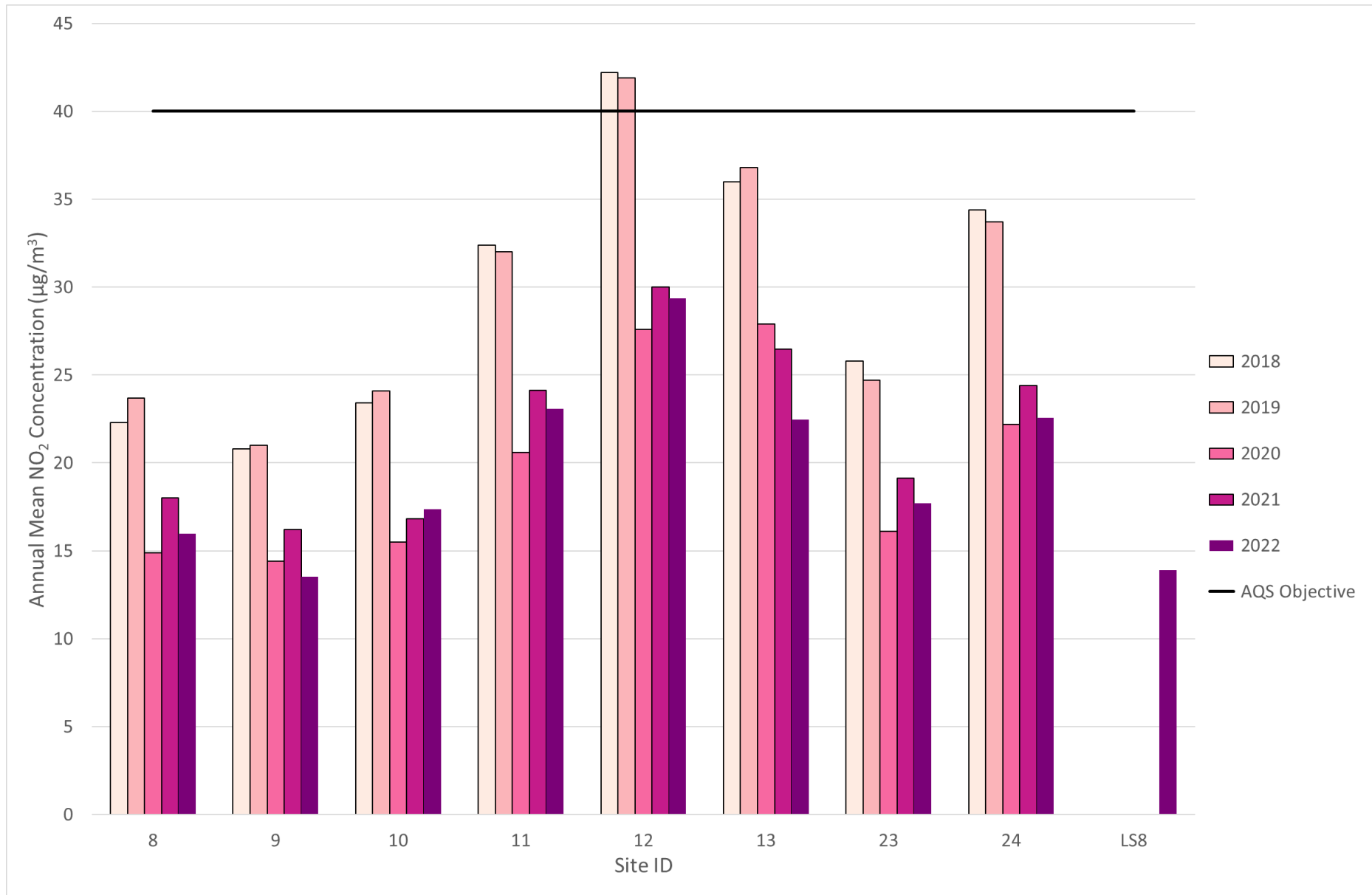


Figure A.3 – Trends in Annual Mean NO₂ Concentrations outside of AQMAs in Lewes District Council: Part 1

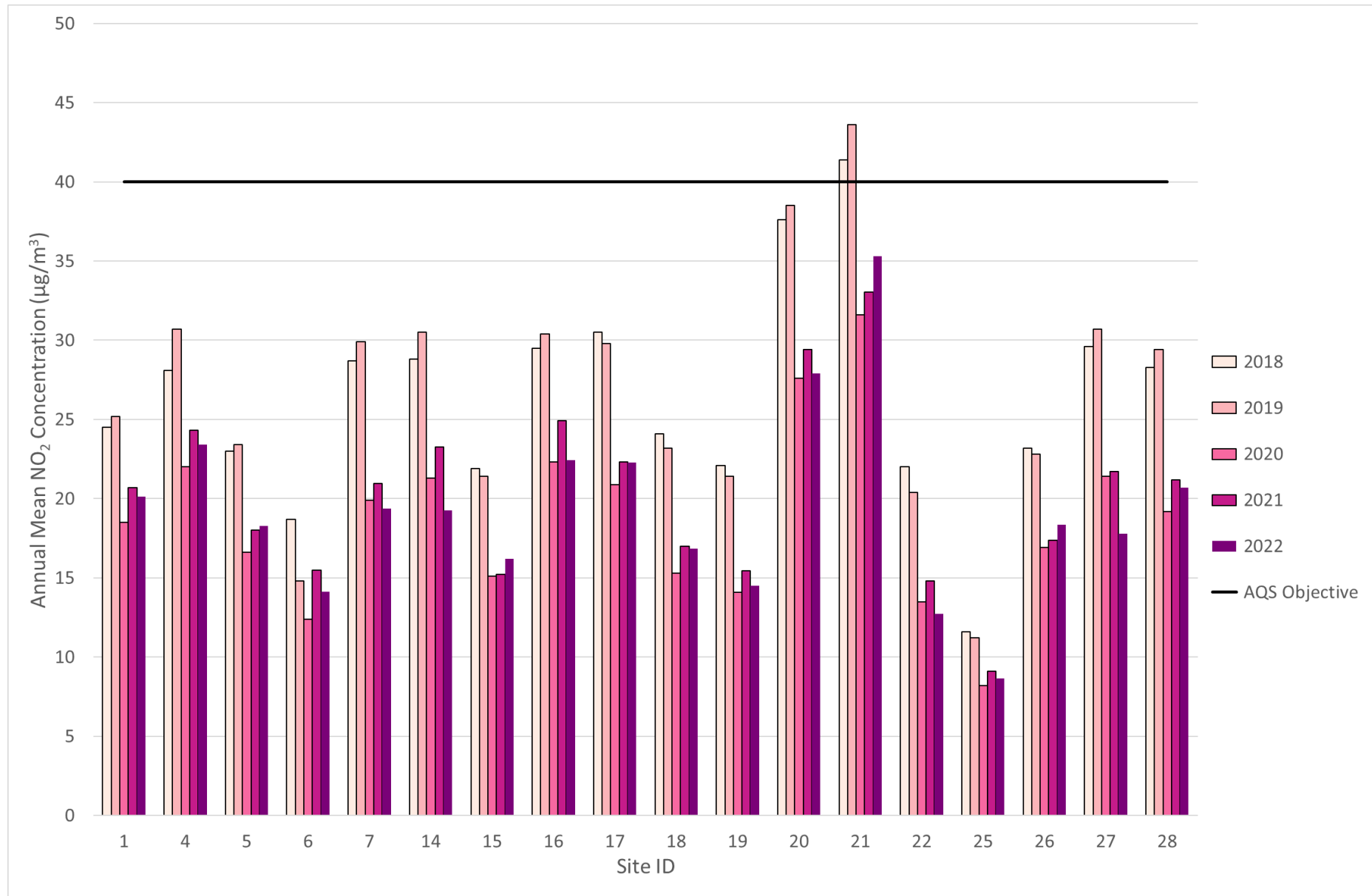


Figure A.4 – Trends in Annual Mean NO₂ Concentrations outside of AQMAs in Lewes District Council: Part 2

