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2025 Annual Status Report

June 2025



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2025 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: June 2025

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Local Responsibilities and Commitment

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Executive Summary: Air Quality in Our Area

Air Quality in South Holland District Council

Breathing in polluted air affects our health and costs the NHS and our society billions of pounds each year. Air pollution is recognised as a contributing factor in the onset of heart disease and cancer and can cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in hospital admissions and mortality.

Air pollution particularly affects the most vulnerable in society, children, the elderly, and those with existing heart and lung conditions. Low-income communities are also disproportionately impacted by poor air quality, exacerbating health and social inequalities.

Table ES 1 provides a brief explanation of the key pollutants relevant to Local Air Quality Management and the kind of activities they might arise from.

Table ES 1 - Description of Key Pollutants

Pollutant	Description
Nitrogen Dioxide (NO_2)	Nitrogen dioxide is a gas which is generally emitted from high-temperature combustion processes such as road transport or energy generation.
Sulphur Dioxide (SO_2)	Sulphur dioxide is a corrosive gas which is predominantly produced from the combustion of coal or crude oil.
Particulate Matter (PM_{10} and $PM_{2.5}$)	Particulate matter is everything in the air that is not a gas. Particles can come from natural sources such as pollen, as well as human made sources such as smoke from fires, emissions from industry and dust from tyres and brakes as well as agriculture and construction. PM_{10} refers to particles under 10 micrometres. Fine particulate matter or $PM_{2.5}$ are particles under 2.5 micrometres.

The main source of air pollution in South Holland District Council is road traffic emissions from major roads, notably the A16, A17 and A151, which connect South Holland with North Lincolnshire, the Humber estuary, Southwest Lincolnshire and Norfolk. There are currently no Air Quality Management Areas (AQMAs) declared in South Holland.

South Holland District Council's monitoring network comprises of two automatic analysers and 15 non-automatic (passive) diffusion tube samplers.

During 2024, all diffusion tube monitoring locations continued to report annual NO_2 concentrations well below the NO_2 Air quality objective (40µg/m^3), with an average decrease of 1.0µg/m^3 when compared to 2023 data.

Annual NO_2 concentrations at both continuous monitoring sites were below 10µg/m^3, and neither continuous monitor reported hourly NO_2 concentrations exceeding 200µg/m^3. As per LAQM.TG(22), an annual mean NO_2 concentration greater than 60µg/m^3 can be used as a proxy to indicate whether there is an exceedance of the NO_2 1-hour mean AQS objective (no more than 18 hourly mean concentrations in exceedance of 200µg/m^3). It is therefore assumed that there have been no exceedances of the 1-hour mean objective at any monitoring site.

PM_{10} is monitored at both automatic sites, which in 2024 continued to report annual means well below the annual PM_{10} air quality objective (40µg/m^3). Compared with 2023 data, concentrations at Site CM1 (Spalding Monkhouse School) were decreased by 1.0µg/m^3, while those at CM2 (Westmere School) were slightly increased by 0.4µg/m^3.

Site CM2 reported one exceedance of 24-hour objective value of 50µg/m^3. However, as the objective permits up to 35 exceedances per year, both sites are therefore compliant with the 24-hour objective.

Annual average $PM_{2.5}$ concentrations were estimated by applying a national background factor to the PM_{10} concentrations. Estimated $PM_{2.5}$ annual concentrations were 5.4µg/m^3 at CM1 and 9.3µg/m^3 at site CM2, which are both well below the target value of 20µg/m^3.

Ozone is monitored at CM2 only. In 2024, the national air quality objective (maximum 8-hour daily mean < 100µg/m^3) was exceeded on 6 days. As 10 daily exceedances are permitted, the site was compliant in 2024.

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.

During 2024, South Holland District Council have progressed the following measures:

- **Devise a communication plan to educate the public on the importance of looking after our air quality, and the potential health risks associated with poor air quality** – The Council worked with the communications team on social media campaigns to support Clean Air Day and Clean Air Night, as a way of raising public awareness.

Conclusions and Priorities

The priorities for South Holland District Council in addressing and managing air quality within their local areas in the coming year includes:

- **Review of the communication plan** – Whilst there was some engagement, the responses tended to be quite negative. The Council will therefore investigate new approaches for better public engagement during 2025.
- **Continue the roll out of green waste service and discourage the use of bonfires** – The Council is planning to expand the Garden Waste Collection service across the entire district and the Waste Services team is currently undertaking a comprehensive route review to help design new collection rounds that can accommodate future demand.
- **Maintain a program of Environmental Permit inspections** – A program of inspections was first produced in 2022, and the Council will continue to implement this over the coming year.

How to get Involved

South Holland District Council continues to promote a variety of actions that can be undertaken by everyone to help keep air pollution low, and protect their health when levels rise:

- Don’t light a bonfire when pollution levels are high.

- Try to use your car less often – Walk, cycle, or use public transport (cycling and walking are healthier for both the environment and you.
- Ask your employer, school, or college about developing a green travel plan.
- Do not drive your car when there are warnings of high air pollution. You will normally receive pollution warnings on your local regional news and weather forecast.

South Holland's air quality webpages provide further information and guidance on how to get involved. The South Holland automatic air quality monitoring data is available to view and download on Air Quality England (AQE). Further information on air quality issues and how you can help can also be found at the Clean Air Lincolnshire Project.

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1 Local Air Quality Management

This report provides an overview of air quality in South Holland District Council during 2024. 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 South Holland District 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.

South Holland District Council currently does not have any declared AQMAs. A local Air Quality Strategy is under development to prevent and reduce polluting activities.

2.2 Progress and Impact of Measures to address Air Quality in South Holland District 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. Comments from previous ASR appraisals have been included and responded to. This is welcomed and encouraged for future reports.

   Comments provided below.

2. The Council include some discussion on $PM_{2.5}$ in the district, despite not monitoring this pollutant, which is welcomed. The PHOF D01 indicator is a useful addition.

   As well as the inclusion of the PHOF D01 indicator (2023), 2024 $PM_{2.5}$ concentrations have been estimated via application of a national background factor to PM_{10} data. Calculations and results are provided in Section 3.2.3.

3. SHDC has included thorough discussion of trends. This is level of detail is encouraged for future reports.

   Trends have again been discussed this year.

4. Although not a requirement, SHDC should aim to get future ASRs signed off by the Director of Public Health.

   The 2024 ASR was sent to the Director of Public Health for Lincolnshire County Council post-submission, and comments received have been incorporated into this year's report. This ASR has been signed off by the Director of Public Health for Lincolnshire County Council. Comments received are presented in Appendix F.

5. The Council has included good quality graphs which aid the discussion of trends in the district. This is commended.

6. The Council has robust QA/QC procedure and have included all the relevant information and calculations in the report.

7. SHDC have included a statement that the Defra diffusion tube calendar has been followed when deploying diffusion tubes throughout the year.

8. The Council has identified a number of planning applications that may impact air quality in the district. This commended and a useful inclusion in the report.

   This list has been updated and included in this year's report.

9. Overall, the report is clear, detailed and satisfies the appropriate criteria. The Council should continue their good work into 2025.

South Holland District Council has taken forward a number of direct measures during the current reporting year of 2024 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.1. Three measures are included within Table 2.1, with the type of measure and the progress South Holland District Council have made during the reporting year of 2024 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.1.

Key areas of progress are:

- **Devise a communication plan to educate the public on the importance of looking after our air quality, and the potential health risks associated with poor air quality** – The Council worked with the comms team on social media campaigns to support Clean Air Day and Clean Air Night, as a way of raising public awareness. Whilst there was some engagement, the responses tend to be quite negative. One of the Council's priorities for the coming year will therefore be to look into new approaches for improved public engagement.

In addition to the above, South Holland District Council's priorities for the coming year are:

- **Continue the roll out of green waste service and discourage the use of bonfires** – The green waste service was first implemented in 2022 and has since been ongoing. In 2024, 2565 new garden waste subscriptions were taken on, resulting in 5135.88 tonnes of green waste being collected The Council is planning to expand the Garden Waste Collection service across the entire district. The Waste Services team is currently undertaking a comprehensive route review to help design new collection rounds that can accommodate future demand.
- **Maintain a program of Environmental Permit inspections** – A program of inspections was first produced in 2022, and the Council will continue to implement this over the coming year.

Whilst Defra sets out national air quality objectives, the World Health Organisation (WHO) does not consider any level of air pollution safe for humans. The Council's position is

therefore that whilst there are no indications that national air quality objectives are being exceeded, efforts to reduce air pollution to a minimum will continue.

The Council support the Clean Air Lincolnshire Project, which is funded via the Defra Air Quality Grant Scheme. The project is a partnership involving all eight Lincolnshire councils, eight local schools and two businesses specialising in air quality monitoring and website design respectively (Clarity and Root Studio). The partnership's aim is to produce a public awareness campaign and to use air quality monitoring equipment in schools to educate students, staff and parents on the causes of air pollution and how we can take action to reduce air pollution around our schools.

South Holland District Council continues to prioritise promoting public awareness of air quality issues in the community as a key measure. The Council supported the first ever Clean Air Night in January 2024 and will continue to engage with similar schemes in future. Through this engagement, the Council hopes to raise public awareness of polluting activities and how these can be minimised, for example via discouraging the use of bonfires.

