



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: July 2025

Information	Breckland Council Details
Local Authority Officer	V. Addy and R. Forrest
Department	Environmental Protection & Enforcement
Address	Elizabeth House, Walpole Loke, Dereham, Norfolk, NR19 1EE
Telephone	01362 656870
E-mail	eh.bst@breckland.gov.uk
Report Reference Number	Breckland ASR2025
Date	July 2025

Local Responsibilities and Commitment

This ASR was prepared by the Environmental Protection and Enforcement Team of Breckland Council with the support and agreement of the following officers and departments:

- R. Forrest, Environmental Protection Officer, Breckland Council
- V. Addy, Senior Environmental Protection Officer, Breckland Council

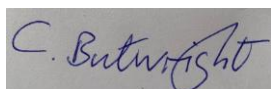
This ASR has been approved by:

Craig Fowler, Environmental Health and Licensing Manager, Breckland Council



Cllr Helen Crane, Executive Member for Waste, Environmental Health, Licensing and Sustainability

This ASR has been signed off by Christopher Butwright, Assistant Director of Public Health – Prevention and Policy, Norfolk County Council.

A handwritten signature in blue ink that reads "C. Butwright". The signature is written in a cursive style with a large initial 'C'.

If you have any comments on this ASR please send them to the report authors at:

Elizabeth House,

Walpole Loke,

Dereham,

Norfolk,

NR19 1EE

Email: envprotect@breckland.gov.uk

Executive Summary: Air Quality in Our Area

Air Quality in Breckland

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 and deprived 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 (SO ₂) 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. PM₁₀ refers to particles under 10 micrometres. Fine particulate matter or PM_{2.5} are particles under 2.5 micrometres.

The District of Breckland is approximately 500 square miles of mostly rural areas and comprises the principal market towns of Attleborough, Dereham, Swaffham, Thetford, and Watton. The District has a fairly low population density, with 141,500 residents recorded in

the 2021 census¹. For the past five years, monitored concentrations at all locations in the District have been found to be below the NO₂ annual mean Air Quality Objective of 40µg/m³. Previous Annual Status Reports (ASR) with full details of all monitoring and results can be found on the Council website at this link:

<https://www.breckland.gov.uk/article/3244/Air-Pollution>.

The Council's only Air Quality Management Area (AQMA), located in Swaffham, was revoked on the 24th June 2024. The AQMA, which was declared in May 2017 due to exceedances of the NO₂ annual mean, included the main vehicular route in the town centre, around the A1065. The revocation followed several years of monitoring where there was no exceedance of the NO₂ annual mean. The boundaries of Breckland's now revoked AQMA can be seen in Appendix D.8 and on [UK-AIR](#).

Until June 2024, Breckland Council monitored NO₂ using passive diffusion tubes at 26 locations and two automatic monitoring stations. After June 2024, Breckland Council monitored NO₂ using passive diffusion tubes at 26 locations and one automatic monitoring station. The automatic monitoring station in Swaffham was decommissioned following the revocation of the AQMA. The co-location of triplicate passive diffusion tubes was then reduced to one.

There were no exceedances of the annual mean NO₂ air quality objective of 40µg/m³. The remaining sites generally showed continuing decreasing concentrations in NO₂ which is the overall trend seen in Breckland and the wider UK. There were some minor exceptions as shown in the table below:

Table ES 2 – Locations with NO₂ increase

Location	Annualised mean (µg/m ³) 2023	Annualised mean (µg/m ³) 2024
D1	21.5	21.6
D2	15.7	16.0
S7	17.2	17.8

¹ Office for National Statistics. How the population changed in Breckland: Census 2021, June 2022

S14	12.2	14.3
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The location of the monitoring locations is shown in Appendix D.

The highest concentration of NO₂ was monitored at Diffusion Tube D1 (Dereham Marketplace) and was monitored at 21.6µg/m³. This is significantly below the annual mean NO₂ air quality objective.

Automatic PM₁₀ and PM_{2.5} monitoring is carried out at the Breckland East Wretham (BRE01) air quality monitoring site. The monitored concentration of PM₁₀ of 12.0µg/m³ in 2024 was well below the annual mean air quality objective of 40µg/m³ and lower than the concentration of 13.0 µg/m³ in 2023. In 2023, PM_{2.5} monitoring commenced at East Wretham. The concentration measured in 2024 was 7.0µg/m³ which is lower than the concentration of 8.8µg/m³ measured in 2023. This remains below the interim target for PM_{2.5} of 12µg/m³.

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 Plan² sets out actions that will drive continued improvements to air quality and to meet the new national interim and long-term targets for fine particulate matter (PM_{2.5}), the most harmful pollutant to human health. The Air Quality Strategy³ provides more information on local authorities' responsibilities to work towards these new targets and reduce fine particulate matter in their areas.

The Road to Zero⁴ details the Government's approach to reduce exhaust emissions from road transport through a number of mechanisms, in balance with the needs of the local community. This is extremely important given that cars are the most popular mode of

² Defra. Environmental Improvement Plan 2023, January 2023

³ Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

⁴ DfT. The Road to Zero: Next steps towards cleaner road transport and delivering our Industrial Strategy, July 2018

personal travel and the majority of AQMAs are designated due to elevated concentrations heavily influenced by transport emissions.

Breckland Council has the following priorities (in no particular order):

- Priority 1 – Cross Council collaboration and investment – Breckland Council and the wider councils in Norfolk, including the County Council, are committed to reducing emissions including carbon emissions. Measures include hybrid waste collection fleet vehicles and optimising routes to reduce fuel use. Breckland Council is also part of the Countywide Air Quality Group, working in partnership with Natural England, Public Health and other Local Authorities in Norfolk.
- Priority 2 – Planning Policy – Active travel remains a priority for Breckland Council when making planning decisions. Locating development in sustainable areas through the settlement hierarchy is also aimed to reduce the use of private cars. This is achieved by directing housing in ascending order to market towns, key service centres, primary villages, secondary villages and other villages based on the amount of services located there (e.g. school, shop, pubs, employment, public transport) so that residents can travel to work with less reliance on car travel. Breckland Council's emerging local plan includes Agricultural Intensification policies around odour and air quality including ammonia and nitrogen deposition and air quality.
- Priority 3 – Public Transport - Breckland Council are improving public transport, including new bus stops with real time information, signs and low NO_x buses.
- Priority 4 - Sustainable travel –The Countywide Local Cycling and Walking Infrastructure Plan (LCWIP) was adopted in April 2024 as was the Norfolk Walking, Wheeling and Cycling Strategy by Norfolk County Council. This aims to enhance active travel interconnectivity within Dereham and between other market towns like Swaffham and Downham Market. New electric charging points have been installed in Watton and Swaffham to encourage emissions-free travel. Breckland Council has worked in partnership with Dereham Town Council to resurface the Cherry Tree Lane Cycle Route which connects key part of the town, reducing reliance on cars and contributing to improved air quality. Breckland Council is currently undertaking a feasibility study for sustainable travel in Dereham to expand on active travel options, an East-West Cycle link, with further links to employment and residential areas.

A feasibility study on active travel between Attleborough-Snetterton has identified viable routes and connections which support active travel for workers and residents as well as addressing infrastructure gaps. This scheme is expected to positively impact air quality in Breckland by encouraging active, low-emission travel modes. By providing safer and more accessible options for pedestrians and cyclists, it aims to reduce reliance on motor vehicles, thereby lowering local emissions and contributing to improved public health and environmental quality.

Conclusions and Priorities

The overall trend observed in Breckland is a decrease in NO₂. The concentrations of PM₁₀ and PM_{2.5} have decreased since last year.

The AQMA was revoked in June 2024 following a detailed modelling assessment in Swaffham. Breckland Council continues to monitor air quality in Swaffham. In addition, the Council published a Swaffham Masterplan Enhancement Scheme in February 2022 which includes goals such as 'promote a healthy environment', 'ease of movement' etc. The report considers parking, HGV traffic, traffic management, pedestrianisation, 'greening' and air quality in the town.

Breckland Council will continue to prioritise air quality and improving public transport in collaboration with Norfolk County Council. Breckland Council are also working in partnership with Natural England, Public Health and other Local Authorities in Norfolk on air quality.

All of the priorities in this report are underpinned by Breckland Council's corporate plan (<https://www.breckland.gov.uk/corporateplan>), in particular the themes 'Working Smarter 2035' and 'Thriving Places'. The themes outline Breckland Council's commitment to, for instance, reducing the carbon footprint by driving efficiency and innovation through the Council's waste and recycling contract and working with partners so ensure that strategic infrastructure needs (transport, walking, cycling etc) are supported.

How to get Involved

Residents and businesses within Breckland are encouraged to use public transport and active travel methods for journeys around the area, particularly in peak times. The Council also engage with Clean Air Day in June and residents are encouraged to get in contact with the officers to raise suggestions and ideas of how air quality can be further improved in your area.

Find out more about your local air quality by:

- Contacting the named officers at Breckland Council (details at the beginning of this report) or email envprotect@breckland.gov.uk
- Visiting our dedicated Air Quality webpage:
<https://www.breckland.gov.uk/article/13005/Air-quality>
- Contact your local councillor with any concerns:
<https://democracy.breckland.gov.uk/mgMemberIndex.aspx?FN=ALPHA&VW=L%20IST&PIC=0>.

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1 Local Air Quality Management

This report provides an overview of air quality in Breckland 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 Breckland 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

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 Plan² 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, published in April 2023, provides more information on local authorities' responsibilities to work towards these new targets and reduce PM_{2.5} in their areas. The Road to Zero⁴ details the approach to reduce exhaust emissions from road transport through a number of mechanisms; this is extremely important given that the majority of AQMAs are designated due to elevated concentrations heavily influenced by transport emissions.

With regard to the National Planning Policy Framework⁵, air quality considerations have been adopted across the district when dealing with planning applications and the provision of pre-application advice. In 2017, an Air Quality Development Management Policy was implemented as part of the Air Quality Planning and Policy Guidance classification. Following the declaration of the AQMA in 2017 in Swaffham, an [Air Quality Action Plan](#) was produced and was published in 2018. Improvements in traffic queueing and delays were a strong focus in the AQAP, with proposed removal of the traffic lights on the Station Street/Mangate Street junction, encouragement of public transport use, and review of car parking enforcement and the town centre's one-way system. Breckland Council is continuing to look at ways to reduce traffic and congestion in Swaffham town centre aiming to make it better for local people and visitors. Following the revocation of the AQMA in 2024, an Air Quality Strategy will eventually be developed to replace the AQAP. It is understood from DEFRA that the Air Quality Strategy is a recommendation and not a requirement and that there is no timeframe for its publication.

⁵ National Planning Policy Framework, 2023 <https://www.gov.uk/guidance/national-planning-policy-framework>

Vehicle emissions

- Breckland Council have four charging points in the following Breckland car parks, serviced and maintained by Pogo Charge.

These allow for two cars to charge simultaneously and offer Fast and Rapid charging.

Swaffham - Pedlars Car Park Market Place, PE37 7AB

Attleborough - Queens Square Car Park, Queens Square, NR17 2AE

Thetford - Pike Lane Car Park, Pike Lane, IP24 2DR

Dereham - Cowper Road Car Park, Cowper Road, NR19 2DA

Additional charging points are located below, operated on a profit-share basis for the Council by Mer UK.

These allow for four cars to charge simultaneously, with two Rapid and two Fast sockets:

Swaffham - Theatre Street Car Park, Theatre Street PE37 7HF

Attleborough - Kittell Close Car Park, Kittell Close IP25 6DA



- An increase in EV charging points has encouraged the introduction of electric taxis. Breckland Council licenced 6 electric taxis in 2024.