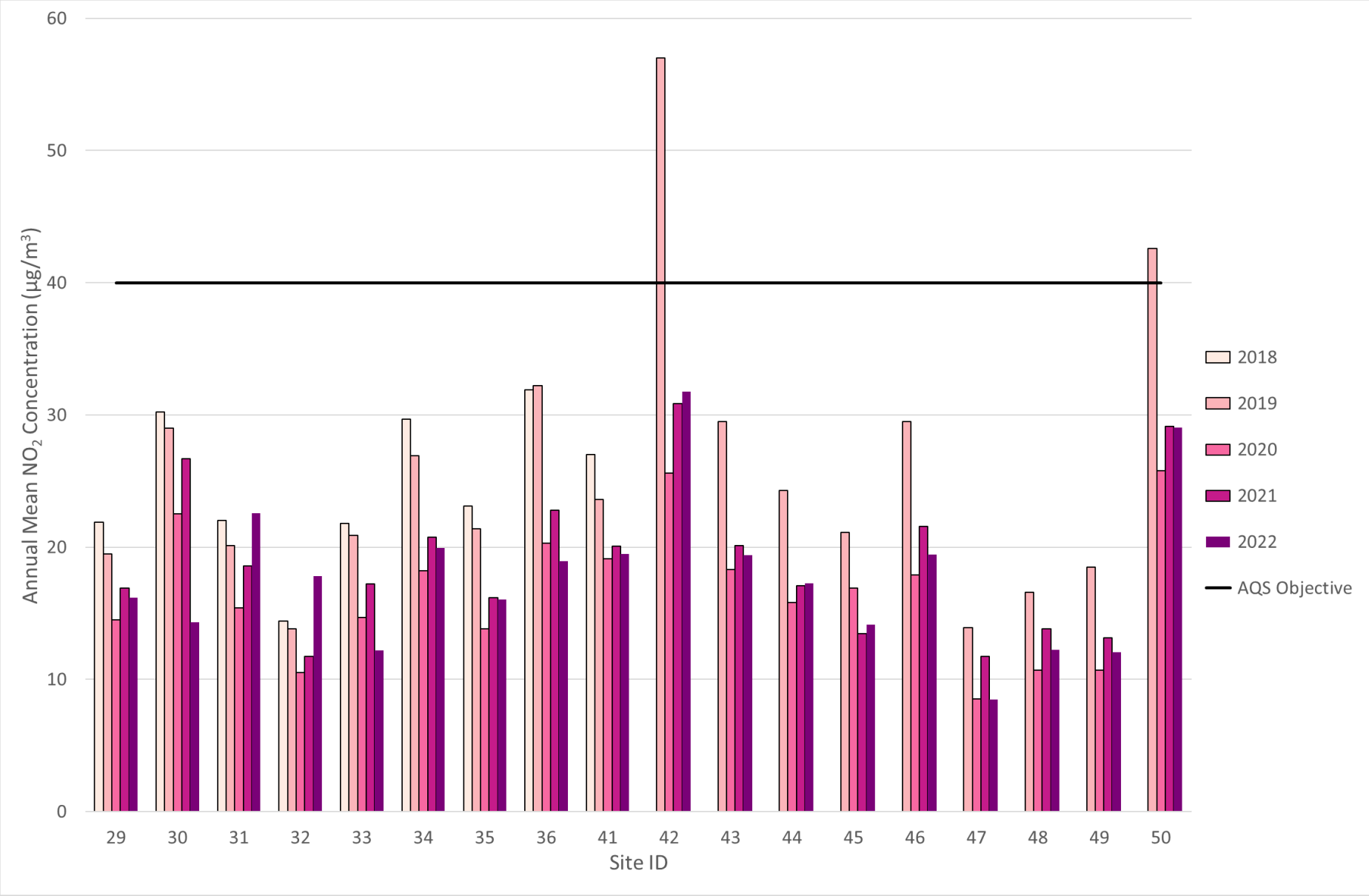


Figure A.5 – Trends in Annual Mean NO₂ Concentrations in Eastbourne Borough Council: Part 1

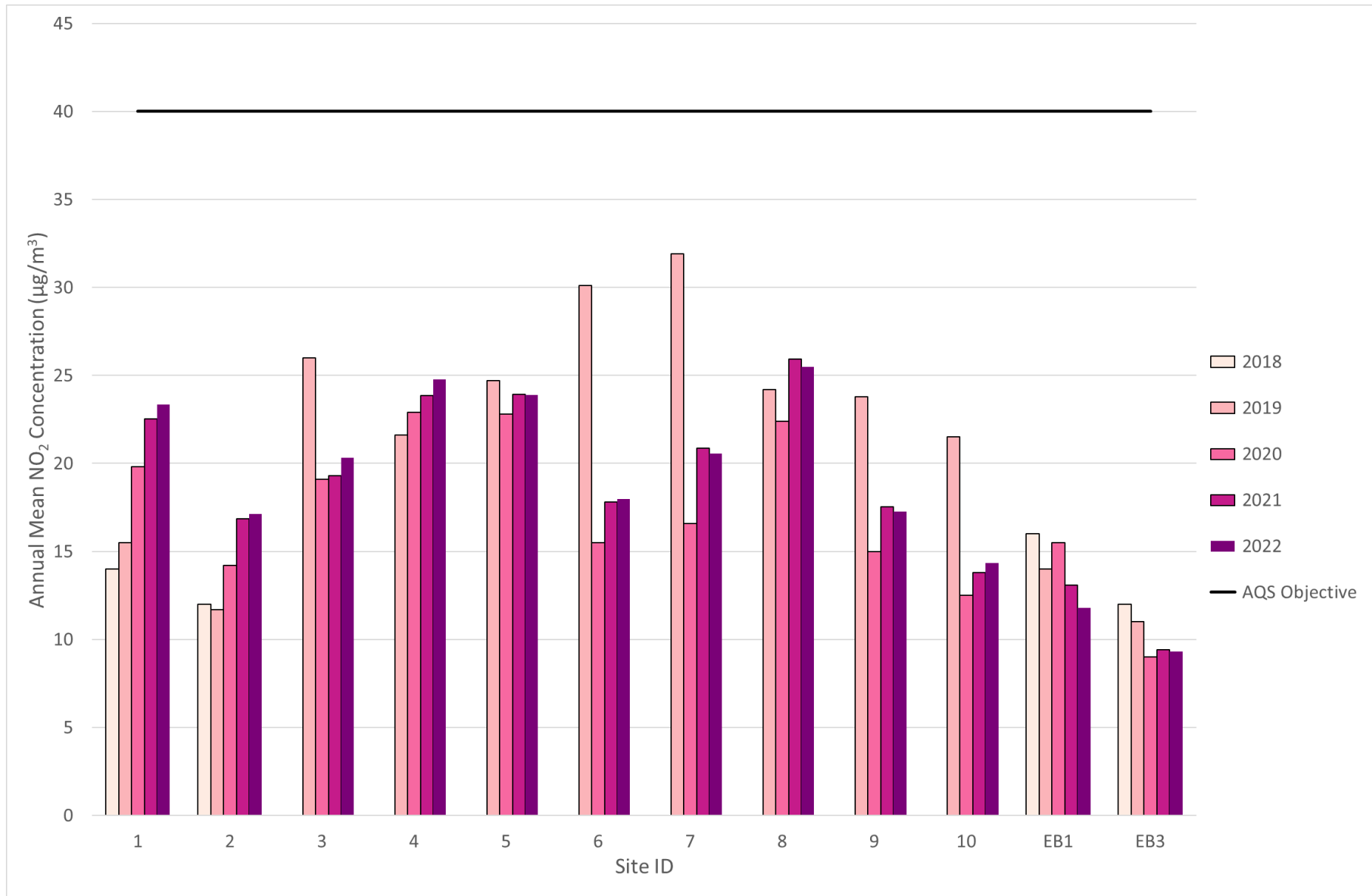


Figure A.6 – Trends in Annual Mean NO₂ Concentrations in Eastbourne Borough Council: Part 2