Table 2.1 – Progress on Measures to Improve Air Quality

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	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	Continue the roll out of green waste service and discourage the use of bonfires	Public Information	Other	N/A	Ongoing	South Holland District Council	Subscription	Fully Funded	<10k	Implementation	Reduced emissions from outdoor burning	Sign up rate, measured, tonnage green waste collected and formal actions on waste related burning	2565 new garden waste subscriptions were taken on in 2024, resulting in 5135.88 tonnes of green waste being collected, an increase of 4.87% on the previous year.	In 2025 Waste Services plan to re-route the garden waste service so that it can be extended and offered district wide, and as such it may be necessary to pause new subscriptions whilst this work is undertaken.
2	Devise a communication plan to educate the public on the importance of looking after our air quality, and the potential health risks associated with poor air quality	Public Information	Via the Internet	N/A	Ongoing	South Holland District Council / South & East Lincolnshire Councils Partnership	N/A	Not Funded	<£10k	Planning	Increased public awareness leading to lower emissions from bonfires, wood burning stoves and vehicles	-	We have worked with the comms team on social media campaigns to support clean air day and clean air night, as a way of raising public awareness. Whilst there is some engagement, the responses tend to be quite negative and so a new approach may be necessary which we will explore in 2025.	Low public engagement to date
3	Maintain a program of Environmental Permit inspections	Environmental Permits	Other	N/A	Ongoing	South Holland District Council	Permit fees & general fund	Fully Funded	£10k - £50k	Implementation	Ensure operators use Best Available Techniques (BAT)	Number of permit inspections undertaken	Since 2022 a program of inspections has been produced and is being implemented. In 2024 17 installations were inspected and advice given where necessary. No non-compliance notice under Environmental Permitting (England and Wales) Regulations 2016 Regulation 38(2) were served.	Change in staffing roles meant timelines were revised, and a focus on maintaining higher risk inspection programs was implemented in the last 3 months of 2024.

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

As detailed in Policy Guidance LAQM.PG22 (Chapter 8) and the Air Quality Strategy[1], local authorities are expected to work towards reducing emissions and/or concentrations of fine particulate matter ($PM_{2.5}$)). There is clear evidence that $PM_{2.5}$ (particulate matter smaller 2.5 micrometres) has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

Whilst the main source of air pollution in South Holland District Council is road traffic emissions from major roads, agri-food industries, particularly intense farming, are a known source of $PM_{2.5}$. Given that over 50% of jobs in South Holland are directly linked to the agri-food value chain, the Council recognises the potential impacts of this and is considering further research for inclusion in their Air Quality Strategy.

The Defra 2024 background maps for South Holland District Council (2021 reference year)[2] show that all background concentrations of $PM_{2.5}$ are far below the annual mean target of 20µg/m^3 for $PM_{2.5}$. The 2024 average $PM_{2.5}$ background concentration for South Holland District Council was 5.93µg/m^3. The highest background concentration was estimated to be 7.16µg/m^3 within the 1 x 1km grid square with the centroid grid reference of 523500, 322500. This grid square is located in Spalding; it is a largely residential area and encompasses part of the A151.

The background maps also provide a breakdown of sources. For the highest background concentration grid square, the majority of the estimated $PM_{2.5}$ concentration (4.05µg/m^3) is attributed to secondary $PM_{2.5}$ formation, where $PM_{2.5}$ is formed from the chemical reactions of other gaseous atmospheric pollutants such as sulphur dioxide (SO_2) and nitrogen oxides (NO_x, NO and NO_2). The background concentrations attributed to local domestic sources was also highest at this location, indicating that domestic solid fuel burning may be contributing to increased $PM_{2.5}$ concentrations, particularly in residential areas.

[1] Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

[2] Defra Background Mapping data for local authorities (2021-based), available online at https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2021

The Public Health Outcomes Framework data tool[3] compiled by Public Heath England quantifies the mortality burden of $PM_{2.5}$ within England on a county and local authority scale. The 2023 fraction of mortality attributable to particle air pollution (indicator D01) is 5.3% in South Holland. In both areas, this is lower than the average for the East Midlands region (5.6%), but slightly higher than the England average (5.2%). The 2023 estimates of the fraction of mortality attributable to $PM_{2.5}$ pollution range from 3.3% in the Isles of Scilly to 7.4% in the City of London.

[3] Public Health Outcomes Framework, Public Health England. data tool available online at https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/3/gid/1000043/pat/6/ati/501/are/E07000140/iid/93861/age/230/sex/4/cat/-1/ctp/-1/yrr/1/cid/4/tbm/1/page-options/car-ao-0_car-do-0

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

This section sets out the monitoring undertaken within 2024 by South Holland District Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2020 and 2024 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

South Holland District Council undertook automatic (continuous) monitoring at two sites during 2024. Table A.1 in Appendix A shows the details of the automatic monitoring sites.

The Air Quality in England page presents automatic monitoring results for South Holland District Council.

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

3.1.2 Non-Automatic Monitoring Sites

South Holland District Council undertook non- automatic (i.e. passive) monitoring of NO_2 at 15 sites during 2024.

Table A.2Table A.2 in Appendix A presents the details of the non-automatic sites.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on Quality Assurance/Quality Control (QA/QC) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g. annualisation and/or distance correction), are included in Appendix C.

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 (NO_2)

Table A.3 and Table A.4 in Appendix A compare the ratified and adjusted monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40µg/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, the full 2024 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. No results are provided for March as the diffusion tubes were lost during transit on their return to the laboratory.

Figure A.1 and Figure A.2 in Appendix A compare the ratified continuous monitored NO_2 hourly mean concentrations for the past five years with the air quality objective of 200µg/m^3, not to be exceeded more than 18 times per year.

During 2024, all diffusion tube monitoring locations continued to report annual NO_2 concentrations well below the NO_2 Air quality objective (40µg/m^3). The highest recorded concentration was 26.3µg/m^3 at the triplicate site SH2a, SH2b and SH2c, which routinely reports the highest annual concentrations. The site is located on Winsover Road in between a set of traffic lights and a level crossing, so the regular slowing and stopping of

traffic is likely responsible for the higher concentrations at this location. Concentrations have remained below 10% of the air quality objective (36µg/m^3) for the past 5 years and from 2023 to 2024, the annual concentration decreased by 3.8µg/m^3.

From 2023 to 2024, concentrations decreased by 1.0µg/m^3 on average, with all sites reporting lower concentrations except site SH18, which reported a small increase of 0.3µg/m^3. When compared to 2020 and 2021, years when COVID-19 was thought to be lowering concentrations due the impact of lockdown restrictions, 2024 concentrations across all diffusion tube sites decreased on average by 0.75µg/m^3 and 1.7µg/m^3 respectively.

Annual concentrations at both continuous monitoring sites were below 10µg/m^3, and neither continuous monitor reported hourly NO_2 concentrations exceeding 200µg/m^3. Additionally, as per LAQM.TG(22), an annual mean NO_2 concentration greater than 60µg/m^3 can be used as a proxy to indicate whether there is an exceedance of the NO_2 1-hour mean air quality objective (no more than 18 hourly mean concentrations in exceedance of 200µg/m^3). It is therefore assumed that there have been no exceedances of the 1-hour mean objective of 200µg/m^3 at any non-automatic monitoring sites.

3.2.2 Particulate Matter (PM_{10})

Table A.6 in Appendix A compares the ratified and adjusted monitored PM_{10} annual mean concentrations for the past five years with the air quality objective of 40µg/m^3.

Table A.7 in Appendix A compares the ratified continuous monitored PM_{10} daily mean concentrations for the past five years with the air quality objective of 50µg/m^3, not to be exceeded more than 35 times per year.

Compared with 2023 data, concentrations at Site CM1 (Spalding Monkhouse School) were decreased by 1.0µg/m^3, while those at CM2 (Westmere School) were slightly increased by 0.4µg/m^3. Both sites however continue to report annual means well below the annual PM_{10} air quality objective (40µg/m^3).

All 24-hour concentrations at site CM1 were below 50µg/m^3. Site CM2 reported a 24-hour concentration greater than 50µg/m^3 on one occasion in 2024 (6th September), however as the objective permits up to 35 exceedances of the 50µg/m^3 24-hour air quality objective, both sites are also compliant with the 24-hour objective.

3.2.3 Particulate Matter ($PM_{2.5}$)

There is currently no monitoring of $PM_{2.5}$ within South Holland District Council. However, in accordance with LAQM.TG(22), $PM_{2.5}$ concentrations can be estimated from monitored PM_{10} concentrations using either a local PM_{10} and $PM_{2.5}$ monitoring PM_{coarse} split (the fraction of PM between 10µm and 2.5µm, i.e. PM_{10} minus $PM_{2.5}$), or a nationally derived factor[4].

The national factor for PM_{coarse} split is 4.5 for background sites and 6.0 for roadside sites in 2024. As there is no local monitoring for $PM_{2.5}$, the nationally derived background factor has been applied to the PM_{10} concentrations to provide an estimate of $PM_{2.5}$ concentrations at each site.

CM1

2024 PM_{10} Annual Mean: 9.9µg/m^3

Estimated 2024 $PM_{2.5}$ Annual Mean = 9.9 – 4.5 = **5.4µg/m^3**

CM2

2024 PM_{10} Annual Mean: 13.8µg/m^3

Estimated 2024 $PM_{2.5}$ Annual Mean = 13.8 – 4.5 = **9.3µg/m^3**

The maximum estimated $PM_{2.5}$ concentration in 2024 was therefore 9.3µg/m^3, which is well below the $PM_{2.5}$ annual mean target (20µg/m^3).