- Breckland Council has worked on providing a dedicated food waste collection service for businesses. This aims to provide local enterprises with a practical and cost-effective solution to meet new national recycling regulations introduced on 31 March 2025.

Under the new 'Simpler Recycling' legislation from the Department for Environment, Food & Rural Affairs (Defra), businesses with 10 or more full-time equivalent employees must separate their waste, with food, recycling and general waste all needing to be disposed of separately. Breckland Council's Business Waste Collection Service now offers tailored food waste disposal services alongside its established waste and recycling collection options, helping businesses stay compliant with the new requirements.

This helps by reducing waste and cutting emissions.

The Council is now working towards household food waste collections in 2026 which would reduce landfilling and further cut emissions.



Climate Emergency and Carbon

Since January 2021, Breckland Council has committed further to addressing the climate emergency.

Breckland Council's first [Sustainability and Climate Change Strategy](#) comes after Breckland Council members voted to declare a climate emergency in September 2019. Since then, the Council has made tackling climate change a top priority and been developing its strategy.

- Breckland Council have signed up with Zellar and have 10 licenses for Breckland Businesses to use. At this moment, 8 have been taken with 2 left to give out. Zellar is a UK-based digital sustainability platform designed to help small and medium-sized enterprises (SMEs) measure, manage, and improve their environmental impact.
- Breckland Council launched a Low Carbon Regeneration Programme (LCRP) which has now been completed. The programme is designed for businesses in Breckland, to help towards decarbonisation. The programme has now helped 15

businesses obtain detailed decarbonisation plans for their business to help their journey towards net zero.

Over 45 businesses signed up to the programme, and all received invitations to detailed workshops around net zero subjects. The businesses can use the knowledge provided by applying this to their businesses to help reduce emissions.

- Breckland Council has installed over 1000 solar panels on 2 of its leisure centre facilities, with a combined annual saving of approximately 90 tonnes of CO₂.



- Breckland Council planted 50 sapling trees at its offices as part of its commitment to help tackle climate change and create a more sustainable future, with many of the trees donated due to the Council's partnership with the Woodland Trust.



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.

Breckland Council currently does not have any declared AQMAs.

The development of a local Air Quality Framework for Norfolk is being explored in collaboration with other Norfolk Authorities, including Public Health.

2.2 Progress and Impact of Measures to address Air Quality in Breckland

Defra's appraisal of last year's ASR concluded:

1. *BDC state that they will produce a Local Air Quality Strategy in 2024 following the revocation of the sole AQMA within their jurisdiction. The Council are encouraged to develop this strategy as soon as possible.*

Breckland Council have been advised by DEFRA that there is no deadline to produce an Air Quality Strategy. An AQS is a recommendation but not a requirement and Breckland Council can therefore submit the report within its own timeframe. Due to resourcing pressures and Local Government Re-organisation (LGR) in Norfolk, the AQS will be on hold until further notice. However, Breckland Council is part of the Norfolk Countywide Air Quality Partnership, comprising all Norfolk local authorities and other key local partners such as Natural England and the Environment Agency. The Partnership are continuing to collaborate through quarterly meetings to share updates, exchange best practice, and work on joint funding bids. The Partnership is currently working collaboratively to develop a "Norfolk Air Quality Framework" which will formalise the group, demonstrate a shared commitment to working together and strengthen future funding bids.

2. *BDC have a number of extensive measures in place to reduce PM_{2.5} emissions within their district, including reference to the Public Health Outcome Framework. This highlights their pro-active approach to addressing air quality and is to be commended.*

In 2024, Breckland Council organised the first Air Quality Summit in Norfolk attended by the Environment Agency, Natural England, Research Centres, Local Government officers, members of the farming community and Planning Officers to initiate a collaborative approach on dealing with the impact of intensive farming on Air Quality. Ammonia emissions arising from intensive farming are a precursor to PM_{2.5} emissions.

3. *BDC state that not all diffusion tube monitoring was carried out in accordance with the 2023 Diffusion Tube Monitoring Calendar. They are encouraged to ensure that all monitoring is conducted in line with the calendar going forward.*

Breckland Council changed its monitoring in accordance with the Diffusion Tube Monitoring Calendar in July/ August 2024. All monitoring past that date now align with the calendar.

4. *BDC provide details NO₂ monitoring results in the report; splitting the monitoring locations between those outside and inside the now revoked AQMA.*

Breckland Council has maintained this split this year for illustration purposes, despite the absence of an AQMA.

5. *BDC have provided good mapping of all monitoring locations within the district and included a map clearly showing Council boundaries. This is welcomed.*

Breckland Council has continued with this in this year's report.

6. *BDC provide clear, well-presented graphs illustrating the trends in the monitoring data across their district, with robust comparisons to the relevant air quality objectives provided. This is to be commended and is encouraged to continue in future reports.*

Breckland Council has continued with this in this year's report.

Breckland Council has taken forward a number of direct measures during the current reporting year of 2024 in pursuit of improving local air quality. Breckland Council's priorities for the coming year are continuing to reduce the council's carbon footprint and increasing and improving public transport options in the area.

Details of all measures completed, in progress or planned are set out in Table 2.1. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.1.

The principal challenges and barriers to implementation that Breckland Council anticipates facing are predominantly securing funding for several measures.

Breckland Council worked to implement these measures in partnership with the following stakeholders during 2024:

- Neighbouring local authorities;
- Norfolk County Council Sustainable Transport Team
- Natural England
- Public Health

Breckland Council anticipates that the measures stated above and in Table 2.1 will achieve compliance with the National Air Quality Objectives and the now revoked AQMA.

Table 2.1 – Progress on Measures to Improve Air Quality

There are no AQMAs within Breckland district. Table 2.2 below has been updated with a general summary of measures to improve air quality across the district. The top priorities are measure numbers 1-4, in no particular order.

Measure No.	Measure Title	Category	Classification	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	Cross council collaboration and investment	Vehicle Fleet Efficiency	Other - Fleet efficiency	Breckland Council and the Borough Council of King's Lynn and West Norfolk. Serco.		None	None		None		Reduce carbon footprint.	Reduce carbon footprint. The contract largely uses a new fleet of vehicles with some electric vehicles. The new fuel-efficient trucks are quieter, produce less CO ₂ per mile and use 18% less fuel	Hybrid waste collection fleet vehicles and optimising routes to reduce fuel use. Provision of food waste to commercial premises has been rolled out.
2	Consideration of Air Quality Impacts when providing comments on planning applications and Local Plan	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	District Council (LPA & Env Protection Team)		None	None	None	None		Number of pre application discussions and planning applications.	Ongoing consultations -requiring review of AQ impacts of proposals and recommending mitigation including active travel and measure to encourage forms of low or non-polluting travel. Engaging with Planning Policy to shape policy.	Ongoing action – AQ as part of planning development to link in action around the local plan. Emerging local plan includes Agricultural Intensification policies around odour and air quality including ammonia and nitrogen deposition and air quality.
3	Public Transport Improvements – bus services	Promoting Low Emission Transport / Alternative to Private Vehicle Use	Promoting Travel Alternatives	Norfolk County Council	Norfolk County Council	None	Funded	TBC	TBC	TBC	Emissions within national objectives	Various public transport improvements have been made (through Norfolk County Council's Bus Service Improvement Plan) to encourage the use of bus services, these include the addition of 'Gold' standard bus stops in Swaffham (x2), Attleborough and Watton (x2), as well as 30 bus stops being upgraded to improve accessibility. In addition, all bus stops within the district have been equipped with QR boards to access online bus departure board information. Improvements have also been made to service frequencies, for example Sunday and Bank Holiday services from Dereham to Watton have been funded through the Bus Service Improvement plan, and there are also additional commercial services running from Thetford to Norwich via Attleborough. There is fare cap in place in Thetford town (of £1.50 maximum) and there are also weekly, monthly and group discounted tickets available across Norfolk.	

Measure No.	Measure Title	Category	Classification	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
3a	Public Transport Improvements - Low NO _x buses	Promoting Low Emission Transport / Alternative to Private Vehicle Use	Promoting Low Emission Transport	Norfolk County Council First Buses	ZEBRA (Zero Emission Bus Regional Area)	None	Funded	TBC	TBC	TBC	Emissions within national objectives	Norfolk County Council and First were successful in securing government funding through the Zero Emission Bus Regional Area (ZEBRA) fund for 70 zero emission battery electric buses to be operated in Norwich, Norfolk County Council will continue to explore any future grant funding opportunities for zero emission buses to be rolled out further, including in Breckland.	
4	Improve walking and cycling facilities in and around the district	Promoting Travel Alternatives	Bus route improvements Cycle network Public cycle hire scheme	County Council District Council Council Town Council	County Council District Council Town Council	None	None	Not yet determined	Not yet determined	1µg/m ³	Emissions within national objectives	The Countywide Local Cycling and Walking Infrastructure Plan (LCWIP) was adopted in April 2024 as was the Norfolk Walking, Wheeling and Cycling Strategy by Norfolk County Council. This aims to enhance active travel interconnectivity within Dereham and between other market towns like Swaffham and Downham Market. New EV points have been installed in Watton and Swaffham. The Cherry Tree Lane Cycle Route which connects key part of the town, has been resurfaced. Breckland Council is currently undertaking a feasibility study for sustainable travel in Dereham to expand on active travel options, an East-West Cycle link, with further links to employment and residential areas. A feasibility study on active travel between Attleborough-Snetterton has identified viable routes and connections which support active travel.	NCC have published the Walking Wheeling and Cycling strategy and the Local cycling and walking infrastructure plans - Norfolk County Council
5	Reduction of traffic and congestion in Swaffham	Traffic Management	Workplace Parking Levy, Parking Enforcement on highway	County Council District Council Town Council	County Council District Council Town Council	None	None	Not yet determined	Not yet determined	1µg/m ³	Emissions within national objectives	Breckland and Norfolk County Council have been exploring options to reduce traffic and congestion in the town.	Funding is required for this to be progressed.
6	Review existing travel arrangements to schools and any existing Travel Plans including the role of car sharing	Promoting Travel Alternatives	Bus route improvements Cycle network Public cycle hire scheme	Count Council District Council Town Council	Count Council District Council Town Council	None	None	Not yet determined	Not yet determined	1µg/m ³	Emissions within national objectives	Options are being explored for all Norfolk schools to provide information on mode travelled to school throughout the academic year to provide baseline data to measure progress against.	The County Council promotes Modeshift Stars software with schools so that they can generate and manage their own travel plans.
7	Taxi Licensing conditions	Promoting Low Emission Transport / Alternative to Private Vehicle Use	Taxi Licensing conditions	District Council, taxi drivers		None	None	Not yet determined	Not yet determined	1µg/m ³	Emissions within national objectives	Breckland Council will carry out a review of its Hackney Carriage and Private Hire Vehicle Licensing Specifications next year. This will help to encourage lower emissions and more environmentally friendly vehicles	
8	EV Charging Installation	Encouraging Low Emission transport	Procuring alternative Refuelling infrastructure to promote	Breckland Council and Breckland Council's	Breckland Council's Market Towns Initiative	None	None	Not yet determined	Not yet determined	1µg/m ³	Emissions within national objectives	Breckland Council launched new electric vehicle charging points in Watton and Swaffham, expanding access to emissions-free transport.	