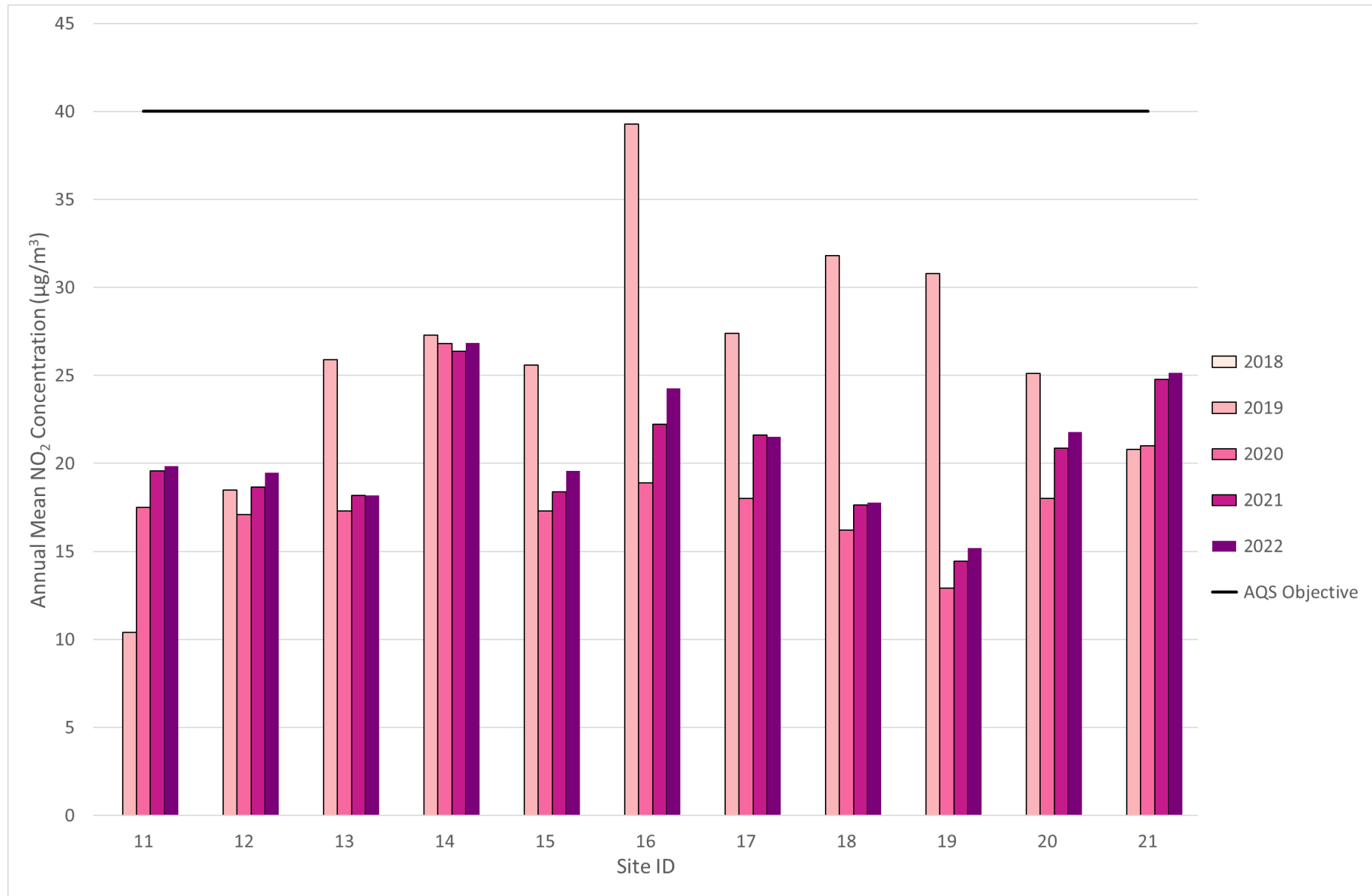


Table A.9 – 1-Hour Mean NO₂ Monitoring Results in Lewes District Council, Number of 1-Hour Means > 200µg/m³

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
LS8	541637	110276	Roadside	88.9	78.8	N/A	N/A	N/A	N/A	9 (158.2)

Notes:

Results are presented as the number of 1-hour periods where concentrations greater than 200µg/m³ have been recorded.

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

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

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

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

Table A.10 – 1-Hour Mean NO₂ Monitoring Results in Eastbourne Borough Council, Number of 1-Hour Means > 200µg/m³

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
EB1	561150	98341	Urban Background	88.3	88.3	0	0	0	0	0
EB3	560085	103118	Urban Background	87.2	81.1	0	0	0	0	0 (66.6)

Notes:

Results are presented as the number of 1-hour periods where concentrations greater than 200µg/m³ have been recorded.

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

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

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

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

Table A.11 – Annual Mean PM₁₀ Monitoring Results (µg/m³) in Lewes District Council

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
LS8	541637	110276	Roadside	99.4	88.1	-	-	-	-	15.6

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.

Notes:

The annual mean concentrations are presented as µg/m³.

Exceedances of the PM₁₀ annual mean objective of 40µg/m³ are shown in **bold**.

All means have been “annualised” as per LAQM.TG22 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 PM₁₀ Monitoring Results (µg/m³) in Eastbourne District Council

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
EB1	561150	98341	Urban Background	95.8	95.8	19	17	17	17.2	19.3
EB3	560085	103118	Urban Background	96.7	96.7	N/A	15.5	14	13.1	14.6

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.

Notes:

The annual mean concentrations are presented as µg/m³.

Exceedances of the PM₁₀ annual mean objective of 40µg/m³ are shown in **bold**.

All means have been “annualised” as per LAQM.TG22 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%).

Figure A.7 – Trends in Annual Mean PM₁₀ Concentrations in Eastbourne Borough Council

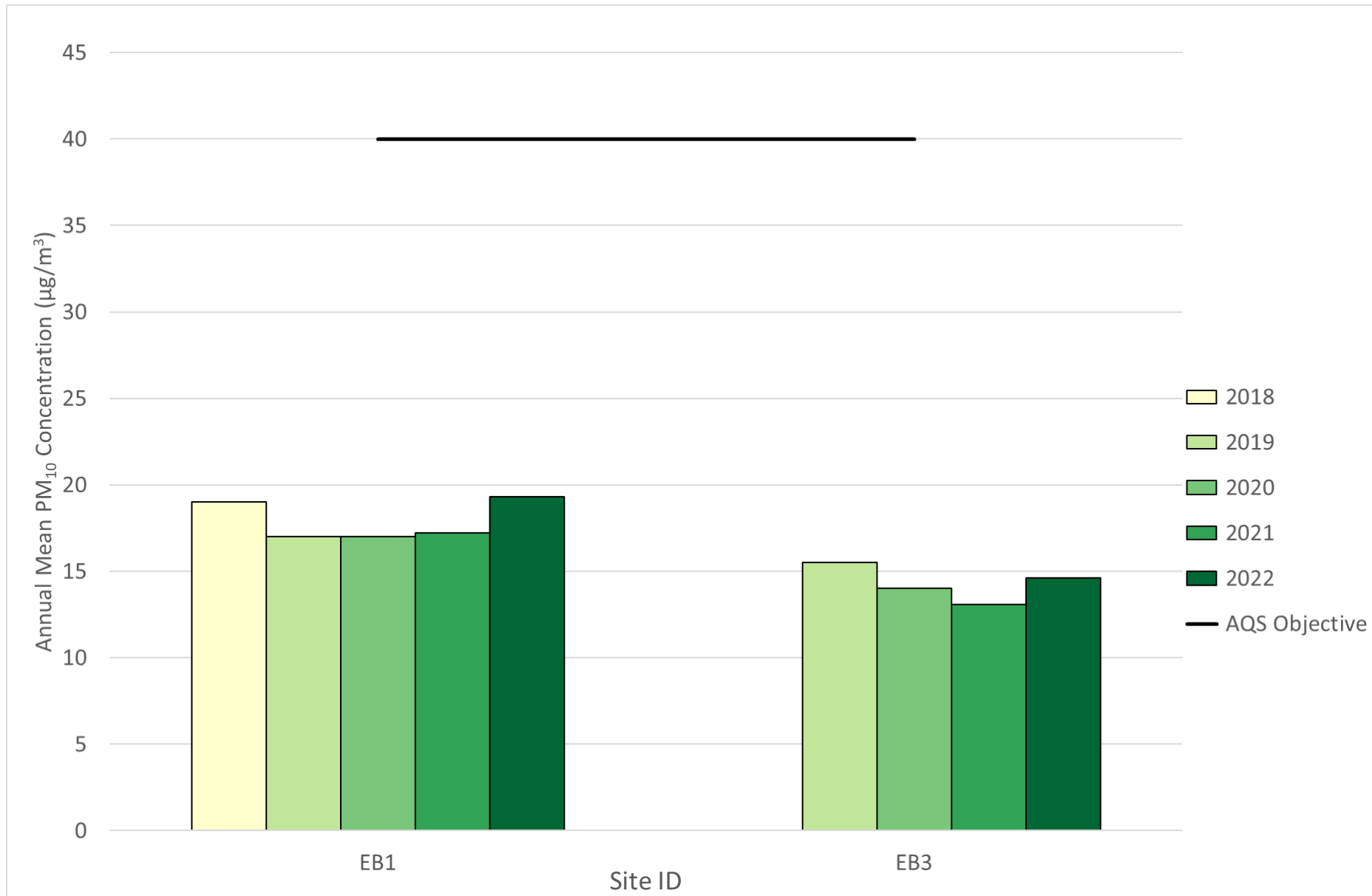


Table A.13 – 24-Hour Mean PM₁₀ Monitoring Results, Number of PM₁₀ 24-Hour Means > 50µg/m³ in Lewes District Council

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
LS8	541637	110276	Roadside	99.4	88.1	-	-	-	-	1

Notes:

Results are presented as the number of 24-hour periods where daily mean concentrations greater than 50µg/m³ have been recorded.