3.2.4 Ozone (O_3)

Table A.8 in Appendix A compares the ratified continuous monitored O_3 maximum daily 8-hour running mean concentrations for the past five years with the national air quality objective of 100µg/m^3, not to be exceeded on more than 10 days per year.

South Holland monitors O_3 at one site, Westmere School. Please note that data presented in previous ASRs was not based on a rolling mean. Values from previous years have been amended this year and therefore some differ from those reported in the 2023 ASR.

The maximum daily 8-hour running mean exceeded 100µg/m^3 on six days in 2024, meaning that the Westmere School site was compliant with the national air quality

[4] Defra. Estimating $PM_{2.5}$ from PM_{10} Measurements. Available at: https://laqm.defra.gov.uk/air-quality/air-quality-assessment/estimating-pm2-5-from-pm10-measurements/

objective in 2024. Over the past five years, the site has exceeded the annual objective on three occasions.

Ground-level (tropospheric) O_3 is formed from chemical reactions of NO_x and Volatile Organic Compounds (VOCs) in the presence of sunlight. It is generally higher in warmer months and in rural areas where levels of Nitric Oxide (NO) are lower. While O_3 is not directly emitted to air, methane (CH_4) is a key precursor to its formation at ground-level.[5] Agriculture is a principal emission source for CH_4, so it is possible that farming has contributed to local O_3 concentrations over the last five years.

[5] European Environment Agency, Methane, climate change and air quality in Europe: exploring the connections. Available at: https://www.eea.europa.eu/en/analysis/publications/methane-climate-change-and-air-quality-in-europe-exploring-the-connections

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA?	Which AQMA? (1)	Monitoring Technique	Distance to Relevant Exposure (m) (2)	Distance to kerb of nearest road (m) (1)	Inlet Height (m)
CM1	Spalding Monkhouse School	Urban Background	523174	322455	NO_2, PM_{10}	No	N/A	Chemiluminescence, TEOM corrected by VCM	1.0	25.0	3.0
CM2	Westmere School	Urban Background	547269	321718	NO_2, PM_{10}, Ozone	No	N/A	Chemiluminescence, UV Absorption, TEOM corrected by VCM	14.0	190.0	3.0

Notes:

(1) N/A if not applicable

(2) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

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

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) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
SH1	21 Millfield	Urban Background	524388	310520	NO_2	No	6.8	0.3	No	1.9
SH2a,SH2b,SH2c	Winsover Road	Urban Background	524292	322587	NO_2	No	0.0	1.3	No	2.6
SH3	Woodfield Close	Urban Background	525694	321999	NO_2	No	7.0	1.7	No	2.1
SH4	46 The Hollies	Urban Background	536523	325078	NO_2	No	8.4	1.4	No	2.2
SH5	Station Road	Roadside	526585	328726	NO_2	No	24.9	1.1	No	2.1
SH6	Boston Road A17	Roadside	535525	325589	NO_2	No	4.0	1.8	No	2.1
SH7	Field End A17	Roadside	541013	324393	NO_2	No	9.0	2.1	No	2.1
SH8a,SH8b,SH8c	Westmere	Urban Background	547264	321709	NO_2	No	69.4	61.2	Yes	N/A
SH11	Donington A52	Roadside	520932	336052	NO_2	No	49.0	1.5	No	2.1
SH13	Pinchbeck Road	Kerbside	524595	323793	NO_2	No	20.7	2.0	No	2.1
SH19	Whaplode	Roadside	532684	324311	NO_2	No	7.0	4.0	No	1.9
SH15	Pinchbeck	Roadside	524182	325804	NO_2	No	12.0	1.7	No	2.0
SH16	Gosberton	Roadside	524203	331510	NO_2	No	7.0	1.9	No	2.2
SH17	High Street	Roadside	524892	322571	NO_2	No	0.0	0.9	No	1.9
SH18	BP Garage	Roadside	524191	321328	NO_2	No	1.5	3.9	No	2.1

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 – Annual Mean NO_2 Monitoring Results: Automatic Monitoring (µg/m^3)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
CM1	523174	322455	Urban Background	98.2	97.8	8.5	8.7	8.9	8.2	7.4
CM2	547269	321718	Urban Background	95.4	95.4	7.7	7.4	7.8	6.8	6.2

☐ **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.**

☐ **Where exceedances of the NO_2 annual mean objective occur at locations not representative of relevant exposure, the fall-off with distance concentration has been calculated and reported concentration provided in brackets for 2024.**

Notes:

The annual mean concentrations are presented as µg/m^3.

Exceedances of the NO_2 annual mean objective of 40µg/m^3 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.4 – Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring (µg/m^3)

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 2024 (%) [2]	2020	2021	2022	2023	2024
SH1	524388	310520	Urban Background	92.5	92.5	8.9	8.8	9.7	8.3	7.3
SH2a,SH2b,SH2c	524292	322587	Urban Background	92.5	92.5	27.6	29.8	32.2	30.1	26.3
SH3	525694	321999	Urban Background	84.9	84.9	9.4	9.7	10.7	9.0	8.5
SH4	536523	325078	Urban Background	92.5	92.5	8.9	8.7	9.6	8.2	7.6
SH5	526585	328726	Roadside	92.5	92.5	11.0	11.6	12.1	11.1	10.5
SH6	535525	325589	Roadside	92.5	92.5	20.9	23.8	27.6	24.3	22.6
SH7	541013	324393	Roadside	92.5	92.5	20.0	19.5	21.6	18.3	17.2
SH8a,SH8b,SH8c	547264	321709	Urban Background	92.5	92.5	8.1	7.3	7.9	6.8	6.2
SH11	520932	336052	Roadside	92.5	92.5	12.7	14.3	14.4	13.6	11.7
SH13	524595	323793	Kerbside	92.5	92.5	21.9	24.0	25.9	23.8	23.5
SH19	532684	324311	Roadside	92.5	92.5	13.4	14.5	14.5	13.1	12.6
SH15	524182	325804	Roadside	92.5	92.5	17.6	19.9	19.6	17.5	17.4
SH16	524203	331510	Roadside	67.9	67.9	12.1	13.4	13.6	12.3	10.3
SH17	524892	322571	Roadside	92.5	92.5	18.7	19.0	22.2	19.6	18.4
SH18	524191	321328	Roadside	92.5	92.5	16.7	17.3	18.7	16.3	16.6

☐ **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 µg/m^3.

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

NO_2 annual means exceeding 60µg/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 – Non-Automatic Monitoring: Crowland, Holbeach, Spalding and Surfleet Seas End

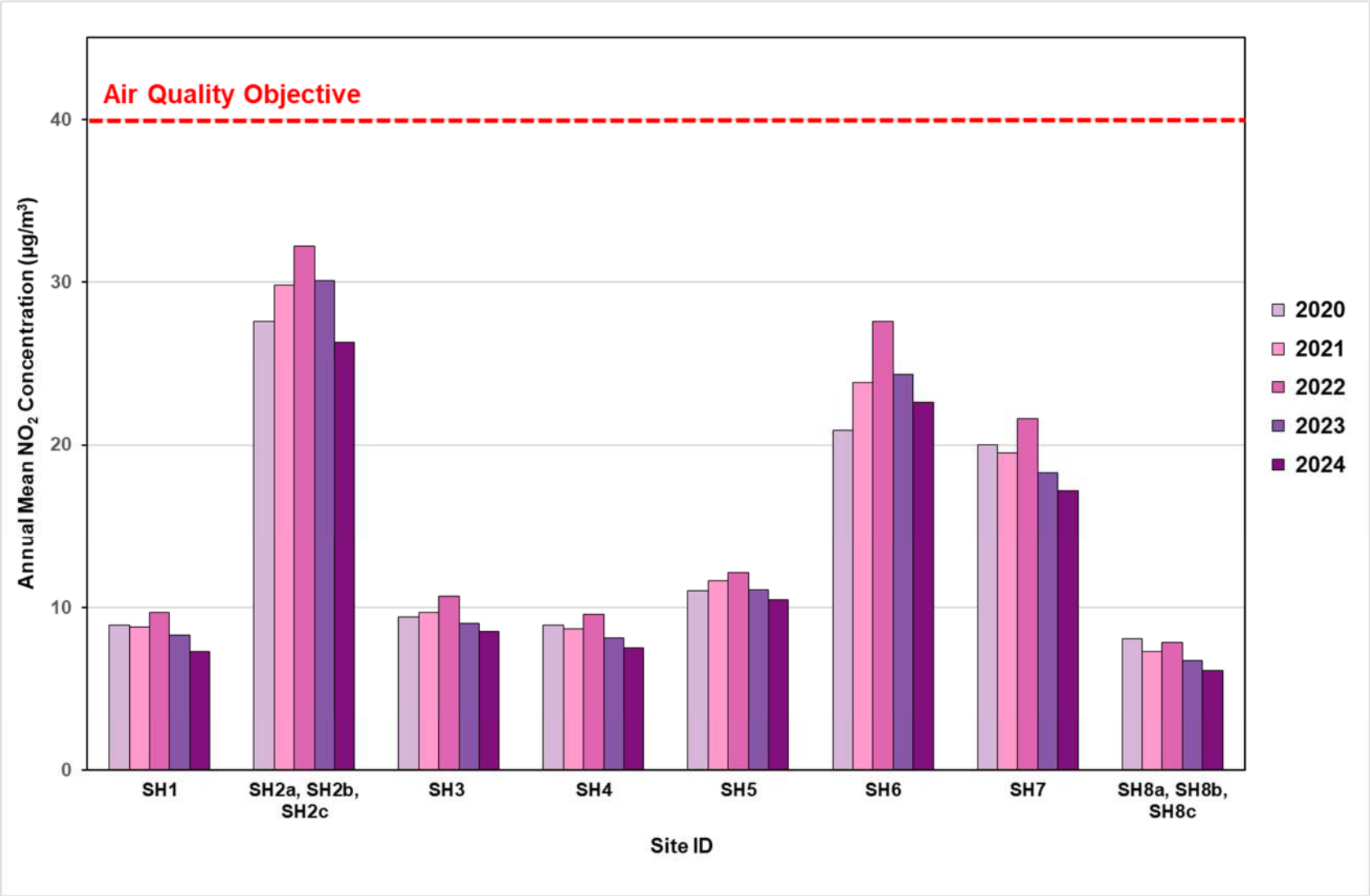


Figure A.2 – Trends in Annual Mean NO_2 Concentrations in Fareham Borough Council – Non-Automatic Monitoring, Donington, Gosberton, Pinchbeck, Spalding and Whaplode