Measure No.	Measure Title	Category	Classification	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
			Low Emission Vehicles, EV recharging, Gas fuel recharging	Market Towns Initiative									
9	Investigate Green Space Initiatives	Other	Other	District Council Town Council	District Council Town Council	None	None	Not yet determined	Not yet determined	1µg/m³	Emissions within national objectives	Breckland Council planted 50 sapling trees at its offices.	see Breckland 2035 Sustainability Strategy, https://www.breckland.gov.uk/environment/climate-change
10	Collaboration	Other	Other	Norfolk County Council		Yes	Funded	TBC	TBC	TBC	Emissions within national objectives	Breckland is part of the Countywide Air Quality Group, which includes all Local Authorities in Norfolk as other key stakeholders and is focussed on collaborating to improve air quality and raise awareness of air quality issues. The group collaborated on a countywide funding bid to DEFRA in 23/24 and plan to work on joint funding bids, joint projects and other joint working opportunities in future'.	

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 Strategy⁶, 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.

Breckland Council is taking the following measures to address PM_{2.5}:

- Active travel – this remains a priority for Breckland Council when making planning decisions. Locating development in sustainable areas through the settlement hierarchy is also aimed to reduce the use of private cars. This is achieved by directing housing in ascending order to market towns, key service centres, primary villages, secondary villages and other villages based on the amount of services located there (e.g. school, shop, pubs, employment, public transport) so that residents can travel to work with less reliance on car travel.
- Public transport improvements - Various public transport improvements have been made (through Norfolk County Council's Bus Service Improvement Plan) to encourage the use of bus services, these include the addition of 'Gold' standard bus stops in Swaffham (x2), Attleborough and Watton (x2), as well as 30 bus stops being upgraded to improve accessibility. In addition, all bus stops within the district have been equipped with QR boards to access online bus departure board information.
- Low NO_x buses - Norfolk County Council and First were successful in securing government funding through the Zero Emission Bus Regional Area (ZEBRA) fund for 70 zero emission battery electric buses to be operated in Norwich. Norfolk County Council will continue to explore any future grant funding opportunities for zero emission buses to be rolled out further, including in Breckland. Breckland Council launched new electric vehicle charging points in Watton and Swaffham, expanding access to emissions-free transport.

⁶ Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

- Breckland Council, in partnership with Dereham Town Council, has helped transform the Cherry Lane footpath in Dereham into a more accessible route for walkers and cyclists, supporting cleaner, greener travel. The resurfaced path connects key parts of the town, reducing reliance on cars and contributing to improved air quality. This project, aligned with Norfolk's Local Cycling and Walking Infrastructure Plan, was backed by £41,000 from the UK Rural Prosperity Fund, highlighting the Council's commitment to sustainable transport and environmental improvement.
- Breckland Council's emerging local plan includes Agricultural Intensification policies around odour and air quality including ammonia and nitrogen deposition and air quality.
- In 2024, Breckland Council organised the first Air Quality Summit in Norfolk on the impacts of intensive farming on air quality, particularly as ammonia emissions are a precursor to PM_{2.5} emissions.. It was attended by the Environment Agency, Natural England, Research Centres, Local Government officers, members of the farming community and Planning Officers. The aim was to initiate a collaborative and holistic approach on dealing with the impact of intensive farming.
- Breckland Council is working with partners within the Norfolk Countywide Air Quality Group to ensure regular two-way engagement with representatives of Public Health Norfolk and Norfolk County Council Highways. This allows for an exchange of information and data, including that referenced in the Public Health Outcomes Framework. The Air Quality Group applied for Defra Funding for a Clean Air for Norfolk Campaign that would have looked at further education and the purchase of automatic PM_{2.5} monitors for use within districts, though unfortunately we were unsuccessful in this bid. Work on a joint countywide communications programme is on-going. Breckland Council has also joined an Air Quality Partnership with Natural England, the Environment Agency, Planning Policy, Norfolk Wildlife Trust, Public Health, farming representatives etc.
- Breckland Council has undertaken a feasibility study for sustainable travel in Dereham, focusing on expanding active travel options given that a significant portion of local journeys are by car, even for short distances. This aligns with national goals to reconfigure the town centre, promote healthier lifestyles, and improve traffic and air quality. The plan outlines several key projects, including an East-West Cycle Link via Norwich Road and a connection from Norwich Road to the

town centre, along with various links from southern employment and residential areas.

- This feasibility work also involves ongoing collaboration with Norfolk County Council as part of their Countywide Local Cycling and Walking Infrastructure Plan (LCWIP), which aims to enhance active travel interconnectivity within Dereham and between other market towns like Swaffham and Downham Market. These plans identify and prioritise specific routes and improvements, demonstrating a strategic approach to fostering sustainable transport across the district.
- A feasibility study has been completed concerning active travel between Attleborough and the Snetterton commercial hub. The study aimed to identify and assess viable route and connection options that support active travel for workers and residents, address infrastructure gaps, and inform future funding and delivery decisions. The scheme is expected to positively impact air quality in Breckland by encouraging active, low-emission travel modes. By providing safer and more accessible options for pedestrians and cyclists, it aims to reduce reliance on motor vehicles, thereby lowering local emissions and contributing to improved public health and environmental quality. The study includes references to air quality policy and demonstrates how the scheme aligns with national and local priorities. For example:

The DfT's *Decarbonising Transport: A Better, Greener Britain* (2021) presents a strategy to achieve net-zero emissions in the UK's transport sector by 2050, focusing on improving air quality, enhancing public health, and fostering a cleaner, more sustainable transport system.

Norfolk's fourth Local Transport Plan (LTP4), adopted in July 2022, sets out the county's transport strategy for 2021–2036. The accompanying Implementation Plan addresses objectives including achieving carbon neutrality by 2030, improving air quality in urban areas, adapting to technological advances and changing work patterns, and supporting economic growth through improved connectivity.

Smoke Control Areas

Breckland Council has no smoke control areas. Due to the very rural nature of the district, wood burners/solid fuels are in use. Breckland Council do not have a large housing stock, but all the properties within the local authority control are either electric or gas heating with

no solid fuels use. Further funding is being sought from the Warm Homes fund to support homeowners reduce their reliance on solid fuel burning.

PM_{2.5} monitoring

- Automatic PM₁₀ and PM_{2.5} monitoring is carried out at the Breckland East Wretham (BRE01) air quality monitoring site. In 2024, the monitored concentration of PM₁₀ was 12.0µg/m³ which was below the concentration of 13.0µg/m³ measured in 2023. This remains well below the annual mean air quality objective of 40µg/m³.

In 2023, PM_{2.5} monitoring commenced at East Wretham. The concentration measured in 2024 was 7.0µg/m³ which is lower than the concentration of 8.8µg/m³ measured in 2023. This remains below the interim target for PM_{2.5} of 12µg/m³.

Planning Applications

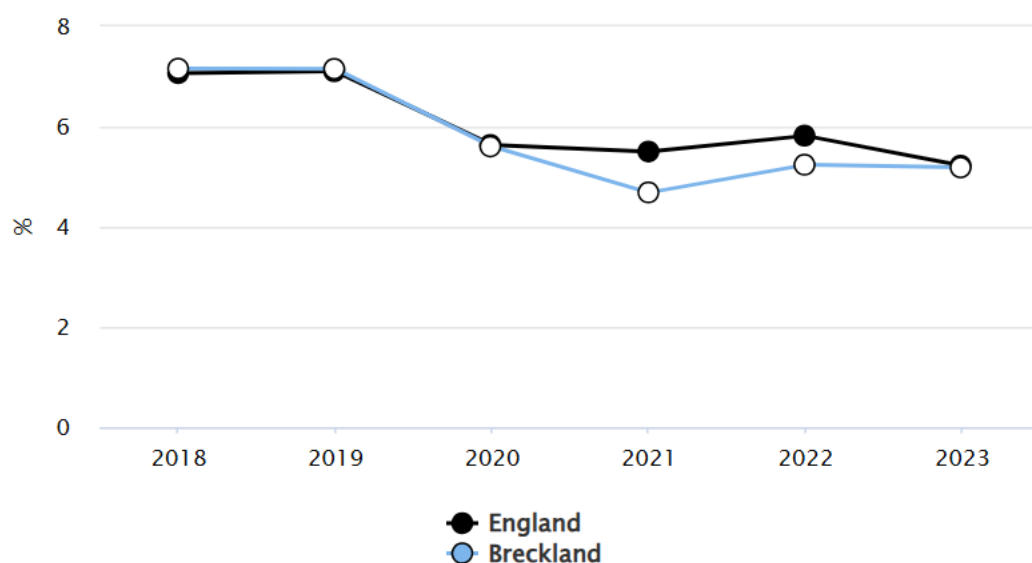
- The minimisation of airborne particulates will continue to be an important factor in all planning application considerations. Developers are required to have a fully adhered to onsite Environmental Policy which includes dust suppression. Dust monitoring by developers/ operators is also recommended when required.
- Breckland Council is reviewing its Local Plan currently and seeking comments from Natural England and the Environment Agency regarding intensive farming as there is a potential for ammonia emissions which in turn contribute to the production of PM_{2.5}.

Public Health Outcome Framework

Long term exposure to anthropogenic particulate air pollution is estimated to have an effect on mortality risks equivalent to a number of attributable deaths. The Public Health Outcome Framework (PHOF) indicator D01 gives an estimate for this value, down to local authority area. In fact, air pollution is likely to contribute a small amount to the deaths of a larger number of exposed individuals rather than being solely responsible for the number of deaths equivalent to the calculated figure of attributable deaths. However, the attributable deaths value gives a measure of the importance of air pollution for a local authority. This relative risk forms the cause for action through all delivery partners to tackle air pollution in the area.

The fraction of mortality attributable to particulate air pollution for Breckland in 2023 was 5.2% which has increased from 4.7% in 2021, possibly as a result of the Covid pandemic and the ending of 'lockdown' procedures. This value is the same as the levels of England (5.2%) and lower than the East of England region (5.4%). The percentages in the East of England region range from 5.0% to 5.8%.

Figure 1 – Public Health Outcome Framework Indicator D01 trends; estimated fraction of mortality attributable to particulate air pollution



Education

The Air Quality Partnership is looking at the possibility of putting together an educational package for primary school age children concerning air pollution, climate change, ecology, sustainable transport etc with Norfolk County Council.

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

This section sets out the monitoring undertaken within 2024 by Breckland 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

Breckland Council undertook automatic (continuous) monitoring at two sites during 2024. The monitoring station located in Swaffham was decommissioned in June 2024, with the station in East Wretham remaining operational. 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 Breckland Council, with automatic monitoring results also available through the UK-Air website .

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

3.1.2 Non-Automatic Monitoring Sites

Breckland Council undertook non- automatic (i.e. passive) monitoring of NO₂ at 26 sites during 2024. Table 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 (NO₂)

Table A.3 and Table A.4 in Appendix A compare the ratified and adjusted monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40µg/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 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.

Table A.5 in Appendix A compares the ratified continuous monitored NO₂ hourly mean concentrations for the past five years with the air quality objective of 200µg/m³, not to be exceeded more than 18 times per year.

NO₂ was monitored at two continuous monitoring locations in 2024, East Wretham and Swaffham. The station located in Swaffham was decommissioned in June 2024. No exceedances of the annual mean NO₂ air quality objective were recorded in 2024.

Passive NO₂ monitoring was undertaken at 26 sites in 2024 including two triplicate locations.