Exceedances of the PM₁₀ 24-hour mean objective (50µg/m³ 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 PM₁₀ Monitoring Results, Number of PM₁₀ 24-Hour Means > 50µg/m³ in Eastbourne Borough Council

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
EB1	561150	98341	Urban Background	95.8	95.8	2	1	1	2	5
EB3	560085	103118	Urban Background	96.7	96.7	-	3	0	1	1

Notes:

Results are presented as the number of 24-hour periods where daily mean concentrations greater than 50µg/m³ have been recorded.

Exceedances of the PM₁₀ 24-hour mean objective (50µg/m³ 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%).

Figure A.8 – Trends in Number of 24-Hour Mean PM₁₀ Results > 50µg/m³ in Eastbourne Borough Council

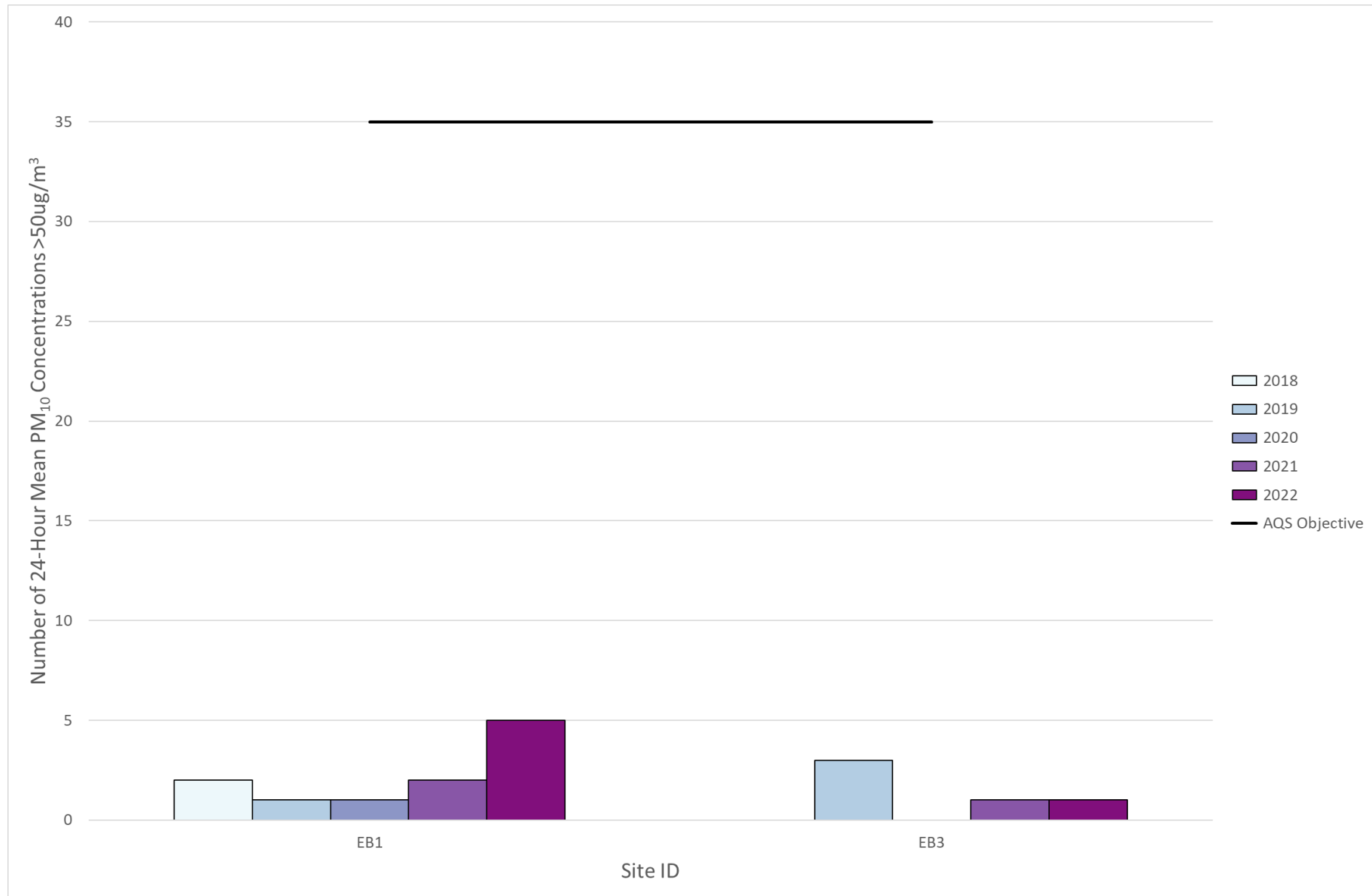


Table A.15 – Annual Mean PM_{2.5} Monitoring Results (µg/m³) in Lewes District Council

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
LS8	541637	110276	Roadside	97.8	86.6	N/A	N/A	N/A	N/A	9.8

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.

Notes:

The annual mean concentrations are presented as µg/m³.

All means have been “annualised” as per LAQM.TG22 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.16 – Annual Mean PM_{2.5} Monitoring Results (µg/m³) in Eastbourne Borough Council

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
EB3	560085	103118	Urban Background	96.7	96.7	13	10.4	9	8.4	8.9

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.

Notes:

The annual mean concentrations are presented as µg/m³.

All means have been “annualised” as per LAQM.TG22 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%).

Figure A.9 – Trends in Annual Mean PM_{2.5} Concentrations in Eastbourne Borough Council

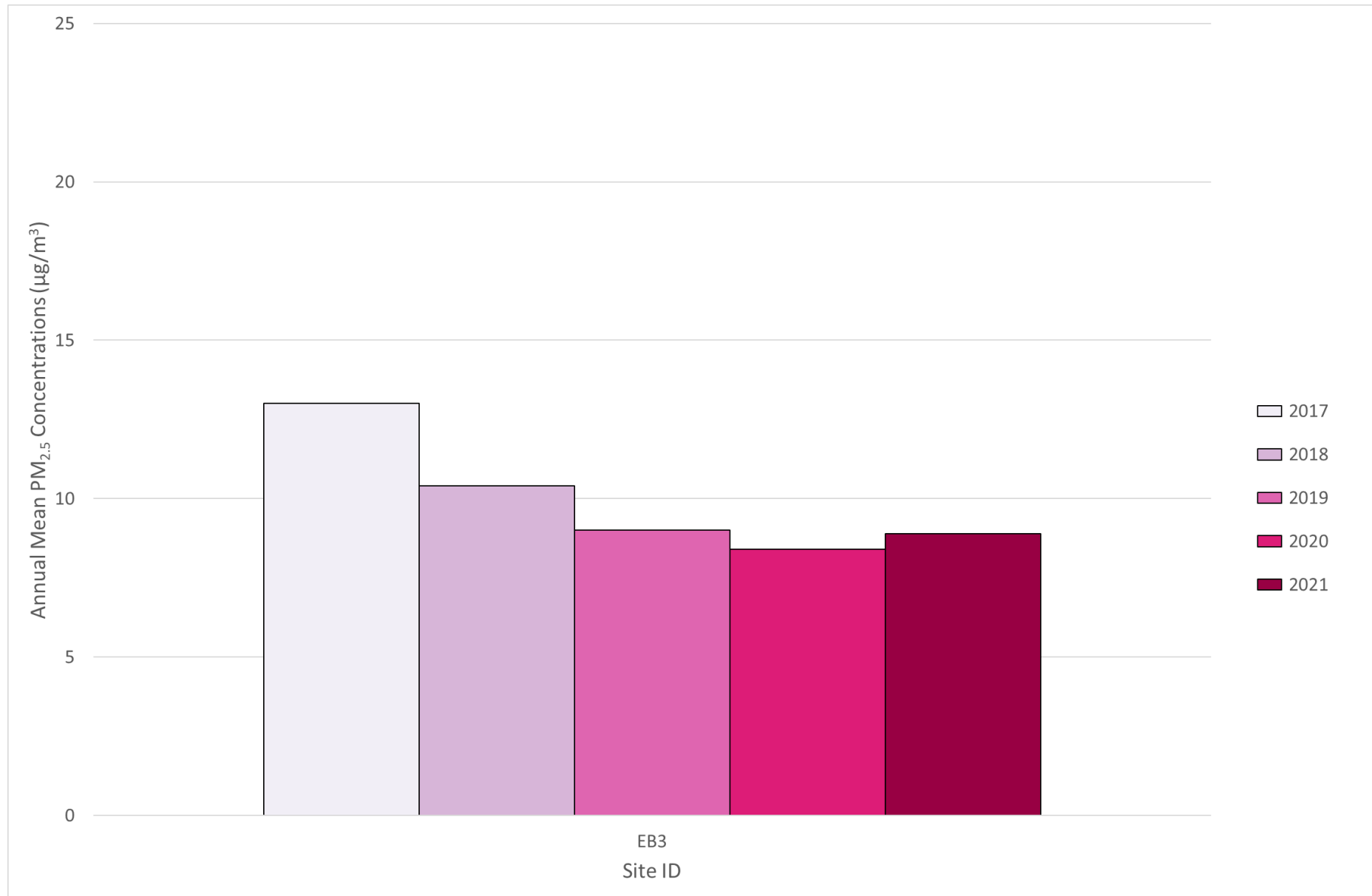


Table A.17 – Running 8-Hour Mean O₃ Monitoring Results in Eastbourne Borough Council, Number of 8-Hour Means > 100µg/m³

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2021 (%) ⁽²⁾	2018	2019	2020	2021	2022
EB1	544366	101367	Roadside	99.1	99.1	31	13	26	16	12

Notes:

Results are presented as the number of running 8-hour periods where concentrations greater than 100µg/m³ have been recorded.