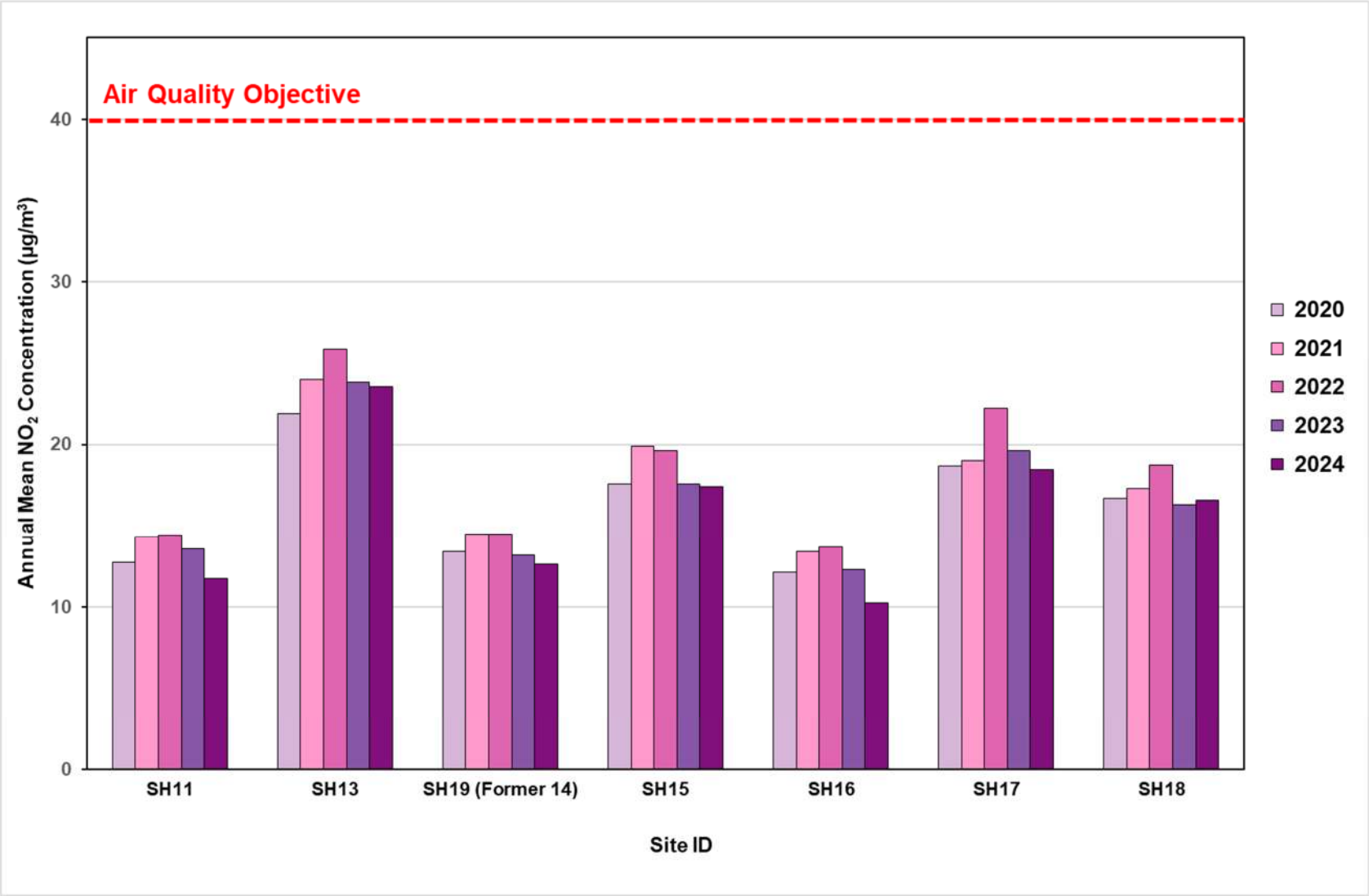


Table A.5 – 1-Hour Mean NO_2 Monitoring Results, Number of 1-Hour Means > 200µg/m^3

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
CM1	523174	322455	Urban Background	97.8	97.8	0	0	0	0	0
CM2	547269	321718	Urban Background	95.4	95.4	0	0	0	0	0

Notes:

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

Exceedances of the NO_2 1-hour mean objective (200µg/m^3 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.6 – Annual Mean PM_{10} Monitoring Results (µg/m^3)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
CM1	523174	322455	Urban Background	97.8	94.1	10.9	9.0	11.5	10.9	9.9
CM2	547269	321718	Urban Background	98.6	98.6	12.9	12.6	14.5	13.4	13.8

☐ **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/m^3.

Exceedances of the PM_{10} annual mean objective of 40µg/m^3 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.3 – Trends in Annual Mean PM_{10} Concentrations

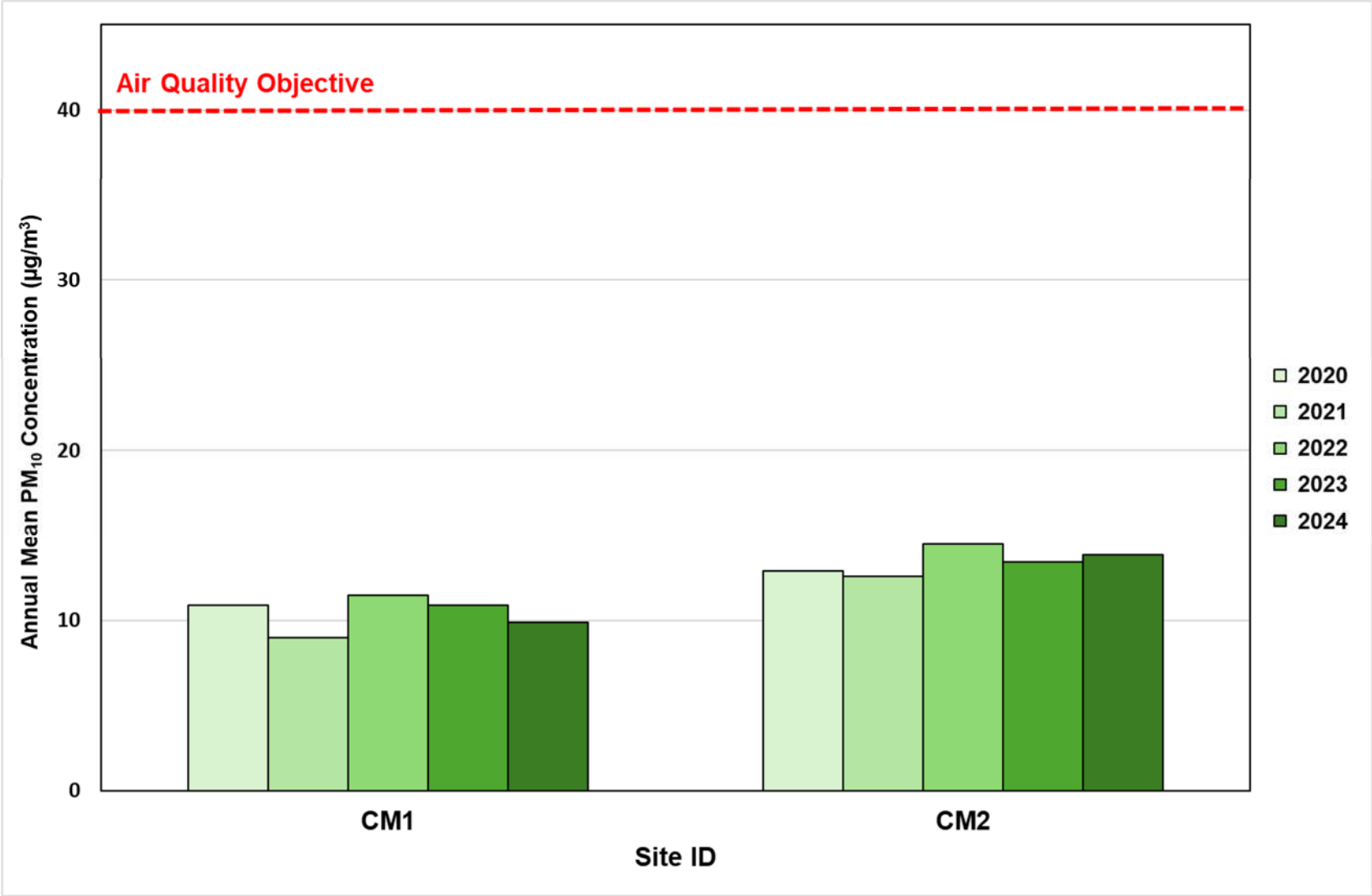


Table A.7 – 24-Hour Mean PM_{10} Monitoring Results, Number of PM_{10} 24-Hour Means > 50µg/m^3

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
CM1	523174	322455	Urban Background	94.1	94.1	0	0	0	0	0
CM2	547269	321718	Urban Background	98.6	98.6	0	0	0	0	1

Notes:

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

Exceedances of the PM_{10} 24-hour mean objective (50µg/m^3 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.8 – O_3 Monitoring Results, Number of Maximum Daily 8-hour Means > 100µg/m^3

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2020	2021	2022	2023	2024
CM2	547269	321718	Urban Background	91.0	91.0	**20***	7	**15***	**13***	6

*Data in previous reports was not based on a rolling 8-hour mean. This has been amended this year, so some values are different.