Concentrations of NO₂ within the now revoked AQMA decreased from 2023 at all monitoring locations. There were some minor exceptions in Swaffham and Dereham, as shown in table ES4:

Table ES 4 – Locations with NO₂ increase

Location	Annualised mean (µg/m ³) 2023	Annualised mean (µg/m ³) 2024
D1	21.5	21.6
D2	15.7	16.0
S7	17.2	17.8
S14	12.2	14.3

The highest concentration within the now revoked AQMA, in Swaffham, was 20.8µg/m³ at S8 located on Station Road, Swaffham. This is a drop from 2023 when the results were 21.8µg/m³. An increase was noted at S14 at the corner of White Cross Road where the concentration of NO₂ increased from 12.2 µg/m³ to 14.3 µg/m³.

The AQMA was originally declared in 2017 after an exceedance of the annual mean air quality objective of 41.0µg/m³ recorded at S8. Concentrations of NO₂ have continued to decrease and the Council revoked the AQMA in June 2024.

Across the district, the highest NO₂ concentration of 21.6µg/m³ was monitored at D1 located on the High Street in Dereham, an increase of 0.1µg/m³ from 2023. Breckland Council will continue to monitor concentrations in Dereham in future years. Remaining concentrations of NO₂ within Dereham were well below the annual mean NO₂ objective and showed a decrease when compared to 2023 concentrations.

In Thetford, concentrations of NO₂ also decreased. The highest concentration recorded in Thetford was 17.14µg/m³ at London Road Fire Station which represents a drop from 18.4µg/m³ in 2023.

In Watton, concentrations of NO₂ decreased compared to 2023 at High Street Corals (W1), with the concentration of NO₂ decreasing from 18µg/m³ to 17.1µg/m³.

The concentration of NO₂ is still well below the annual mean NO₂ air quality objective of 40µg/m³ at all locations.

3.2.2 Particulate Matter (PM₁₀)

Table A.6 in Appendix A: Monitoring Results compares the ratified and adjusted monitored PM₁₀ annual mean concentrations for the past five years with the air quality objective of 40µg/m³.

Table A.7 in Appendix A compares the ratified continuous monitored PM₁₀ daily mean concentrations for the past five years with the air quality objective of 50µg/m³, not to be exceeded more than 35 times per year.

In 2024 there were no exceedances of the 24-hour PM₁₀ mean of 50µg/m³. The annual mean concentration of PM₁₀ in 2024 was 12µg/m³ at the East Wretham monitoring location, well below the annual mean air quality objective for PM₁₀ of 40µg/m³.

Concentrations of PM₁₀ have fluctuated slightly in the past five years but no exceedances of the air quality objective have been reported.

3.2.3 Particulate Matter (PM_{2.5})

Table A.8 in Appendix A presents the ratified and adjusted monitored PM_{2.5} annual mean concentrations for the past five years.

PM_{2.5} monitoring commenced in the Breckland area at the East Wretham rural background automatic monitoring location (BRE01) in July 2023.

In 2024, the annualised concentration was 7µg/m³ which is below the interim quality target for PM_{2.5} of 12µg/m³.

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)
BRE01	East Wretham	Rural	591315	288704	NO2, PM10, O3	No	N/A	Chemiluminescence, TEOM corrected by VCM	0.0	10.0	0.0
BRE02	Swaffham	Roadside	582093	308469	NO2	No	N/A	Chemiluminescence	0.0	2.0	0.0

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).

(3) BRE02 located in Swaffham was decommissioned in June 2024.

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)
A1	High Street, Attleborough	Urban Centre	604550	295125	NO2	No	0.0	6.0	No	2.0
A2	Croft Green, Attleborough	Urban Background	603843	294085	NO2	No	0.0	7.0	No	2.0
D1	High Street, Dereham	Urban Centre	598920	313267	NO2	No	0.0	2.0	No	2.0
D2	Station Road, Dereham	Urban Background	599319	313197	NO2	No	0.0	8.0	No	2.0
D3	Wellington Street, Dereham	Urban Centre	599010	313479	NO2	No	0.0	5.0	No	2.0
S1	Impsons Butchers, Swaffham	Urban Centre	581986	309007	NO2	No	0.0	5.0	No	2.0
S2	Ceres Books, Swaffham	Urban Centre	582008	308764	NO2	No	0.0	3.0	No	2.0
S3, S3a, S3b	London Street	Roadside	582182	308434	NO2	No	0.0	4.0	Yes	2.0
S4	Bridewell Place, Swaffham	Roadside	582058	308625	NO2	No	0.0	4.0	No	2.0
S5	London Street Zebra Crossing	Roadside	582075	308496	NO2	No	0.0	7.0	No	2.0
S6	London Street N Roundabout	Roadside	582048	308609	NO2	No	0.0	5.0	No	2.0
S7	Station Road, Swaffham	Roadside	581995	309118	NO2	No	0.0	7.0	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) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
S8	Station Road, Swaffham	Roadside	581979	309147	NO2	No	0.0	5.0	No	2.0
S9	Anglia Computer Solutions, Swaffham	Roadside	581965	309063	NO2	No	0.0	4.0	No	2.0
S10	Kev's Tackle, Swaffham	Roadside	582007	309064	NO2	No	0.0	3.0	No	2.0
S11	13 Station Road, Swaffham	Roadside	582082	308567	NO2	No	0.0	3.0	No	2.0
S12	Glazedale Lamp Post, Swaffham	Roadside	581978	309308	NO2	No	0.0	3.0	No	2.0
S13	33 Station Road, Swaffham	Roadside	581991	309153	NO2	No	0.0	3.0	No	2.0
S14	Corner Whitecross	Roadside	581989	309204	NO2	No	0.0	3.0	No	2.0
T1	London Street Fire Station	Roadside	587126	283336	NO2	No	0.0	3.0	No	1.0
T2	55 Bury Road, Thetford	Roadside	586846	282721	NO2	No	0.0	3.0	No	2.0
T3	41 E. Cavell Close, Thetford	Suburban	587036	284579	NO2	No	0.0	101.0	No	2.0
W1	High Street Corals, Watton	Urban Centre	591572	300829	NO2	No	0.0	2.5	No	2.0
W2	Charles Avenue, Watton	Urban Background	591885	300622	NO2	No	0.0	2.0	No	2.0
20a, 20b, 20c	Wretham SSSI	Rural	591315	288704	NO2	No	0.0	2.0	Yes	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) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
S30	London Street	Roadside	582122	308282	NO2	No	0.0	2.5	No	2.0

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 NO₂ Monitoring Results: Automatic Monitoring (µg/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 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
BRE01	591315	288704	Rural	98.6	98.6	7.0	7.0	7.6	6.8	7.0
BRE02	582093	308469	Roadside	99.6	50.1	19.1	21.0	17.1	19.3	16.0

☒ 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 NO₂ 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/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%).

BRE02 located in Swaffham was decommissioned in June 2024.

Table A.4 – Annual Mean NO₂ Monitoring Results: Non-Automatic Monitoring (µg/m³)

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
A1	604550	295125	Urban Centre	99.7	99.7	16.4	17.4	17.1	16.5	15.6
A2	603843	294085	Urban Background	91.6	91.6	7.2	7.7	7.9	6.9	6.3
D1	598920	313267	Urban Centre	91.6	91.6	18.4	17.5	16.3	21.5	21.6
D2	599319	313197	Urban Background	99.7	99.7	13.6	21.8	21.6	15.7	16.0
D3	599010	313479	Urban Centre	90.3	90.3	18.7	18.6	18.2	15.6	13.7
S1	581986	309007	Urban Centre	99.7	99.7	13.3	14.7	14.5	13.5	12.5
S2	582008	308764	Urban Centre	83.6	83.6	19.5	23.1	21.6	19.4	17.6
S3, S3a, S3b	582095	308471	Roadside	99.7	99.7	17.3	20.7	19.9	18.1	16.1
S4	582058	308625	Roadside	93.0	93.0	14.6	17.7	16.3	14.8	13.9
S5	582075	308496	Roadside	99.7	99.7	17.1	19.4	19.5	17.7	16.5
S6	582048	308609	Roadside	99.7	99.7	21.0	22.6	22.2	18.6	17.2
S7	581995	309118	Roadside	59.0	59.0	19.1	22.9	21.5	17.2	17.8

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
S8	581979	309147	Roadside	99.7	99.7	24.1	25.7	21.5	21.8	20.8
S9	581965	309063	Roadside	99.7	99.7	14.2	20.7	17.1	15.3	15.1
S10	582007	309064	Roadside	99.7	99.7	14.5	15.2	15.3	14.4	13.7
S11	582082	308567	Roadside	74.1	74.1	12.3	14.6	14.4	13.0	12.2
S12	581978	309308	Roadside	82.7	82.7	16.3	19.2	18.4	15.5	13.4
S13	581991	309153	Roadside	90.3	90.3	20.1	23.6	-	21.6	18.3
S14	581989	309204	Roadside	99.7	99.7	19.2	17.8	12.9	12.2	14.3
T1	587126	283336	Roadside	90.3	90.3	18.0	20.2	20.0	18.4	17.1
T2	586846	282721	Roadside	99.7	99.7	14.4	16.5	13.5	14.1	13.6
T3	587036	284579	Suburban	99.7	99.7	9.9	10.4	13.2	9.0	8.0
W1	591572	300829	Urban Centre	60.9	60.9	8.9	8.9	10.5	18.0	17.1
W2	591885	300622	Urban Background	99.7	99.7	15.9	19.0	17.9	7.7	7.1
20a, 20b, 20c	591315	288704	Rural	99.7	99.7	6.7	6.9	7.3	6.0	5.8

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
S30	582122	308282	Roadside	99.7	99.7	7.1	8.4	8.2	7.0	6.7

☒ 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 NO₂ annual mean objective of $40\mu\text{g}/\text{m}^3$ are shown in **bold**.

NO₂ annual means exceeding $60\mu\text{g}/\text{m}^3$, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per LAQM.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 in Breckland (outside now revoked Swaffham AQMA)