Exceedances of the O₃ 8-hour mean objective (100µg/m³ not to be exceeded more than 10 times/year) are shown in **bold**.

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

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

Appendix B: Full Monthly Diffusion Tube Results for 2022

Table B.1 – NO₂ 2022 Diffusion Tube Results (µg/m³) in Lewes District Council

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.83)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
1	548420	99223	26.2	21.0	27.9			20.5	29.1	24.8	18.3	23.9	21.5	29.3	24.3	20.1		
2	544354	101388	37.1	26.8	45.4	51.0	13.3	26.3	36.3	36.6	30.7		29.1	40.0	33.9	28.1		
3	544414	101273	62.2	40.8	48.1	73.5	23.1	41.5	56.5	54.2	51.2	44.7	49.8	51.9	49.8	41.3	34.4	
4	544273	101532	36.9	26.8	31.9	42.0	12.7	21.8	31.1	27.3	27.6	29.9	32.4	17.8	28.2	23.4		
5	540063	101263	26.6						28.6	21.7		21.7	18.9	22.0	23.3	18.3		
6	544521	101089	23.9	12.7	22.3	26.1	6.0	12.1	17.5	16.2	16.0	15.7	15.2	20.5	17.0	14.1		
7	541285	109969	26.1	21.7	27.6	26.6	1.6	18.5	25.3	23.1	30.1	14.3	19.2	46.0	23.4	19.4		
8	541481	110277			21.3	16.1	14.4		17.9		21.6		20.1	27.1	19.8	16.0		
9	541541	110246		20.1	17.6	14.2	12.3	12.5	15.7	13.5	18.1	10.4	15.8	28.9	16.3	13.5		
10	541505	110236	25.2		23.6	18.1			18.3	16.8	23.6	11.7	17.5	33.6	20.9	17.4		
11	541519	110167	31.4	22.0	33.5	28.5	17.8	23.6	29.9	26.5	33.5	16.9	23.2	46.7	27.8	23.1		
12	541540	110130	35.7	34.0	40.2	38.4	23.8	28.6	36.9	34.2	44.1	20.9	29.7	57.7	35.4	29.3		
13	541598	110169	33.3	34.1	28.6	24.0	20.3	23.0	26.9	25.8	34.8	19.8	27.4		27.1	22.5		
14	540969	100974	30.7	26.4	29.0	42.8	8.1	12.0	19.8		19.4	19.4		24.6	23.2	19.3		
15	541646	110370	23.0	16.9	20.5	17.7	11.0	13.1			20.9		18.2	34.5	19.5	16.2		
16	542178	110454	30.0	30.0	27.8	25.3	17.4	21.7	26.9	23.6	32.3	18.2	27.8	43.0	27.0	22.4		
17	542315	110733	30.4	22.8	29.0	26.4			25.1	25.2	30.4	15.3	21.0	42.8	26.8	22.3		
18	541669	110278	26.7	20.7	17.8	21.3	12.1	14.2	15.8	17.0			16.9	40.3	20.3	16.8		
19	541726	110335	20.4	16.9	23.6	15.2	10.8	13.2	16.7	14.6	19.1	10.0	16.8	32.5	17.5	14.5		
20	541755	110206	37.2	36.7	37.0	31.9	21.4	27.3	30.7	34.2	44.3	21.2	30.5	51.0	33.6	27.9		
21	541684	110181	42.6	45.9	40.8	37.7	32.9	35.3			52.7	32.0	40.6	64.9	42.5	35.3		
22	541709	109990	2.5	18.3	19.0	16.1	9.3	13.0	14.1	14.1	20.6	9.6	13.4	34.0	15.3	12.7		
23	541615	109968			24.8	21.0	12.8	16.0	20.3	18.2	27.3	13.4			19.2	17.7		
24	541603	110001	30.4	21.8	29.8	27.5	22.1	25.4	32.9	27.1	35.2	19.8			27.2	22.6		
25	545142	102433	14.4	9.5	11.8	14.3	4.5	7.4	10.4	9.4	8.3	10.3	9.7	14.8	10.4	8.6		
26	541231	100957	23.5	18.7	21.3	31.4			22.8	19.0	17.2	18.7	20.1	28.3	22.1	18.4		
27	541438	110293	27.2	28.5	28.5	24.3	19.3	21.2	26.2	22.9	0.5	15.7			21.4	17.8		
28	541430	110328	30.4	22.5	29.4	25.0	16.1	18.3	23.1		28.7	15.8	21.4	43.6	24.9	20.7		
29	542168	100675	28.8	16.6	22.8	29.5	7.2	15.5		17.1	17.5	15.8	17.7	25.9	19.5	16.2		
30	550077	99291	27.0	16.0	19.4	18.3	12.3	13.9	17.5	16.7	22.4	11.6	14.6		17.3	14.3		
31	544996	101264	33.9	30.1	31.3	28.8	18.8	18.9	24.4	23.1	32.1	17.4	19.5	48.3	27.2	22.6		
32	544908	102704	29.7	17.9	23.0	30.4	8.7	14.7	21.7	20.1	20.3	19.3	22.1	29.6	21.5	17.8		
33	544681	112441	18.9	16.2	13.9	17.9	6.4	10.6	15.2	12.1	11.3	15.7	14.8	23.1	14.7	12.2		
34	532605	115203	30.7	15.3	25.6	26.1	13.1	18.3	24.0	24.0	30.2	15.4	23.3	42.6	24.0	20.0		
35	532587	115410	23.2	24.7	20.2	16.4	11.5	15.1	18.4	18.3	23.7	12.0	13.6	34.7	19.3	16.0		
36	541032	109613	34.1	29.3	29.2						27.0	0.6	26.3	30.6	25.3	18.9		
37	544603	101485	44.0	36.3	41.0	53.5	17.4	28.5	41.7	36.8	33.2	34.9	35.3	41.3	37.0	30.7		

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.83)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
38	544497	101499	36.8	25.6	35.1	46.3	15.9	26.0	37.3	29.2	27.2	24.0	25.7	33.8	30.2	25.1		
39	544330	101423	29.5	23.0	31.9	42.8	10.3	19.8	32.1	28.4	26.3	30.0	22.4	26.9	26.9	22.4		
40	544497	101285	43.7	42.8	40.3	63.1	22.0	32.6		40.4		39.3	40.9	40.9	40.6	33.7		
41	544948	101549	31.6	18.3	27.1	37.6	9.2			24.7	21.0	17.3	22.0	26.0	23.5	19.5		
42	535187	108928							40.0	31.0	17.1	44.6	38.7	45.0	36.1	31.8		
43	544886	102879	26.8	21.1	21.8	31.5	10.8	17.9	30.0	25.1	21.8	24.0	23.1	26.5	23.4	19.4		
44	543431	103022	24.6	16.6	25.7	30.0	8.4	14.4	23.3	20.7		20.7	19.4	25.2	20.8	17.3		
45	539543	108284	22.1	15.7	18.1	23.9	7.1	12.2	19.5	18.0	17.1	16.3	12.9	21.6	17.0	14.1		
46	548167	99160	29.3	8.3	29.2	41.9	9.2	18.1	28.4		23.8	20.8	21.5	27.3	23.4	19.5		
47	536441	116231		11.6	12.8	10.9	6.1	7.3	9.1	7.4	11.8	5.4	8.1	21.8	10.2	8.5		
48	542029	115781	20.9	13.5	16.3	13.9	8.5	9.6	12.7	11.4			11.0	29.6	14.7	12.2		
49	540141	113548	19.5	12.1	16.4	15.0	8.5	11.6	13.6	12.5	16.8	7.6	11.5	29.1	14.5	12.0		
50	544185	101350	37.5	33.7	39.5	53.4	15.0	26.6	38.6	33.3	33.8	33.9	34.7	40.0	35.0	29.1		

- All erroneous data has been removed from the NO₂ diffusion tube dataset presented in Table B.1.
- Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.
- Local bias adjustment factor used.
- National bias adjustment factor used.
- Where applicable, data has been distance corrected for relevant exposure in the final column.
- LDC confirm that all 2022 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.