Notes:

(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 2024

Table B.1 – NO_2 2024 Diffusion Tube Results (µg/m^3)

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 (0.84)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
SH1	524388	310520	12.6	11.6		6.6	7.3	5.5	6.1	6.3	6.9	10.5	13.9	10.4	8.9	7.3	-	
SH2a	524292	322587	34.0	33.8		26.7	29.5	30.1	32.1	29.3	29.9	38.5	34.1	29.5	-	-	-	Triplicate Site with SH2a, SH2b and SH2c - Annual data provided for SH2c only
SH2b	524292	322587	36.2	32.6		26.2	28.9	30.4	31.9	26.3	31.0	38.1	37.8	31.0	-	-	-	Triplicate Site with SH2a, SH2b and SH2c - Annual data provided for SH2c only
SH2c	524292	322587	34.8	35.0		25.1	30.3	30.2	33.5	30.4	30.1	41.0	31.2	32.0	31.9	26.3	-	Triplicate Site with SH2a, SH2b and SH2c - Annual data provided for SH2c only
SH3	525694	321999	14.8	12.5		7.5	6.8	6.2		7.4	8.5	10.7	16.5	12.4	10.3	8.5	-	
SH4	536523	325078	12.5	10.6		8.3	7.3	5.4	5.0	6.9	7.0	10.1	16.1	11.4	9.1	7.6	-	
SH5	526585	328726	16.0	14.1		12.5	10.0	11.1	9.6	11.8	12.1	14.3	15.2	13.1	12.7	10.5	-	
SH6	535525	325589	30.4	24.9		29.7	29.3	29.7	24.9	21.5	32.9	24.3	30.7	22.0	27.3	22.6	-	
SH7	541013	324393	19.1	22.7		15.4	19.3	20.0	22.8	19.1	18.0	27.0	26.2	19.3	20.8	17.2	-	
SH8a	547264	321709	11.5	11.0		5.8	5.0	4.3	5.2	5.6	5.5	10.3	11.2	9.1	-	-	-	Triplicate Site with SH8a, SH8b and SH8c - Annual data provided for SH8c only
SH8b	547264	321709	10.3	9.1		6.2	5.2	4.4	4.9	5.0	5.4	9.5	10.0	9.8	-	-	-	Triplicate Site with SH8a, SH8b and SH8c - Annual data provided for SH8c only
SH8c	547264	321709	10.2	10.1		6.1	5.7	4.3	5.2	5.2	5.1	10.1	11.2	8.9	7.5	6.2	-	Triplicate Site with SH8a, SH8b and SH8c - Annual data provided for SH8c only
SH11	520932	336052	15.3	16.8		11.0	14.8	11.6	13.2	11.8	12.4	17.0	17.3	14.7	14.2	11.7	-	
SH13	524595	323793	32.8	33.5		26.3	22.2	24.6	30.5	29.1	24.2	29.6	33.6	26.8	28.5	23.5	-	
SH19	532684	324311	18.7	16.8		13.7	13.3	14.9	13.8	12.2	14.2	15.4	18.2	16.4	15.2	12.6	-	
SH15	524182	325804	24.2	23.2		17.7	19.7	16.5	22.5	23.4	18.1	15.2	30.0	21.3	21.1	17.4	-	
SH16	524203	331510		15.1		11.0	9.8	8.3		9.8	12.0		18.4	13.1	12.2	10.3	-	
SH17	524892	322571	26.4	28.0		17.7	19.9	18.7	21.1	19.9	17.3	26.6	27.7	22.1	22.3	18.4	-	
SH18	524191	321328	20.3	24.4		19.3	16.4	16.7	17.3	18.5	18.0	23.7	24.4	21.6	20.0	16.6	-	

☒ **All erroneous data has been removed from the NO_2 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.**

☒ **South Holland District Council confirm that all 2024 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.**

Notes:

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**.

See Appendix C for details on bias adjustment and annualisation.

*** No data for March was available as diffusion tubes were lost in the post on return to the laboratory.**

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

New or Changed Sources Identified Within South Holland District Council During 2024

Roundabout improvement works took place at the A16 Springfields roundabout in Spalding from November 2023 to November 2024 and at Pinchbeck roundabout from May 2024 to March 2025. Traffic disruption and changes to local traffic flows occurred during these periods.

A substantial environmental permit variation to add a second chamber to the South Lincolnshire Crematorium was issued in January 2024. This is likely to impact local air quality during both the construction and operation phases.

Additionally, the planning applications detailed below were accepted in 2024 and have been recognised by South Holland District Council as having the potential to impact local air quality.

List of Applications for PS2 Categories (Reference, Type, Category, Location, Date Accepted, Description)
H05-0326-24, S73A CONTINUATION, Major Sml Dwelling, 50 Fleet Road Fleet, 10-04-24, Residential Development of 25 Dwellings (Phase 2) - outline approval H05-0468-18 - with access via Phase 1 -approved under H05-0303-22. Modification of Condition 1 to allow amendments to previously approved plans.
H19-0329-24, FULL, Major Lrg Other, Land East of Guanock gate Road Sutton St Edmund,15-04-24, Temporary ground mounted solar photovoltaic (PV) farm with battery storage, substation and associated works.
H22-0349-24, FULL, Major Lrg Ind Storag, FLAMINGO FLOWERS LTDSTONE GATE, 26-04-24, 3 sunken bays and relocation of existing offices and plant room, plus new plants holding store (retrospective).
H04-0529-24, FULL, Major Lrg Other, Cowley Academy School Lane, 18-06-24,

Installation of new fence to western boundary and replacement of existing fencing - re-submission of H04-0568-23.
H12-0168-24, FULL, Major Sml Other, The Smallholding Green Dyke, 15-03-24, Agricultural Preparation Building – Retrospective.
H03-0876-24, FULL, Major Sml Other, Agricultural Land Opposite Vine House Farm A1175 Main Road, 11-11-24, Change of use of land for use as dog exercise paddock to include associated gravel car parking area, fencing and field shelter.
H09-1133-23, FULL Major Sml Other, THREE CHESTNUTS FEN ROAD, 03-01-24, Change of use of children's care home (Use Class C2 Residential Institutions) to an independent school - Learning and Non-Residential Institution (Use Class F1 (A) Provision of Education).
H21-1136-23, FULL Major Sml Other, Land north of 29 Station Road Tydd Gote, 26-01-24, Proposed holiday lodges and yoga building.
H08-0004-24, S73A CONTINUATION, Major Sml Office, S M CBELCHMIRE LANE, 27-02-24, Erection of 3 manufacturing units and part change of use from agricultural land to light industrial (change of use to accommodate Units 2 & 3) - approved under H08-1220-22. Modification of Condition 2 to allow amendments to previously approved plans and Condition 6 to accommodate bund.
H06-0436-24, OUTLINE, Major Sml Dwelling, Green Acres Park Roper's Gate, 21-06-24, Demolition of timber structured mobile homes/day rooms and outbuildings and erection of 24 semi/terraced bungalows.
H16-0437-24, FULL, Major Sml Other, ASHWOOD NURSING HOME43 SPALDING COMMON, 16-05-24, Erection of two storey rear extension to provide additional bedrooms, day space, storage, nurses station, assisted bathrooms and additional car parking spaces
H20-1007-24, FULL, Major Lrg Other, Land at Fendyke Farm Off Old Fendyke, 02-12-24, Construction and operation of a solar farm and battery energy storage system (BESS), vehicular access, internal access tracks, landscaping, boundary treatment, cabling and associated infrastructure.
H09-0030-24, S73A CONTINUATION, Major Sml Dwelling Land off Lancewood Road Fen Road, 15-01-24, Erection of 38 dwellings with associated roads and sewers - approved under H09-0784-21. Modification of Condition 2 to allow amendments to previously approved plans.