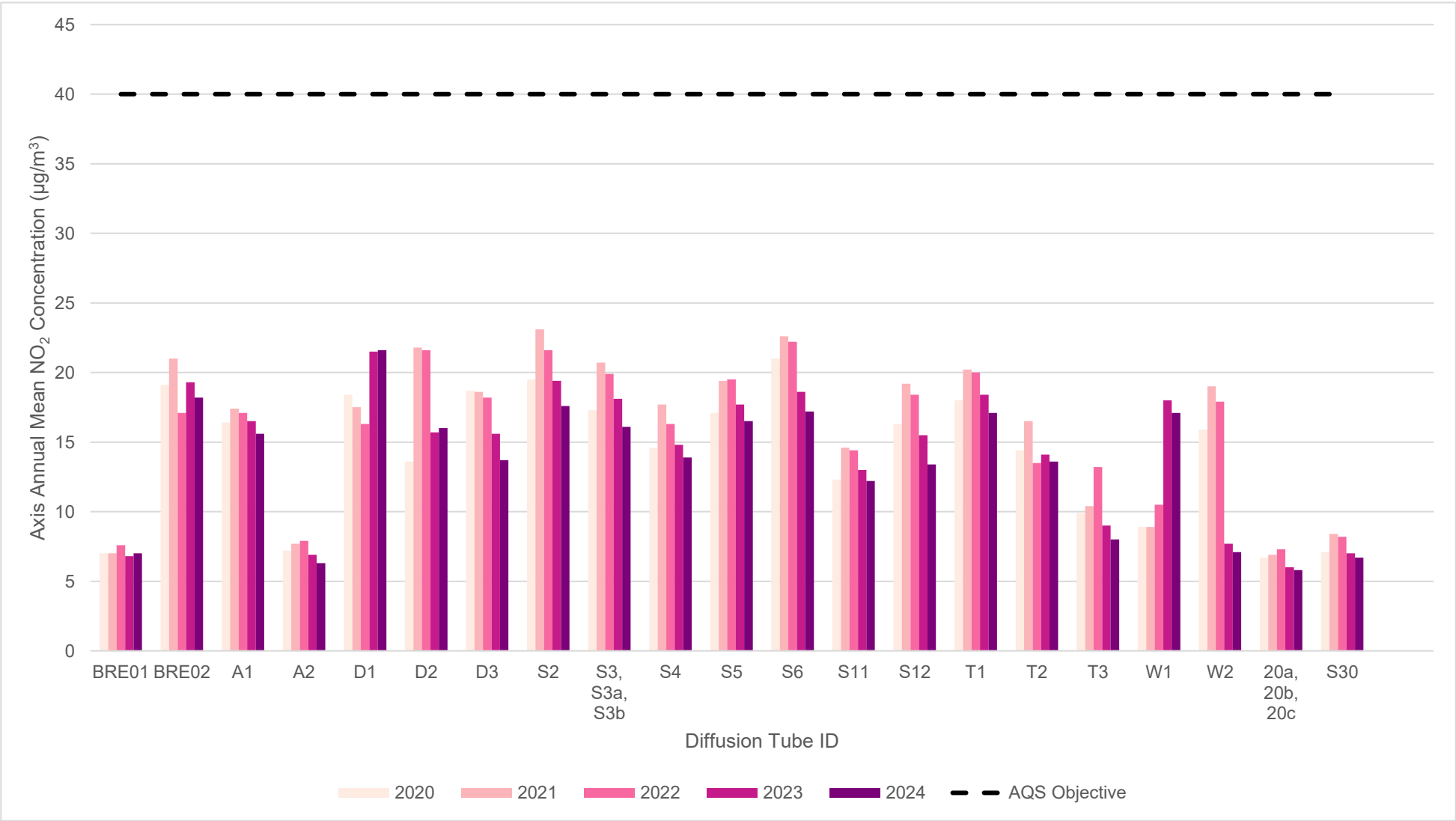


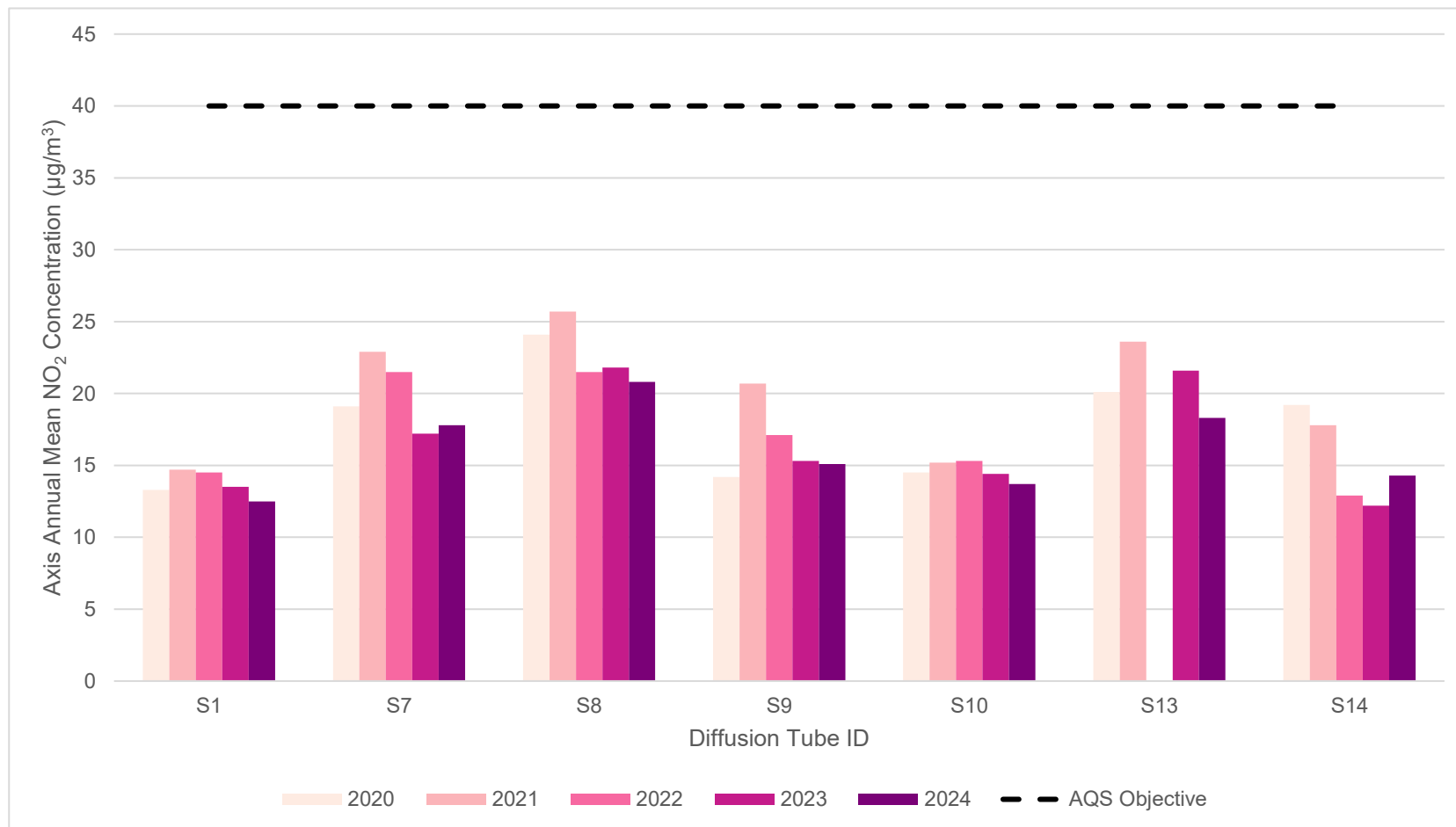
Figure A.2 – Trends in Annual Mean NO₂ Concentrations in Breckland (inside now revoked Swaffham AQMA)

Table A.5 – 1-Hour Mean NO₂ Monitoring Results, 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 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
BRE01	591315	288704	Rural	98.6	98.6	0	0	0 (47)	0	0
BRE02	582093	308469	Roadside	99.6	50.1	0	0 (97)	0	4	0 (77)

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%).

(3) BRE02 located in Swaffham was decommissioned in June 2024.

Table A.6 – Annual Mean PM₁₀ Monitoring Results (µg/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 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
BRE01	591315	288704	Rural	97.8	97.8	15.6	12.9	15.7	13.0	12.0

☒ **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%).

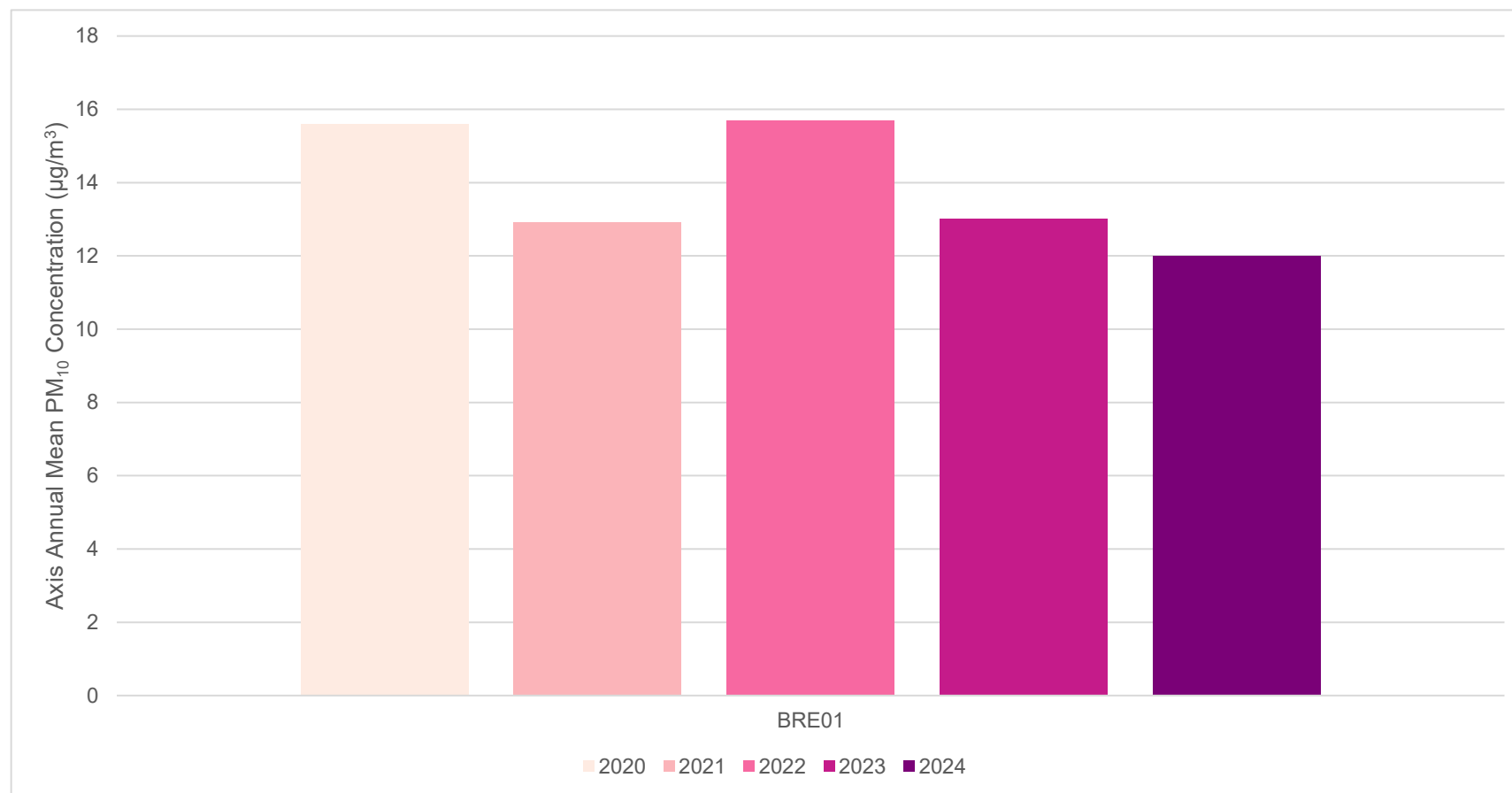
Figure A.2 – Trends in Annual Mean PM₁₀ Concentrations

Table A.7 – 24-Hour Mean PM₁₀ Monitoring Results, Number of PM₁₀ 24-Hour Means > 50µg/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 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
BRE01	591315	288704	Rural	97.8	97.8	3	0	3(24)	0	0

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.8 – Annual Mean PM_{2.5} Monitoring Results (µg/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 2024 (%) ⁽²⁾	2020	2021	2022	2023*	2024
BRE01	591315	288704	Rural	96.58	96.58	-	-	-	8.8	7.0

☒ **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%).