Notes:

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

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

See Appendix C for details on bias adjustment and annualisation.

Table B.2 – NO₂ 2022 Diffusion Tube Results (µg/m³) in Eastbourne Borough Council

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.83)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
1	560774	99163	30.0	22.2	28.5	27.2	26.6	28.3	28.5	30.9	28.9	28.4	24.6	33.7	28.1	23.4		
2	561458	99116	27.4	16.5	24.0	20.8	17.8	18.0	18.3	19.7	21.4	18.2	17.2	28.8	20.7	17.1		
3	561568	99108	29.4	20.0	27.1	23.3	22.6	24.6	23.7	24.8	22.3	24.8	22.3	29.0	24.5	20.3		
4	561717	99061	33.9	25.4	31.2	30.1	26.2	31.5	32.0	28.9	29.9	30.0	26.8	32.9	29.8	24.8		
5	561621	99004	36.9	23.3	31.9	30.4	28.7	25.0	25.6	28.8	29.5	25.9	22.9	36.0	28.8	23.9		
6	561737	98948	29.1	15.0	22.2	21.7	19.8	18.3	20.6	24.1	21.9	18.7	17.1	31.8	21.7	18.0		
7	562692	100149	31.5	20.9	26.5	24.4	22.9	22.5	25.9	22.7	21.8	25.0	20.3	32.1	24.8	20.6		
8	562655	100970	36.6	27.3	29.7	29.5	29.9	28.9	31.3	30.8	29.9	34.1	30.7	25.5	25.5			
9	561885	103847	30.4	19.0	23.4	19.1	18.6	17.8	17.6	18.1	19.7	20.3	19.2	26.4	20.8	17.3		
10	557829	98190	17.1	12.5	20.7	17.9	18.2	20.9	19.8	18.7	14.6	16.7	12.5	17.1	17.3	14.3		
11	560440	99352	33.5	19.3	24.9	22.9	21.7	21.7	20.7	22.7	25.7	21.1	21.8	32.0	23.9	19.8		
12	560943	99480	31.8	21.2	28.0	20.2	20.9	20.8	19.6	19.3	22.4	23.1	22.2	31.7	23.5	19.5		
13	561354	99279	28.3	16.7	25.6	19.3	19.8	20.6	18.1	19.3	20.9	22.8	19.9	31.2	21.9	18.2		
14	561527	99846	37.5	26.8	36.0	32.8	29.7	33.2	33.8	34.8	31.8	24.1	30.3	38.8	32.3	26.8		
15	561043	99828	30.8	21.0	24.5	20.8	19.8	23.4				34.0		34.4	26.1	19.6		
16	562583	101109	35.5	20.9	33.1	30.3	26.7	28.7	29.3	31.9	30.4	26.5	24.3	33.2	29.2	24.3		
17	560749	102189	32.8	20.8	29.7	27.6	22.4	22.8	24.5	26.4	24.8	24.7	22.2	32.1	25.9	21.5		
18	560505	102196	25.7	17.5	24.9	20.7	18.1	20.1	19.9	21.1	20.3	20.6	20.2	28.1	21.4	17.8		
19	560134	100561	22.8	14.7	21.6	18.1	14.8	15.8	16.1	16.7	18.3	18.3	16.4	26.1	18.3	15.2		
20	559894	101035	31.9	21.6	29.4	26.2	23.0	24.3	25.1	26.8	26.9	25.7	21.9	32.1	26.2	21.8		
21	559730	100251	37.4	22.1	34.7	32.0	24.7	27.4	27.3	28.6	30.5			38.5	30.3	25.1		

- All erroneous data has been removed from the NO₂ diffusion tube dataset presented in Table B.1.
- Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.
- Local bias adjustment factor used.
- National bias adjustment factor used.
- Where applicable, data has been distance corrected for relevant exposure in the final column.
- EBC confirm that all 2022 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.

Notes:

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

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

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 and Eastbourne Borough Council During 2022

LDC and EBC have not identified any new sources relating to air quality within the reporting year of 2022.

Additional Air Quality Works Undertaken by Lewes District Council and Eastbourne Borough Council During 2022

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.

EBC has not completed any additional works within the reporting year of 2022.

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 NO₂ PT forms an integral part of the UK NO₂ 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 2022 Gradko participated in the AIR PT programme, and obtained a 100% rating for AIR-PT AR049 (January – February 2022) and a 100% rating for AIR-PT AR050 (May – June 2022). The July 2022 – December 2022 results have not yet been published at the time of writing. Results can be found at: https://laqm.defra.gov.uk/wp-content/uploads/2022/07/LAQM-NO2-Performance-data_Up-to-June-2022_V2.1.pdf.

The diffusion tubes are supplied and analysed by Gradko utilising the 20% triethanolamine (TEA) in water preparation method. Diffusion tube monitoring during 2022 was undertaken in line with the Diffusion Tube Monitoring Calendar and recommended exposure period (5 weeks (+/- 4 days)).

Diffusion Tube Annualisation

Table C.1 – Annualisation Summary (concentrations presented in $\mu\text{g}/\text{m}^3$) in LDC

Site ID	Annualisation Factor Brighton Preston Park	Annualisation Factor Lullington Heath	Annualisation Factor Portsmouth	Average Annualisation Factor	Raw Data Simple Annual Mean ($\mu\text{g}/\text{m}^3$)	Annualised Data Simple Annual Mean ($\mu\text{g}/\text{m}^3$)
5	0.9189	1.0382	0.8807	0.9459	23.3	22.0
8	0.9863	0.9299	1.0051	0.9738	19.8	19.3
23	1.1195	1.0411	1.1656	0.9459	23.3	22.0
36	0.8816	0.9711	0.8526	0.9738	19.8	19.3
42	1.0478	1.1347	1.0023	1.1087	19.2	21.3

Table C.2 – Annualisation Summary (concentrations presented in $\mu\text{g}/\text{m}^3$) in EBC

Site ID	Annualisation Factor Brighton Preston Park	Annualisation Factor Lullington Heath	Annualisation Factor Portsmouth	Average Annualisation Factor	Raw Data Simple Annual Mean ($\mu\text{g}/\text{m}^3$)	Annualised Data Simple Annual Mean ($\mu\text{g}/\text{m}^3$)
15	0.9157	0.8784	0.9131	0.9024	26.1	23.6

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2023 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.TG22 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_x/NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method. Figure C shows a screenshot of the National Diffusion Tube Bias Adjustment Factor Spreadsheet (March 2023) used in this report.

LDC and EBC have applied a national bias adjustment factor of 0.83 to the 2022 monitoring data. A summary of bias adjustment factors used by LDC and EBC over the past five years is presented in Table C.3.

Table C.3 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2022	National	03/23	0.83
2021	National	06/22	0.84
2020	National	09/21	0.81
2019	National	03/20	0.93
2018	National	03/19	0.93

National Diffusion Tube Bias Adjustment Spreadsheet (March 2023)