H14-0049-24, FULL, Major Sml Ind Storag, GLEN FARROW LIMITEDGLENDUM CLOSE, 17-01-24, Extension to existing unit for manufacturing facilities and new storage outbuilding including material changes to external facade of existing unit and internal changes.
H09-0287-24, S73A CONTINUATION, Major Sml Dwelling, Land off Damgate Holbeach 04-04-24, Residential Development - Erection of 188 Dwellings - approved under H09-0332-16. Modification of Condition 2 to allow amendments to previously approved plans.
H05-0190-24, FULL, Major Sml Ind Storag, H Z Logistics Ltd Washway Road 20-03-24, External Yard Lighting.
H11-0115-24, FULL, Major Sml Ind Storag, ADM AGRICULTURE LTDWINTERS LANE, 09-02-24, Proposed external fire escape stairs.
H11-0120-24, FULL, Major Sml Dwelling, Land off Little London Long Sutton, 12-03-24, Proposed residential development (123 dwellings) - previously approved under H11-0398-12.
H18-0448-24, SEC 73 MODIFICATION, Major Lrg Other, Gunthorpe Road Solar Farm Land south of Gunthorpe Road, 16-05-24, Installation of a solar farm and battery storage facility with associated infrastructure - approved under H18-1034-23. Modification of Condition 2 to allow amendments to previously approved plans.
H16-0462-24, FULL, Major Lrg Other, Castle Sports Complex Albion Street, 22-05-24, Demolition of existing swimming pool building following the construction of a two storey extension including basement area to existing Castle Sports Complex building to provide new and upgrade indoor leisure and health related facilities including two new swimming pools, plant area and changing rooms. Reconfiguration of existing building to provide new and upgraded sports facilities and physical activity facilities and related supporting services. Provision of a new 3G artificial turf pitch (ATP), an Informal Outdoor Games Area (IOGA), other outdoor play areas, an informal running trail/track, a health and well being garden and an outdoor splash pad relating to the new swimming pool. The provision of supporting infrastructure including additional car parking and landscaped areas.
H18-0463-24, FULL, Major Sml Dwelling, Bridge Hotel4 Bridge Road 29-05-24, Change of use from hotel Class C1 to residential Class C3 including the creating of 15 residential units
H23-0491-24, SEC 73 MODIFICATION, Major Sml Dwelling, Home Farm Millgate, 03-06-24, Erection of 19 holiday lodges, reception building, facility managers accommodation & maintenance shed, 2 fishing lakes and associated hard and soft landscaping - approved under H23-0471-23.

MODIFICATION, of wording of Condition 7, relating to the use of the cabins and MODIFICATION, of Condition 8 relating to the occupation of the managers accommodation.
H04-0537-24, FULL, Major Lrg Other, Thomas Cowley High School School Lane, 17-06-24, Re-surfacing of sports court and replace existing fencing.
H09-0003-24, FULL, Major Sml Other, Land adjacent Fensever Further Old Gate, 09-02-24, Proposed Outdoor Manege.
H03-0598-24, RESERVED MATTERS, Major Sml Dwelling, Home Farm Littleworth Drove, 26-07-24, Erection of 119 Dwellings and a village hall along with ancillary development including the construction of an attenuation pond - OUTLINE, approval H03-0161-17.
H06-0969-24, FULL, Major Sml Gypsy, GREEN ACRES PARKROPERS GATE, 05-12-24, Use of land to provide thirteen additional gypsy/traveller pitches with internal access road and landscaping.
H07-0967-24, FULL, Major Sml Other, North View Fishing Lakes North Road, 06-12-24, Stationing of 8 Lodges and 32 Static Caravans (Some to Replace Existing Touring Caravan Pitches Resulting in a Net Gain of 18 new Units) for Use as Tourism Accommodation.
H02-0397-24, FULL, Major Sml Other, 17 Barbers Drove North Crowland, 08-05-24, Proposed temporary site construction entrance.
H09-0687-24, FULL, Major Sml Other, Leadenhall Farm Holbeach St Marks, 16-08-24, Construction of an agricultural irrigation lagoon, replacement pump house and perimeter bunding.
H16-0871-24, FULL, Major Lrg Other, Land adj Pilgrim's Pride Limited Fulney Lane North, 24-10-24, Change of use of agricultural land and development for Solar array of up to 1.64 MWp and associated infrastructure including connection to Pilgrim's Pride Factory adjacent north.
H18-0603-24, S73A CONTINUATION, Major Lrg Other, Sutton Bridge Solar Farm Land to the South of Centenary Way, 23-07-24, Change of use from agricultural land to solar farm and construction and operation of a solar photovoltaic (PV) development with capacity of up to 49.9mw with associated infrastructure and landscaping - approved under H18-1126-20. Modification of Condition 10 relating to the Flood Risk Assessment.

H18-1077-24, FULL, Major Lrg Other, Sutton Bridge Solar Farm Land to the South of Centenary Way, 20-12-24, Construction of a Battery Energy Storage System (BESS) and associated infrastructure.
H14-0045-24, FULL, Major Sml Other, Rear of Egmond Glenside South, 25-01-24, Proposed change of use from agricultural land to paddock including stables & all weather menage for private equestrian use.
H13-0483-24, S73A CONTINUATION, Major Sml Dwelling, Land North Of: Roman Road Moulton Chapel, 30-05-24, Erection of 86 Dwellings and associated works - approved under H13-1215-18. Modification of Condition 2 to allow amendments to previously approved plans.
H16-0506-24, OUTLINE, Major Sml Dwelling, Castle Sports Complex Pinchbeck Road, 05-06-24, eplacement of existing swimming pool building with the erection of an extra care housing facility of up to 70 units together with related support infrastructure including substation, car parking and landscaping areas (All matters reserved for future approval).
H12-0581-24, SEC 73 MODIFICATION, Major Lrg Other, Monmouth Lane Lutton, 05-07-24, Proposed Change of Use of agricultural land to dog exercise area and landscaping - approved under H12-0577-22. Modification of Conditions 2, 3, 4 and 5 relating to time limit, fencing and dog waste bins, number of dogs and hours of operation.
H09-0554-24, FULL, Major Sml Dwelling, Land off Damgate Holbeach 21-06-24, Proposed Residential Development comprising 21 Dwellings and associated roads and footpaths.
H09-0572-24, SEC 73 MODIFICATION, Major Sml Other, THREE CHESTNUTS FEN ROAD 01-07-24, Change of use of children's care home (Use Class C2 Residential Institutions) to an independent school - Learning and Non-Residential Institution (Use Class F1 (A) Provision of Education) - approved under H09-1133-23. Modification of Condition 2 to allow amendments to previously approved plans.
H12-0310-24, FULL, Major Lrg Other, UNIVERSITY ACADEMY LONG SUTTON 84 LITTLE LONDON, 02-04-24, Demolition of existing school buildings and redevelopment to provide a new three storey building for educational purposes (Use Class F1), revised internal vehicular and pedestrian circulation routes (including creation of revised vehicular drop off / pick up areas for buses and cars), sports and informal recreational spaces, landscaping, drainage, parking areas (including temporary parking provision during the construction phase) and all associated works.
H14-0821-24, S73A CONTINUATION, Major Sml Ind Storag, Land adjacent to Neil Brown Engineering Ltd Benner Road, 30-09-24,

Erection of 11 industrial units (Use Classes E(g), B2 and B8) - Approved under H14-0221-21. Modification of Condition 2 to allow amendments to previously approved plans.
H13-0725-24, FULL, Major Sml Ind Storag PELOTON PRODUCE LTDWEST COB GATE, 23-08-24, New open fronted building for forklift storage and a new building for storage of packaging materials.
H16-1028-24, FULL, Major Sml Ind Storag, Clay Lake Spalding, 09-12-24, Use of site for the erection of industrial units
H02-0925-24, FULL, Major Sml Ind Storag, Land off Phoenix Lane Crowland, 12-11-24, Proposed industrial units (use class B2).
H20-0942-24, FULL, Major Lrg Other, The Paddocks Childersgate Lane, 04-12-24, Change of use of agricultural.

Additional Air Quality Works Undertaken by South Holland District Council During 2024

South Holland District Council did not complete any additional works during 2024.

QA/QC of Diffusion Tube Monitoring

South Holland District Council's diffusion tubes in 2024 were supplied and analysed by Gradko International Ltd., using the 20% Triethanolamine (TEA) in water preparation method. Gradko's laboratory is UKAS accredited, participating in the AIR-PT Scheme for NO_2 tube analysis and the Annual Field Inter-Comparison Exercise. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO_2 concentrations reported are of a high calibre. The lab follows the procedures set out in the Harmonisation Practical Guidance.

In the 2024 AIR NO_2 PT rounds, AIR-PT AR062 - AR066 (January - October 2024) Gradko scored 100%. The percentage score reflects the results deemed to be satisfactory based upon the z-score of < ±2. Additionally, the precision of the NO_2 diffusion tubes (20% TEA in Water) supplied by Gradko has been classified as 'good' for all 26 observations in 2024. This precision reflects the laboratory's performance and consistency in preparing and analysing the tubes, as well as the subsequent handling of the tubes in the field. Tubes are considered to have a "good" precision where the coefficient of variation of duplicate or

triplicate diffusion tubes for eight or more monitoring periods during a year is less than 20%. Further information on the precision summary results can be found on the LAQM website.

Diffusion Tube Annualisation

One site (SH16) required annualisation in 2024 due to annual data capture being between 25% and 75%. Data from three background sites within 50 miles of SH16 were obtained from UK Air. The annualisation summary is shown in Table C.1 below.

Table C.1 – Annualisation Summary (concentrations presented in µg/m^3)

Site ID	Annualisation Factor				Raw Data Annual Mean	Annualised Annual Mean
	Leicester University	Toft Newton	Wicken Fen	Average		
SH16	1.0008	1.0203	1.0367	1.0193	12.2	12.4

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2025 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.

South Holland District Council have applied a local bias adjustment factor of 0.83 to the 2024 monitoring data. A summary of bias adjustment factors used by South Holland District Council over the past five years is presented in Table C.2.