* PM_{2.5} monitoring at East Wretham SSSI (BRE01) commenced on 27th July 2023

Appendix B: Full Monthly Diffusion Tube Results for 2024

Table B.1 – NO₂ 2024 Diffusion Tube Results (µg/m³)

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	Annual Mean: Distance Corrected to Nearest Exposure	Comment
A1	604550	295125	19.0	23.3	19.0	16.8	16.9	15.4	15.9	15.4	16.9	23.8	22.9	17.5	18.6	15.6	-	
A2	603843	294085	10.4		8.0	6.3	5.6	4.9	5.6	5.8	6.9	9.2	11.2	8.1	7.5	6.3	-	
D1	598920	313267	26.6	30.0		23.6	27.4	24.6	23.8	22.9	23.6	28.7	33.7	18.6	25.8	21.6	-	
D2	599319	313197	17.2	20.5	16.2	17.7	17.7	17.9	18.3	18.1	16.7	22.4	26.2	19.4	19.0	16.0	-	
D3	599010	313479	18.8	15.9	19.6	14.4	16.0	14.7	13.6	12.7	16.2		21.8	15.6	16.3	13.7	-	
S1	581986	309007	15.0	18.2	15.7	13.5	13.9	11.9	13.3	12.8	16.0	17.6	19.1	11.7	14.9	12.5	-	
S2	582008	308764	22.0			18.2	19.8	20.8	20.1	19.9	18.6	23.5	26.8	19.6	20.9	17.6	-	
S3	582095	308471	19.7	23.7	21.1	18.4	20.3	16.5	19.0	15.5	17.6	23.1	22.4	14.8	-	-	-	Triplicate Site with S3, S3a and S3b - Annual data provided for S3b only
S3a	582095	308471	18.7	24.0	22.4	18.7	19.6	15.8	18.1	15.5					-	-	-	Triplicate Site with S3, S3a and S3b - Annual data provided for S3b only
S3b	582095	308471	19.0	23.7	21.8	18.1	18.6	16.9	18.1	14.8					19.2	16.1	-	Triplicate Site with S3, S3a and S3b - Annual data provided for S3b only
S4	582058	308625	18.5	19.1	18.2	16.2		13.3	14.2	12.2	16.4	20.6	20.0	13.0	16.5	13.9	-	
S5	582075	308496	20.7	22.1	19.0	20.1	19.2	18.3	17.5	13.9	18.8	20.4	26.0	20.2	19.7	16.5	-	
S6	582048	308609	21.8	24.6	22.2	19.3	19.9	19.0	19.2	18.6	18.1	24.2	22.2	16.6	20.5	17.2	-	
S7	581995	309118	21.7	26.7	24.4	18.7			20.9				26.0	18.1	22.4	17.5	-	
S8	581979	309147	22.9	29.2	25.8	20.9	24.6	23.3	23.6	24.1	22.3	28.3	30.1	21.9	24.8	20.8	-	
S9	581965	309063	18.6	19.4	16.2	17.5	18.8	16.2	16.1	14.5	18.9	19.6	23.3	16.5	18.0	15.1	-	
S10	582007	309064	19.3	17.2	16.9	15.0	15.8	14.1	15.4	15.8	14.3	17.0	19.5	15.9	16.3	13.7	-	
S11	582082	308567	16.2			13.2	13.1	13.0	14.4	13.0	12.5	16.0	18.9		14.5	12.3	-	

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	Annual Mean: Distance Corrected to Nearest Exposure	Comment
S12	581978	309308	18.6	23.8	18.7	12.4	12.9	11.7			12.0	15.3	21.3	13.2	16.0	13.4	-	
S13	581991	309153	18.9	26.5	24.0	21.0	24.4	18.2	21.2	20.1	22.8		23.8	18.3	21.7	18.3	-	
S14	581989	309204	17.7	16.7	14.4	16.6	17.2	14.5	15.4	16.0	17.0	21.7	22.9	14.8	17.1	14.3	-	
T1	587126	283336	23.4	22.5	21.5		19.4	16.2	18.1	16.8	18.7	23.4	25.3	19.2	20.4	17.1	-	
T2	586846	282721	20.1	19.4	15.5	14.4	14.9	12.2	12.6	13.5	16.0	20.3	18.9	15.9	16.1	13.6	-	
T3	587036	284579	13.0	12.2	9.8	7.7	6.9	6.1	6.9	7.7	8.4	11.9	14.1	10.3	9.6	8.0	-	
W1	591572	300829	25.0	23.4	20.7	21.2						22.2	26.0	21.1	22.8	16.7	-	
W2	591885	300622	12.2	10.1	9.5	7.2	6.3	6.1	6.0	6.2	7.1	10.3	11.7	9.5	8.5	7.1	-	
20a	591315	288704	8.5	8.9		5.3	5.5	4.7	5.9	6.0	6.5	9.5	8.2	6.4	-	-	-	Triplicate Site with 20a, 20b and 20c - Annual data provided for 20c only
20b	591315	288704	8.8	8.7	6.9	5.3	5.4	4.8	5.8	5.6	6.3	9.3	8.5	7.1	-	-	-	Triplicate Site with 20a, 20b and 20c - Annual data provided for 20c only
20c	591315	288704	8.4	8.9	8.5	5.5	5.6	4.9	5.9	6.0	6.5	9.3		7.4	7.0	5.8	-	Triplicate Site with 20a, 20b and 20c - Annual data provided for 20c only
S30	582122	308282	10.7	9.6	8.5	6.4	6.8	5.0	5.8	5.7	7.5	10.5	11.6	7.3	7.9	6.7	-	

☒ 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.

☒ Breckland Council confirm that all 2024 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 Breckland Council During 2024

In 2024, the Environmental Protection and Enforcement department reviewed a number of planning applications. For example, the following planning applications were reviewed:

PL/2024/1047/FMAJ - this application is to erect 4 additional poultry houses on an existing farm where the total capacity of the expanded site will be 274, 800 birds, increasing the overall capacity on site by 80, 800 birds.

3 Discharge of Requirement for the Norfolk Vanguard Offshore Wind Farm Order 2022 / Norfolk Boreas were reviewed.

FUL/2022/0021 - discharge of condition application relating to sand and gravel extraction at Beetley.

3PL/2024/0394/O - Outline planning permission for demolition and phased development of residential units (up to 500 units uplift) including special care units and HMOs (Classes C3, C2 and C4) and up to 1,600 sq. metres of flexible floorspace for purposes within Class E (commercial, business and service), Class F1 (Learning and non-residential institutions), Class F2 (Local Community) and sui generis uses (laundrette and hot food takeaways); external alterations to existing properties; together with associated highway, engineering and landscape works.

3PL/2024/0701/H - construction of hotel, cafe, offices, industrial units, garages, parking, amenity, landscaping, simulation centre and infrastructure.

3SR/2024/0006/SCR – EIA required for 3no. Replacement Poultry Sheds

3PL/2022/0942/D - residential development of 100 dwellings in Attleborough

FUL/2023/0031 – Extension of East Bilney Quarry.

Additional Air Quality Works Undertaken by Breckland Council During 2024

No additional works were undertaken by Breckland Council in 2024.

QA/QC of Diffusion Tube Monitoring

Gradko International Ltd supply and analyse Breckland Council's diffusion tubes. The tubes were prepared using the 20% TEA in water preparation method.

Gradko International Ltd, a UKAS accredited laboratory, participate in the AIR-PT scheme for NO₂ diffusion tube analysis and Annual Field Intercomparison Exercise. These provide strict criteria relating to performance that participating laboratories must meet, thereby ensuring that the reported NO₂ concentrations are of a high calibre. For all observations during 2024, the precision of NO₂ diffusion tubes supplied by Gradko International Ltd was classified as 'good'. The precision is an indication of the laboratory's performance and consistency in the preparation, analysis and handling of the diffusion tubes.

During 2024, Breckland Council's diffusion tube monitoring was carried out in accordance with the 2024 Diffusion Tube Monitoring Calendar from June onwards⁷. The deployment dates of the diffusion tubes are detailed in the table below. Monthly data was processed using the DTDPT, which automatically adjusts data when Defra's exposure calendar is not followed.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Date diffusion tubes deployed	03/01	05/02	06/03	05/04	10/05	05/06	03/07	31/07	04/09	02/10	06/11	04/12
Date diffusion tubes collected	05/02	06/03	05/04	10/05	04/06	03/07	31/07	04/09	02/10	06/11	04/12	08/01

Diffusion Tube Annualisation

Annualisation was required at diffusion tube sites S7, S11 and W1, where data capture for 2024 was above 25% but below 75%. This was undertaken in line with LAQM.TG(22) using the DTDPT. Data from 3 background sites was obtained from the AURN network on UK-AIR10 for urban and rural background sites. Where possible, sites within 50 miles of

⁷ <https://laqm.defra.gov.uk/air-quality/air-quality-assessment/diffusion-tube-monitoring-calendar/>

the diffusion tubes were selected. However only East Wretham and Wicken Fen met the criteria for NO₂ in 2023 as the data capture for Norwich Lakenfields was below 85%, therefore the next closest sites were selected.

Table C.1 – Annualisation Summary (concentrations presented in µg/m³)

Site ID	Annualisati on Factor Wicken Fen	Annualisati on Factor East Wretham	Annualisati on Factor South Holland – Westmere School	Average Annualisati on Factor	Raw Data Annual Mean	Annualised Annual Mean
S7	0.9011	0.9988	0.9008	0.9336	22.4	20.9
S11	1.0144	0.9999	1.0353	1.0165	14.5	14.7
W1	0.8441	0.9367	0.8376	0.8728	22.8	19.9

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/NO₂ continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Breckland Council have applied a national bias adjustment factor of 0.84 to the 2024 monitoring data. A summary of bias adjustment factors used by Breckland Council over the past five years is presented in

Table C.2. Table

Table C.2 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	National	06/25	0.84
2023	National	06/24	0.81
2022	National	03/23	0.83
2021	Local	-	0.84
2020	Local	-	0.81

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.

No diffusion tube NO₂ monitoring locations within Breckland Council required distance correction during 2024.

QA/QC of Automatic Monitoring

Within Breckland Council, there is one automatic monitoring site(BRE01). Breckland Council officers are the Local Site Operators (LSO) for this site and carry out calibrations monthly. BRE01 is audited and Quality Assurance/Quality Control (QA/QC) by Ricardo Energy and Environment (Ricardo). The Engineer Support Unit (ESU) for this site is Matts Monitors Air Monitoring Systems.

The 2024 data was marked as 'ratified' at the time of writing this report. All live and historic data is available through the Air Quality in England website, available at

<https://www.airqualityengland.co.uk/>.

Automatic Data Annualisation

Table C.3 – Automatic NO₂ Annualisation Summary (concentrations presented in µg/m³)

Background Site	Annual Data Capture (%)	Annual Mean (A _m)	BRE02	
			Period Mean (P _m)	Ratio (A _m / P _m)
South Holland - Westmere School	95.4	9.7	11.9	0.815
Wicken Fen	95.7	4.9	4.7	1.043
East Wretham	98.5	7.0	6.1	1.148
Average (R _a)			1.002	
Raw Data Annual Mean (M)			16.0	
Annualised Annual Mean (M x R _a)			16.0	

PM₁₀ and PM_{2.5} Monitoring Adjustment

PM₁₀ monitoring is carried out by a TEOM1400AB analyser. As stated in LAQM. TG(22) Chapter 7, the PM₁₀ TEOM1400AB can be used by local authorities after correction by the Volatile Correction Model (VCM). This method adds the 1.87 times the volatile fraction as measured by remote FDMSs to the TEOM data in order to correct for the underestimation of PM concentrations by the TEOM. This process is carried out by QA/QC processes, not by Breckland Council. Annualisation of PM₁₀ automatic data was not required in 2024.

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, automatic annual mean NO₂ concentrations corrected for distance are presented in Table A.3.

No automatic NO₂ monitoring locations within Breckland Council required distance correction during 2024.