National Diffusion Tube Bias Adjustment Factor Spreadsheet							Spreadsheet Version Number: 03/23			
Follow the steps below in the correct order to show the results of relevant co-location studies							This spreadsheet will be updated at the end of June 2023			
Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods							Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet			
This spreadsheet will be updated every few months; the factors may therefore be subject to change. This should not discourage their immediate use.							LAQM Helpdesk Website			
The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.							Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.			
Step 1:	Step 2:	Step 3:	Step 4:							
Select the Laboratory that Analyses Your Tubes from the Drop-Down List	Select a Preparation Method from the Drop-Down List	Select a Year from the Drop-Down List	Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor ³ shown in blue at the foot of the final column.							
If a laboratory is not shown, we have no data for this laboratory.	If a preparation method is not shown, we have no data for this method at this laboratory.	If a year is not shown, we have no data ²	If you have your own co-location study then see footnote ⁴ . If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953							
Analysed By ¹	Method ²	Year ²	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m ³)	Automatic Monitor Mean Conc. (Cm) (µg/m ³)	Bias (B)	Tube Precision ⁵	Bias Adjustment Factor (A) (Cm/Dm)
Gradko	20% TEA in water	2022	R	Blackburn With Darwen Bc	12	26	19	35.0%	G	0.74
Gradko	20% TEA in water	2022	R	Gedling Borough Council	12	31	26	19.3%	G	0.83
Gradko	20% TEA in water	2022	R	Ards And North Down Borough Council	12	33	22	49.4%	G	0.67
Gradko	20% TEA in water	2022	R	Bath & North East Somerset	12	30	25	19.0%	G	0.84
Gradko	20% TEA in water	2022	R	Birmingham City Council	11	32	24	36.8%	G	0.73
Gradko	20% TEA in water	2022	UB	East Devon District Council	12	8	7	23.6%	G	0.81
Gradko	20% TEA in water	2022	R	Gateshead Council	11	23	20	14.2%	G	0.88
Gradko	20% TEA in water	2022	R	Gateshead Council	12	23	21	12.7%	G	0.89
Gradko	20% TEA in water	2022	R	Gateshead Council	12	25	23	10.1%	G	0.91
Gradko	20% TEA in water	2022	R	Gateshead Council	11	30	23	29.0%	G	0.77
Gradko	20% TEA in water	2022	R	Gateshead Council	9	31	36	-14.0%	G	1.16
Gradko	20% TEA in Water	2022	R	Lisburn & Castlereagh City Council	12	24	19	23.7%	G	0.81
Gradko	20% TEA in Water	2022	R	Monmouthshire County Council	12	35	28	23.8%	G	0.81
Gradko	20% TEA in water	2022	KS	Marylebone Road Intercomparison	12	52	42	22.8%	G	0.81
Gradko	20% TEA in Water	2022	UB	Plymouth City Council	12	18	18	3.2%	G	0.97
Gradko	20% TEA in water	2022	UC	Belfast City Council	12	26	20	30.7%	G	0.76
Gradko	20% TEA in water	2022	R	Belfast City Council	12	47	36	28.1%	G	0.78
Gradko	20% TEA in water	2022	R	Belfast City Council	12	25	22	14.0%	G	0.88
Gradko	20% TEA in water	2022	R	Belfast City Council	12	36	28	29.0%	G	0.78
Gradko	20% TEA in water	2022	R	Brighton & Hove City Council	10	37	23	62.8%	G	0.61
Gradko	20% TEA in water	2022	UB	Hertsmere Borough Council	12	16	15	7.1%	G	0.93
Gradko	20% TEA in water	2022	R	Southampton City Council	12	36	28	30.6%	G	0.77
Gradko	20% TEA in water	2022	UC	Southampton City Council	12	28	24	15.4%	G	0.87
Gradko	20% TEA in water	2022	R	Southampton City Council	12	34	31	8.4%	G	0.92
Gradko	20% TEA in water	2022	R	Worcestershire	11	13	12	4.2%	G	0.96
Gradko	20% TEA in water	2022	R	Lancaster City Council	13	34	27	25.8%	G	0.79
Gradko	20% TEA in water	2022	R	Lancaster City Council	12	28	24	15.2%	G	0.87
Gradko	20% TEA in water	2022		Overall Factor³ (27 studies)				Use		0.83

NO₂ Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO₂ concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO₂ fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO₂ concentrations corrected for distance are presented in Table B.1.

Table C.4 – NO₂ Fall off With Distance Calculations (concentrations presented in µg/m³) in LDC

Site ID	Distance (m): Monitoring Site to Kerb	Distance (m): Receptor to Kerb	Monitored Concentration (Annualised and Bias Adjusted)	Background Concentration	Concentration Predicted at Receptor
3	1.0	3.5	41.3	13.7	34.4

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>). The continuous monitoring site EB1 in EBC is managed by the Sussex Air Quality Partnership. The second continuous monitoring site, EB3, is managed by the AURN.

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_x 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 Bureau Veritas for Devonshire Park.

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

PM₁₀ and PM_{2.5} Monitoring Adjustment

No adjustment of particulate data was undertaken as the data is measured and reported as Gravimetric Equivalent from Lewes Little East Street, Eastbourne, Devonshire Park and AURN Eastbourne Holly Place. No data was monitored at Newhaven in 2022.

Automatic Monitoring Annualisation

All automatic monitoring locations within Lewes District Council and Eastbourne District Council recorded data capture of greater than 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualisation.

NO₂ Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO₂ concentration at the nearest location relevant for exposure has been estimated using the NO₂ fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO₂ concentrations corrected for distance are presented in Table B.1.

No automatic NO₂ monitoring locations within Lewes District Council or Eastbourne Borough Council required distance correction during 2021.

Appendix D: Maps of Monitoring Locations and AQMAs

Figure D.1 – Map of Monitoring Sites in LDC: Northern Lewes and Lewes Town Centre AQMA

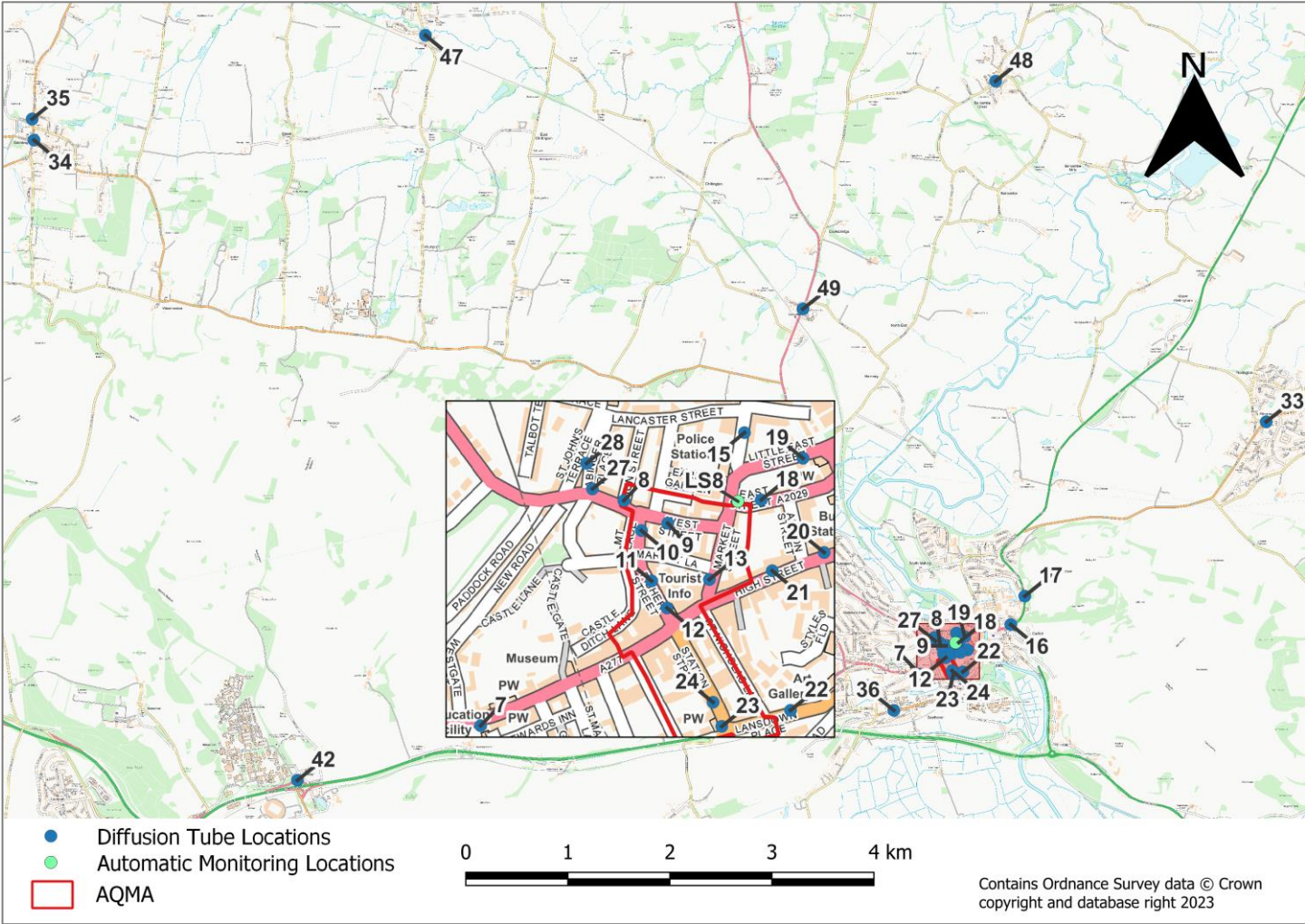


Figure D.2 – Map of Monitoring Site in LDC: Southern Lewes with Newhaven Ring Road AQMA