Table C.2 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	Local	N/A	0.83
2023	Local	N/A	0.89
2022	Local	N/A	0.94
2021	Local	N/A	0.79
2020	Local	N/A	0.80

Table C.3 – Local Bias Adjustment Calculation

	Local Bias Adjustment Input 1
Periods used to calculate bias	11
Bias Factor A	0.83 (0.78 - 0.88)
Bias Factor B	21% (14% - 28%)
Diffusion Tube Mean (µg/m^3)	7.5
Mean CV (Precision)	**5.3%**
Automatic Mean (µg/m^3) (for periods used to calculate bias)	6.2
Data Capture (for periods used to calculate bias)	95%
Overall Data Capture	**95%**
Adjusted Tube Mean (µg/m^3)	6 (6 - 7)
Overall Diffusion Tube Precision	**Good Overall Precision**
Overall Continuous Monitor Data Capture	**Good Overall Data Capture**

Notes:

A single local bias adjustment factor of 0.83 has been used to bias adjust the 2024 diffusion tube results.

NO_2 Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO_2 fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO_2 concentrations corrected for distance are presented in Table B.1.

No sites within South Holland District Council required fall-off with distance correction in 2024.

QA/QC of Automatic Monitoring

South Holland District Council contracts data management for their continuous analysers to Ricardo-AEA. The QA/QC procedures employed by Ricardo-AEA are equivalent to the UK Automatic Urban and Rural Network (AURN) procedures. All data have been ratified and TEOM data have been VCM corrected.

PM_{10} Monitoring Adjustment

The PM_{10} results have been corrected by Ricardo-AEA who undertake the data management for the two automatic continuous monitoring sites. TEOM data have been Volatile Correction Model (VCM) corrected.

Automatic Monitoring Annualisation

All automatic monitoring locations within South Holland 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.

NO_2 Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure has been estimated using the NO_2 fall-off with distance calculator available on the LAQM Support website.

No automatic NO_2 monitoring locations within South Holland District required distance correction during 2024.

Appendix D: Map(s) of Monitoring Locations and AQMAs

Figure D.1 – Map of Automatic and Non Automatic Monitoring Sites – Spalding and Pinchbeck

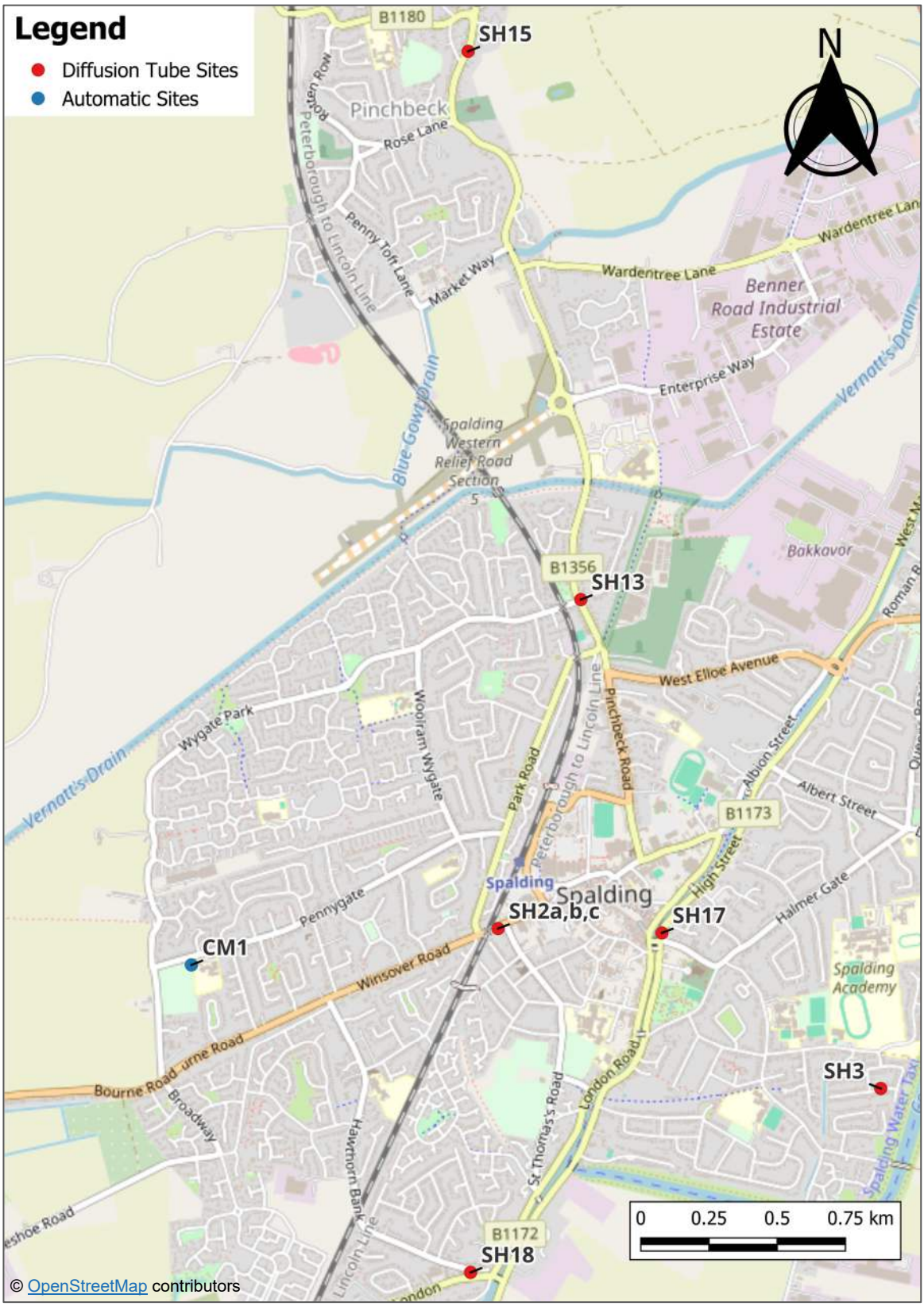


Figure D.2 – Map of Non Automatic Monitoring Sites – Donington, Gosberton and Surfleet

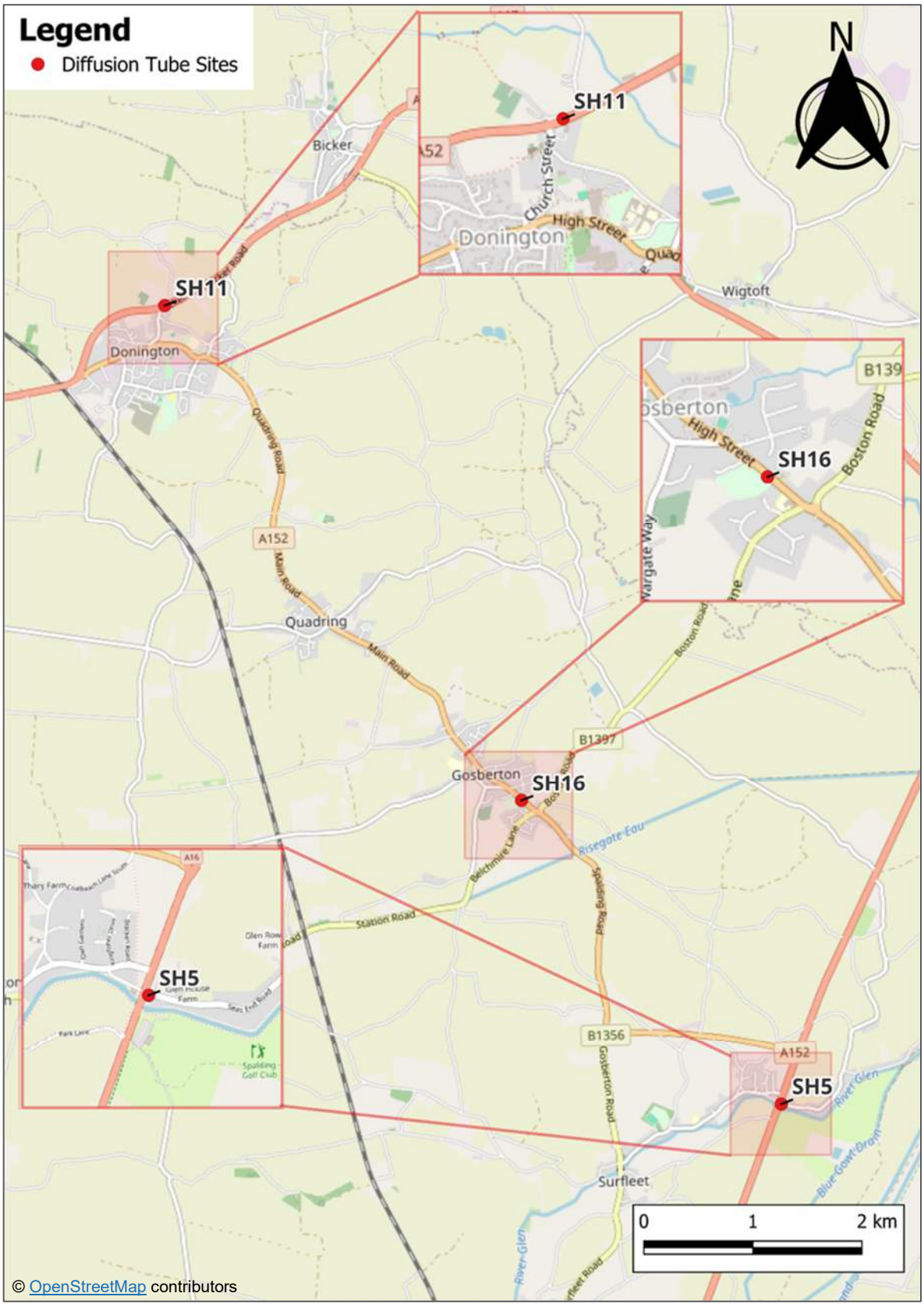


Figure D.3 – Map of Automatic and Non-Automatic Monitoring Sites – Whaplode, Holbeach, Chapelgate and Sutton Bridge