Appendix D: Maps of Monitoring Locations

Figure D.1 – Map of Monitoring Locations in Breckland

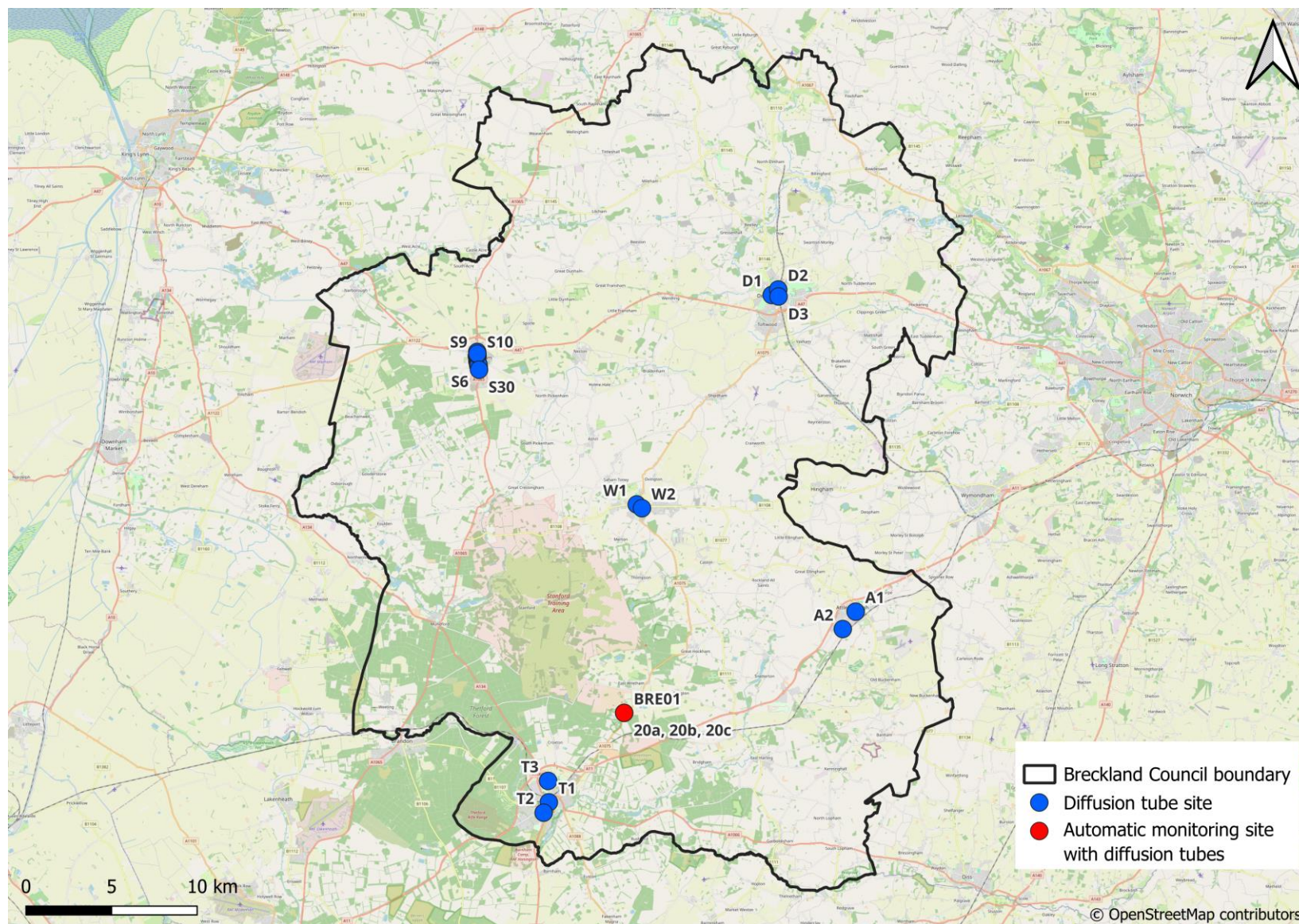


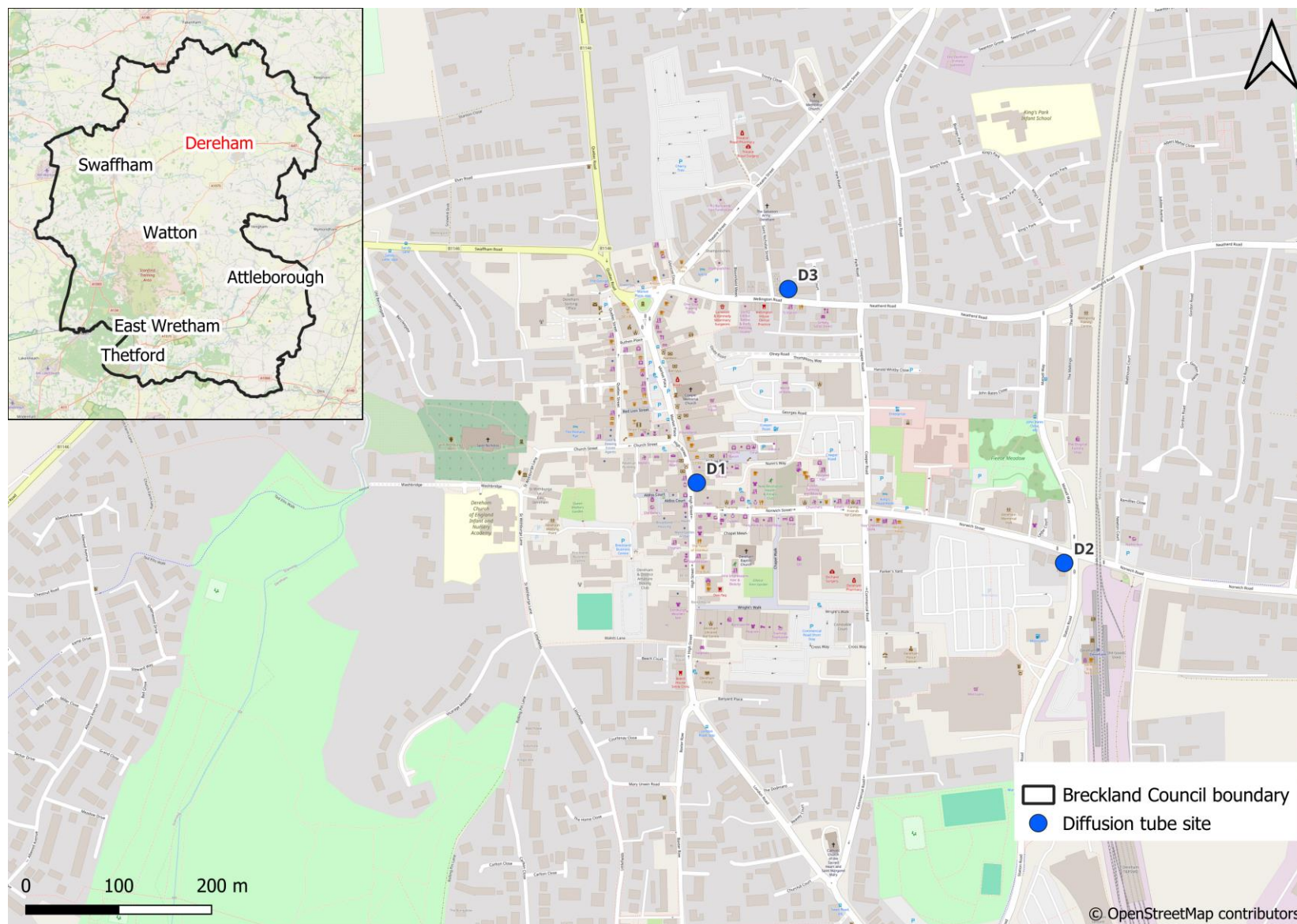
Figure D.2 – Map of Monitoring Locations in Dereham

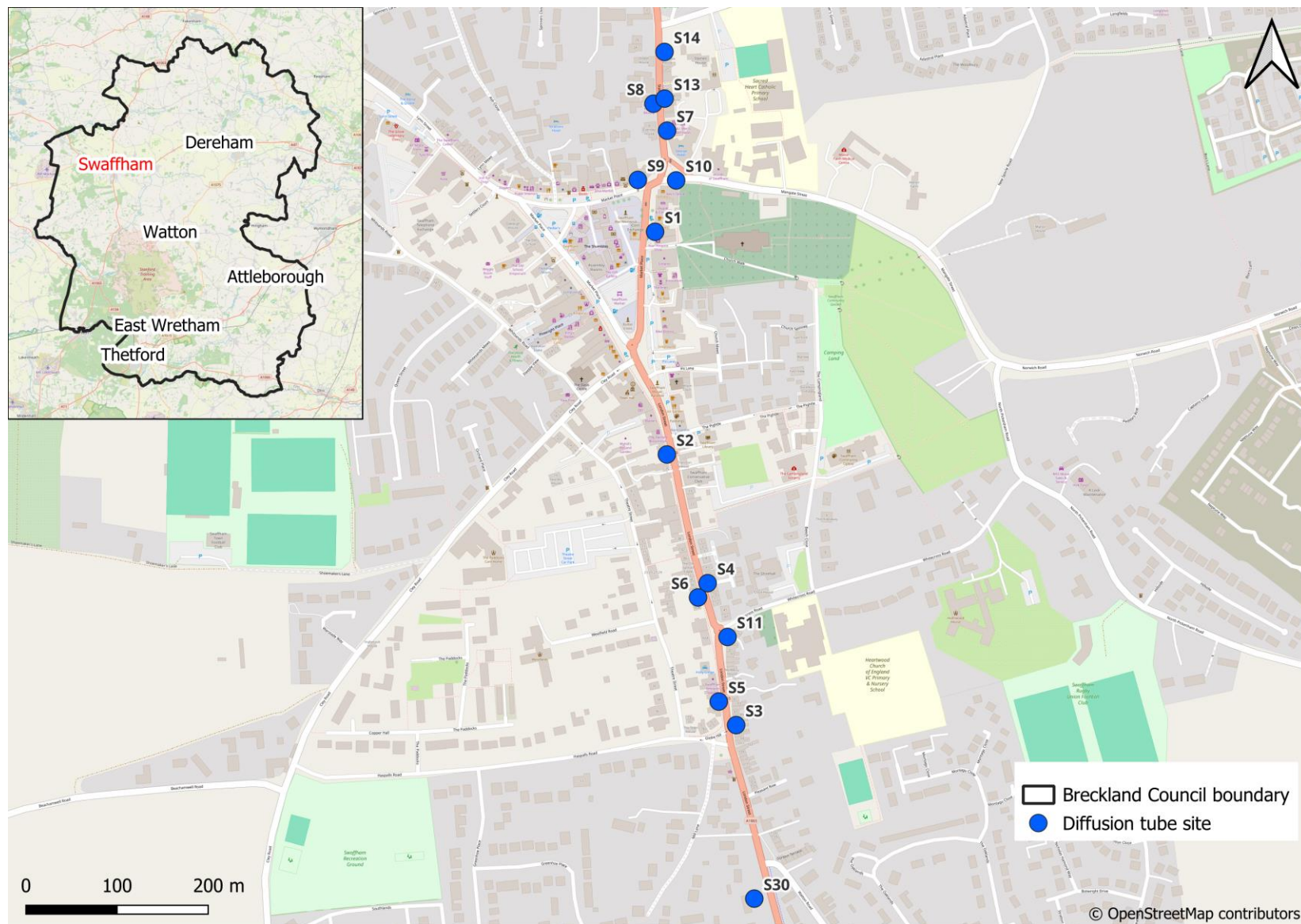
Figure D.3 – Map of Monitoring Locations in Swaffham