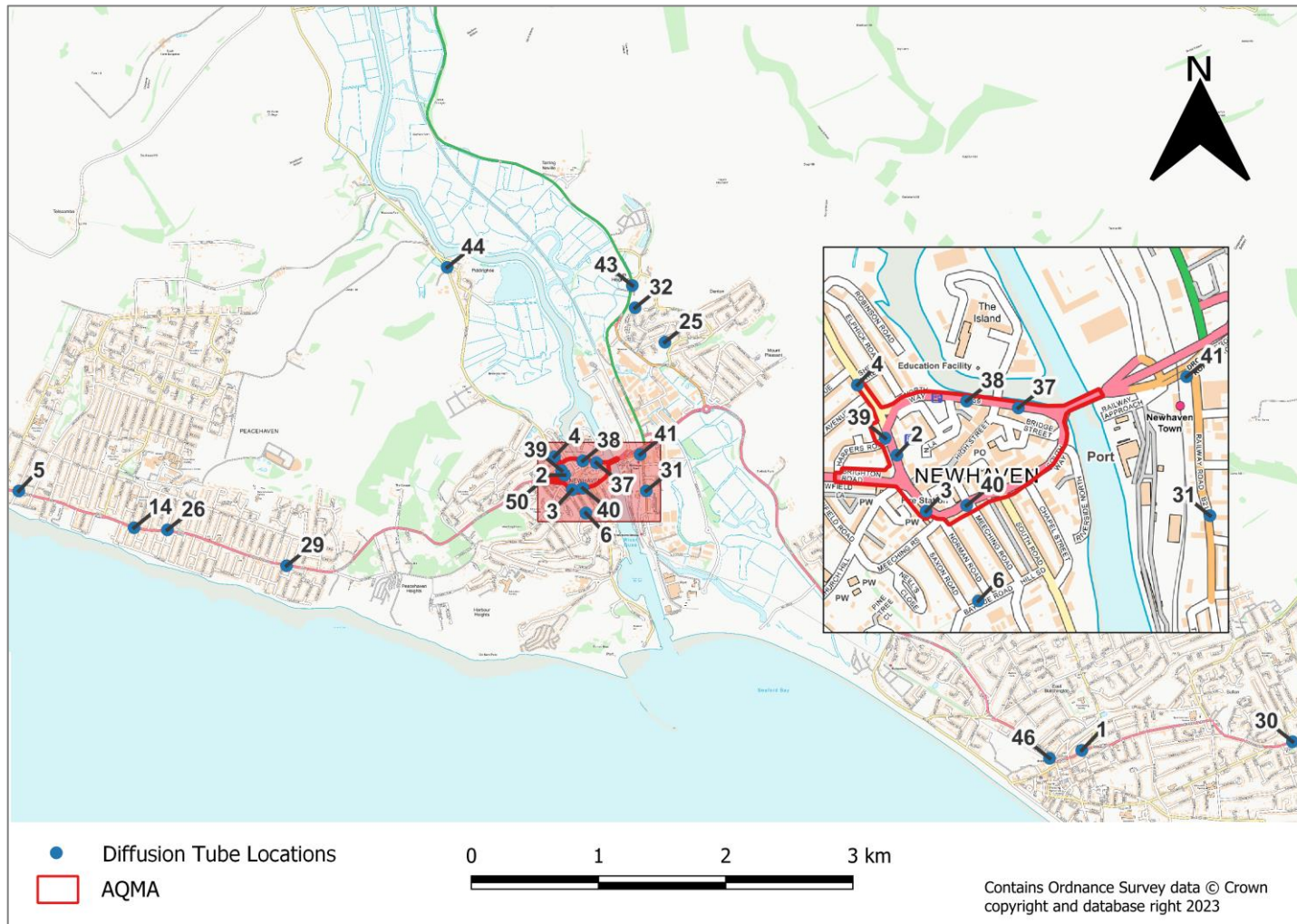
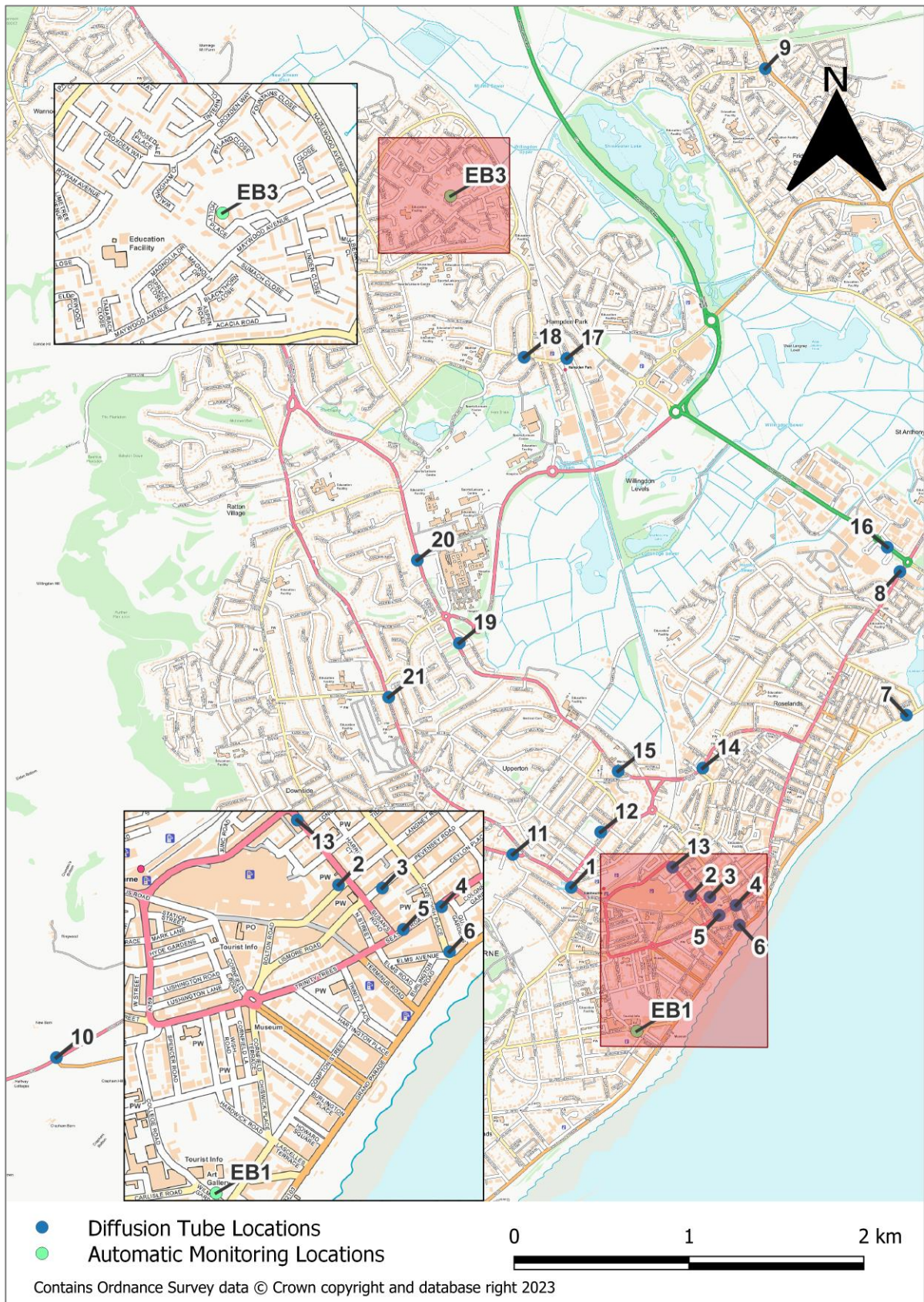


Figure D.3 – Map of Monitoring Site in EBC



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective: Concentration	Air Quality Objective: Measured as
Nitrogen Dioxide (NO ₂)	200µg/m ³ not to be exceeded more than 18 times a year	1-hour mean
Nitrogen Dioxide (NO ₂)	40µg/m ³	Annual mean
Particulate Matter (PM ₁₀)	50µg/m ³ , not to be exceeded more than 35 times a year	24-hour mean
Particulate Matter (PM ₁₀)	40µg/m ³	Annual mean
Sulphur Dioxide (SO ₂)	350µg/m ³ , not to be exceeded more than 24 times a year	1-hour mean
Sulphur Dioxide (SO ₂)	125µg/m ³ , not to be exceeded more than 3 times a year	24-hour mean
Sulphur Dioxide (SO ₂)	266µg/m ³ , not to be exceeded more than 35 times a year	15-minute mean
Ozone (O ₃)	100µg/m ³ , not to be exceeded more than 10 times a year	24-hour mean

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
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 National Highways
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO ₂	Sulphur Dioxide
LDC	Lewes District Council
EBC	Eastbourne Borough Council
NH	National Highways
ESCC	East Sussex County Council
LTC	Lewes Town Council
WDC	Wealden District Council
ETCIS	Eastbourne Town Centre Improvement Scheme

References

- Local Air Quality Management Technical Guidance LAQM.TG22. August 2022. 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.PG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Lewes District Council 2019 Annual Status Report.
- Eastbourne Borough Council 2019 Annual Status Report.
- Lewes District Council 2020 Annual Status Report.
- Eastbourne Borough Council 2020 Annual Status Report.
- Lewes District Council and Eastbourne Borough Council 2022 Annual Status Report.
- National Diffusion Tube Bias Adjustment Factor Spreadsheet, published May 2023.
- Diffusion Tube Data Processing Tool version 3.0, February 2023, Defra.