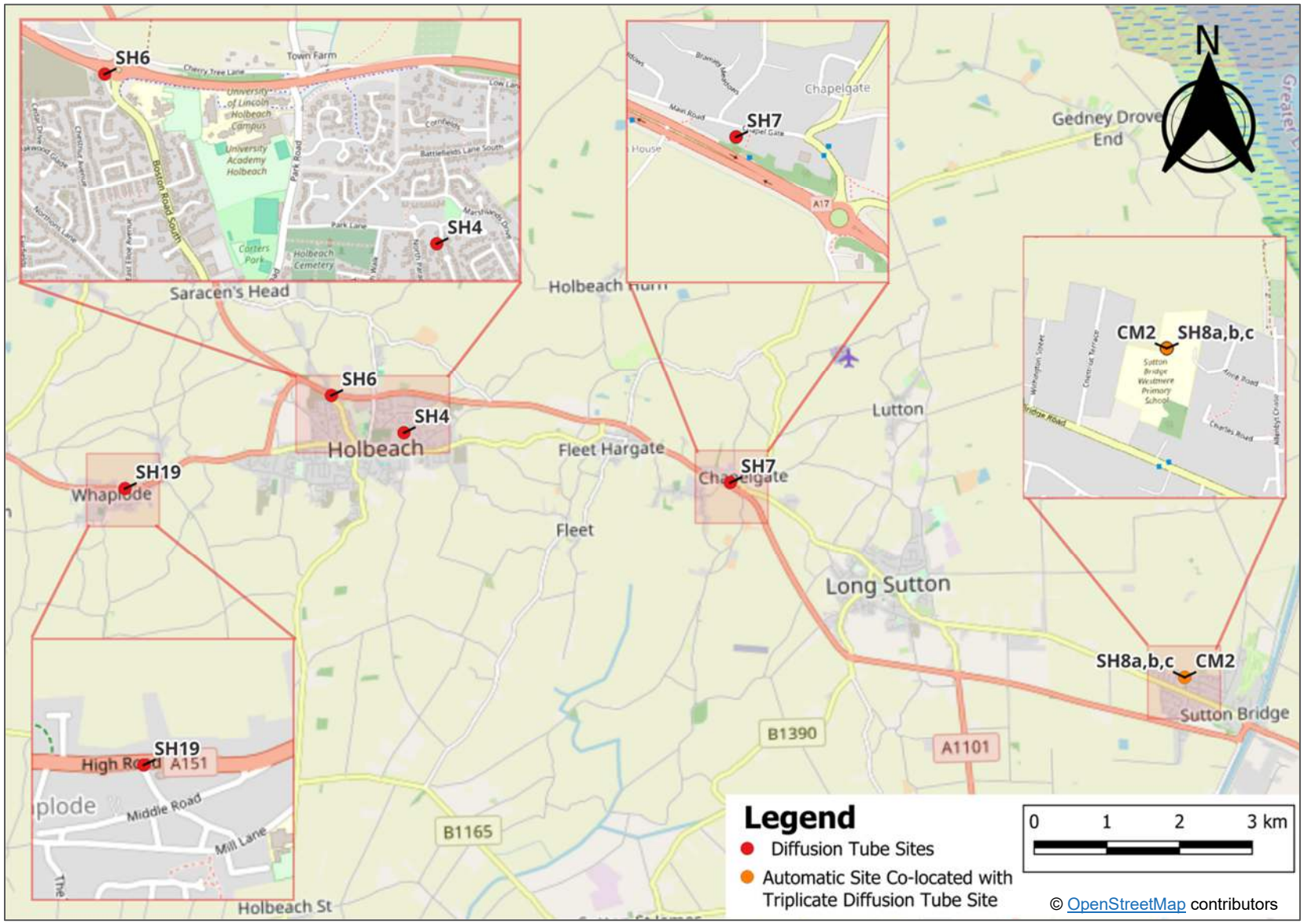


Figure D.4 – Map of Non-Automatic Monitoring Sites – Crowland



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[6]

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

[6] The units are in microgrammes of pollutant per cubic metre of air (µg/m^3).

Appendix F: Comments received from the Director of Public Health for Lincolnshire County Council

Sue Armour
Team Leader Environmental Protection
South Holland District Council

via email: susan.armour@sholland.gov.uk

Professor Derek Ward
Director of Public Health
Lincolnshire County Council
County Offices
Newland
Lincoln LN1 1YL

Tel: 01522 552902
Email: derek.ward@lincolnshire.gov.uk

Ref: DGW/SAJ/DEW

26 June 2025

Dear Sue,

SOUTH HOLLAND DISTRICT COUNCIL – AIR QUALITY ANNUAL STATUS REPORT

Thank you for giving me the opportunity to review and sign off South Holland's Air Quality Annual Status Report (ASR) for 2025. Overall, I am content with the findings, messages, and actions in the ASR, and I am grateful to see that the post-submission comments we made on the 2024 report have been addressed in this year's report. I am, therefore, happy for the wording to be amended as you suggest, reflecting that it has been signed off by the Director of Public Health.

Some suggestions for you to consider below.

Section 2.2 on page 5 would benefit from the layout being amended. The bold text looks more like headings rather than responses to Department for Environment, Food and Rural Affairs (DEFRA) comments, meaning it was difficult to recognise that comments 5 to 8 were still DEFRA comments from last year, and not ours. These would be better indented further than the comments themselves and perhaps be in italics rather than bold. I think it would be worth re-iterating to DEFRA that the DPH is from another organisation to South Holland District Council here by including 'the Director of Public Health for Lincolnshire County Council'.

It is good to see that there have been no exceedances of Nitrogen Dioxide (NO_2) at monitoring sites, and no requirement for any Air Quality Management Areas (AQMAs) to be set up, and that modelled annual average concentrations of Particulate Matter (PM_{10} and $PM_{2.5}$) fall significantly below the respective Air Quality Strategy (AQS) Objectives. It would be helpful to have recorded Particulate Matter levels, but I appreciate that monitoring comes at a cost. Reference to the Public Health Outcomes Framework (PHOF) indicators around Fine Particulate Matter is also welcome. It is also positive to reflect that partnership initiatives referenced in the report and measures included within Table 2.1 are being taken forward through the ASR to further improve air quality in South Holland.

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Lincoln LN1 1YL
www.lincolnshire.gov.uk

I note that the Lincolnshire Clean Air Project is referenced in the body of the report but not in the action plan (Table 2.1). I accept that the public information on the website remains in place, but my understanding is development has stalled and that the schools project element to this has ceased. I'd be happy for my team to explore this with you and the Lincolnshire County Council (LCC) Sustainability and Environment team. There are also several other measures of interest that I would be keen to explore further. I'd be happy for my team to explore this with you and the Lincolnshire County Council (LCC) Sustainability and Environment team.

The number of measures in Table 2.1 is quite low. To this end, the Public Health team can commit to supporting the development of the local AQS for South Holland, particularly around the following:

- Home improvements and fuel switching. LCC has joined and is promoting the Solar Together scheme and we can assist in targeting Warm Homes: Local Grant.
- Agricultural practices. As stated, farming could potentially be a large contributor to Particulate Matter and is an area that should be explored further, but without causing undue concern. We would be pleased to support this action working with yourselves, the University of Lincoln, and the Lincolnshire Rural Support Network (LRSN).
- Local cycling and walking infrastructure plans (LCWIPs). Public Health already supports the development of LCWIPs and intends to devote more time to this alongside the LCC Active Travel Officers.

Progress against these initiatives, some of which are referenced in the body of the report, could be included in the equivalent table in the 2026 ASR.

I am pleased to see Ozone (O3) as an individual pollutant together with an explanation for context. For reference, there has been a recent project into methane and its effects on health led by the University of Lincoln. Could and should the ASR and AQS also cover other emissions (e.g., ammonia (noting it does talk about smoke)) and include actions to tackle these pollutants, which can cause health issues?

The inclusion of infrastructure projects and planning application receiving consent that have potential to impact on air quality in Appendix C is useful and could inform future monitoring sites.

The University of Lincoln, in partnership with other UK and international universities, has recently formed a Multi Hazards to Health Outcomes (MH2O) network, which LCC are part of. This is looking at the combined effects of hazards such as excess heat together with poor air quality, poor housing standards, etc. It would be good to have Environmental Health representation on the network at local and national level.

I hope these comments are of use and I look forward to seeing future ASRs and my team supporting the emerging local AQS for South Holland.

Best wishes



Professor Derek Ward BA (Hons), MA, MPH, FFPH, FRSPH
Director of Public Health &
Visiting Professor of Public Health

2

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
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

References

- Local Air Quality Management Technical Guidance LAQM.TG22. May 2025. 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. May 2025. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Chemical hazards and poisons report: Issue 28. June 2022. Published by UK Health Security Agency
- Air Quality Strategy – Framework for Local Authority Delivery. August 2023. Published by Defra.
- South Holland District Council Annual Status Report 2024
- South Holland District Council Annual Status Report Appraisal Report August 2024
- Ozone (O3) Accredited Official Statistics: Updated 30th April 2024. Published by Defra.
- European Environment Agency, Methane, climate change and air quality in Europe: exploring the connections. February 2025.