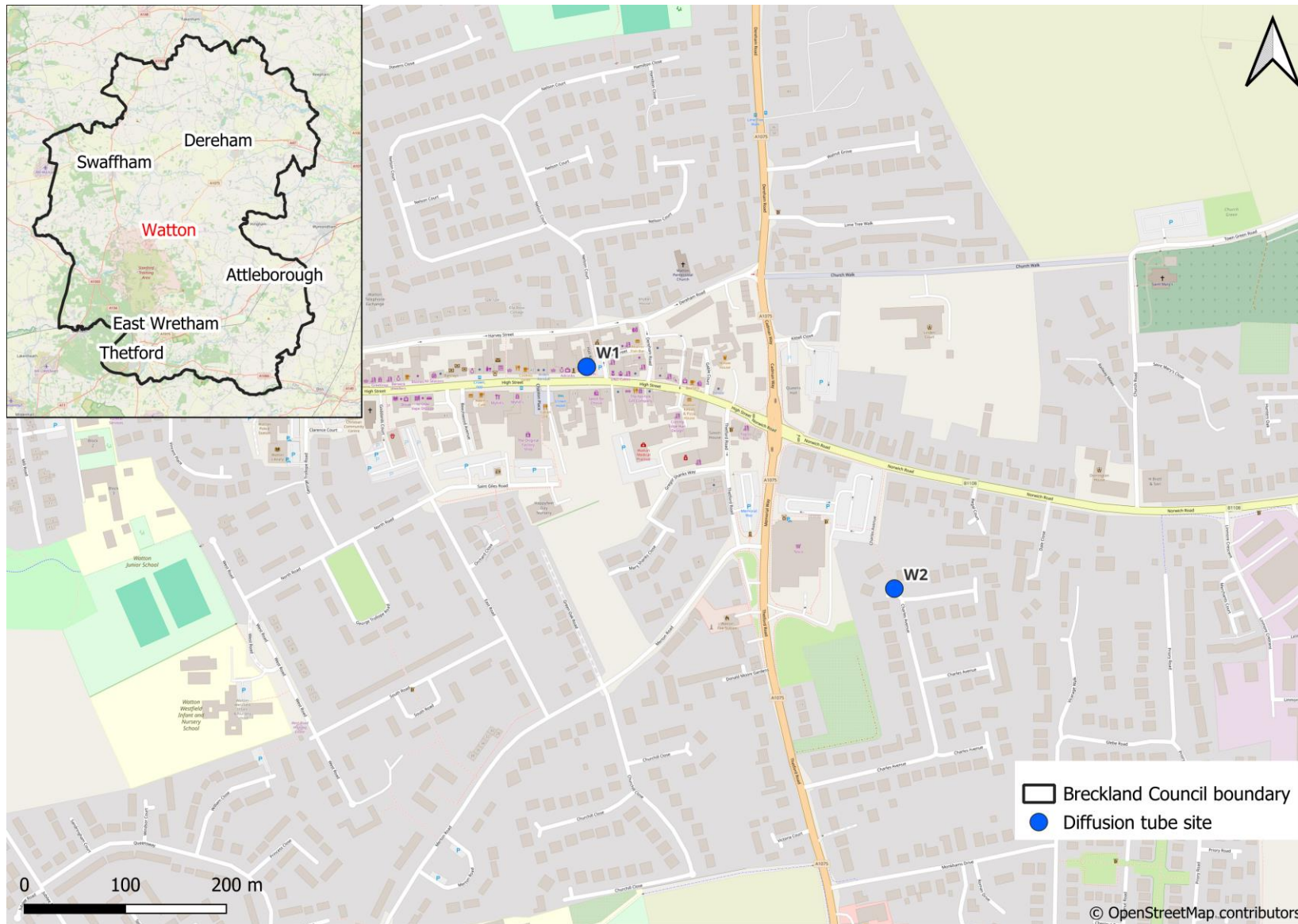
Figure D.4 – Map of Monitoring Locations in Watton

Figure D.5 – Map of Monitoring Locations in Attleborough

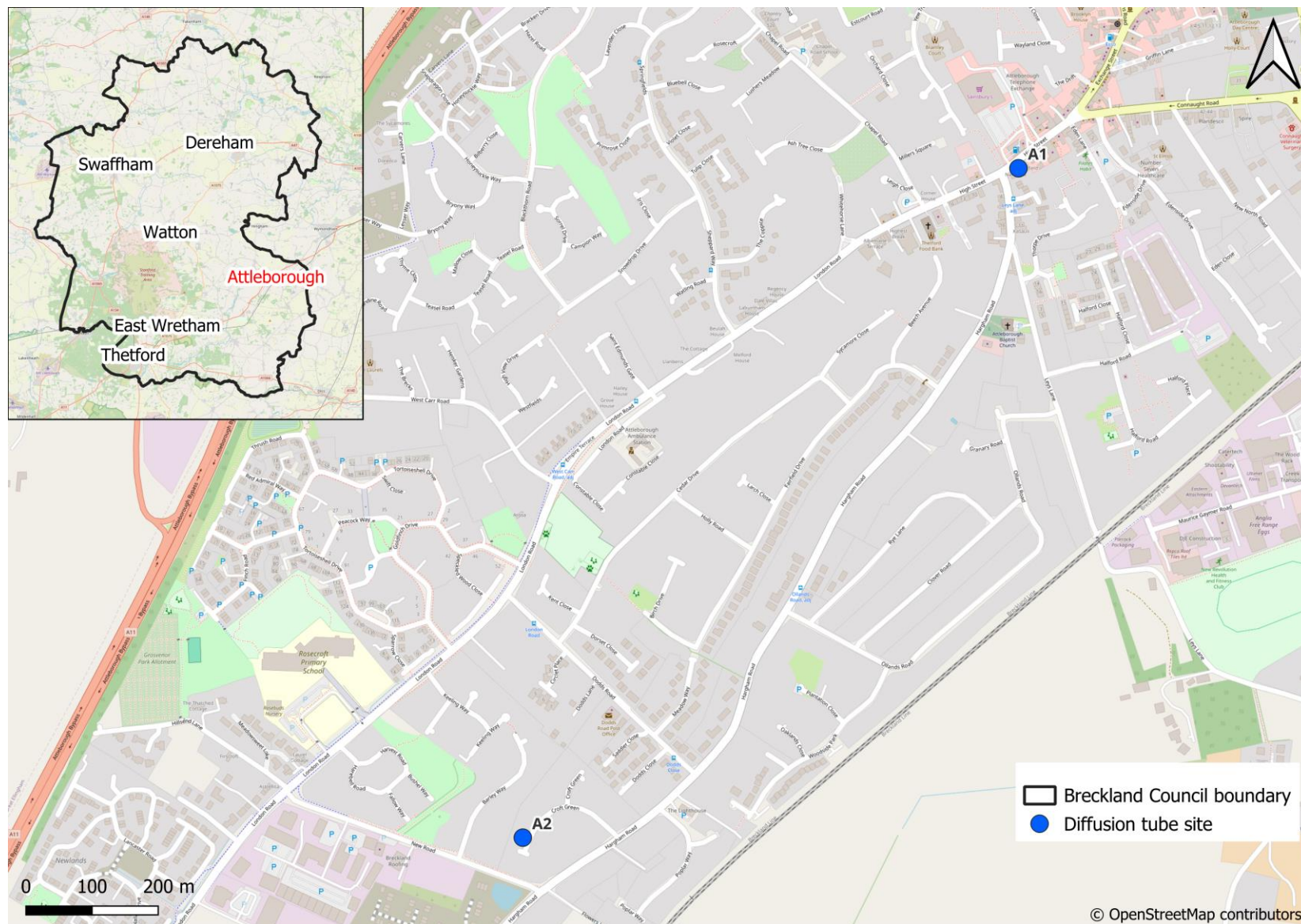


Figure D.6 – Map of Monitoring Locations in Thetford

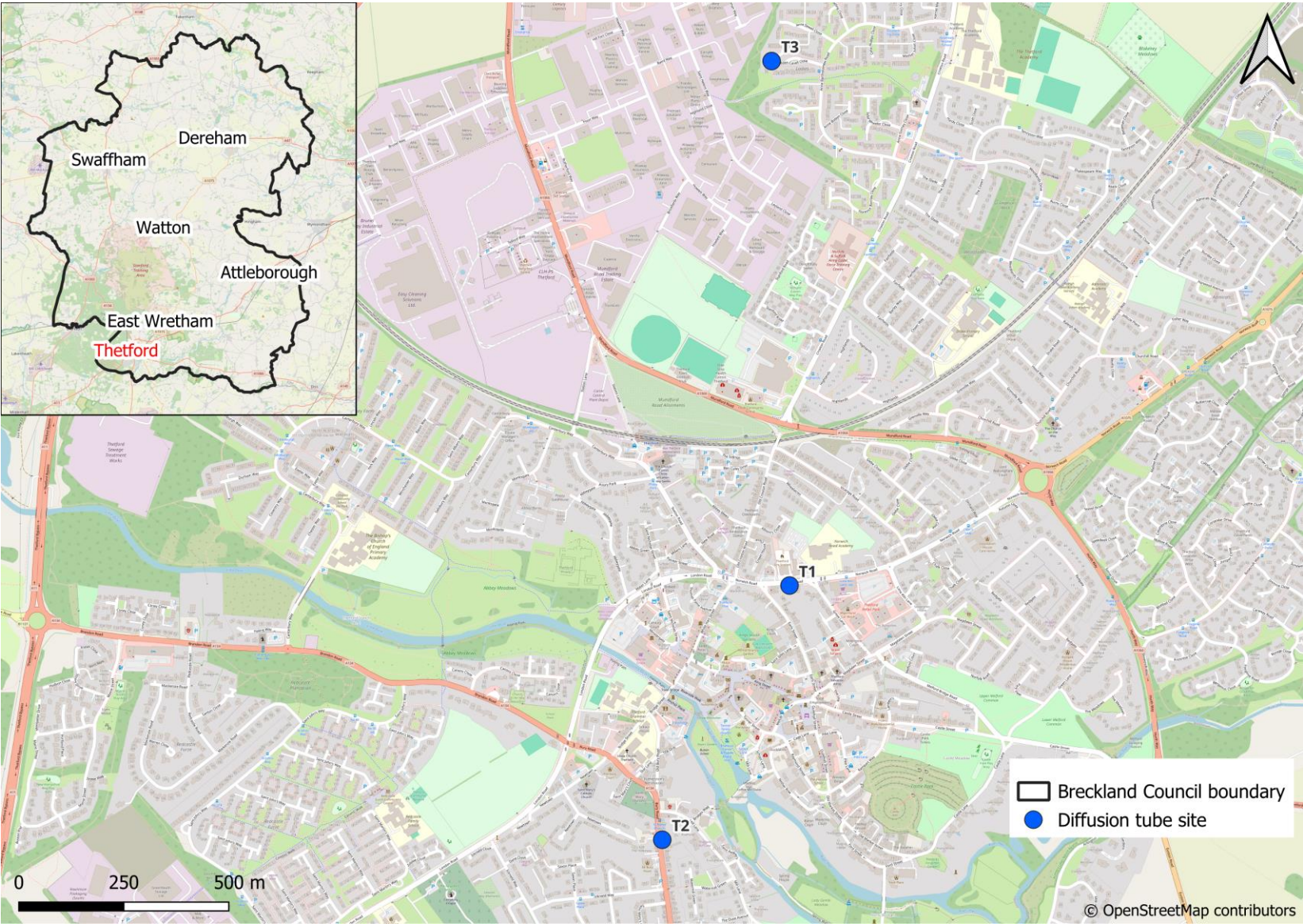
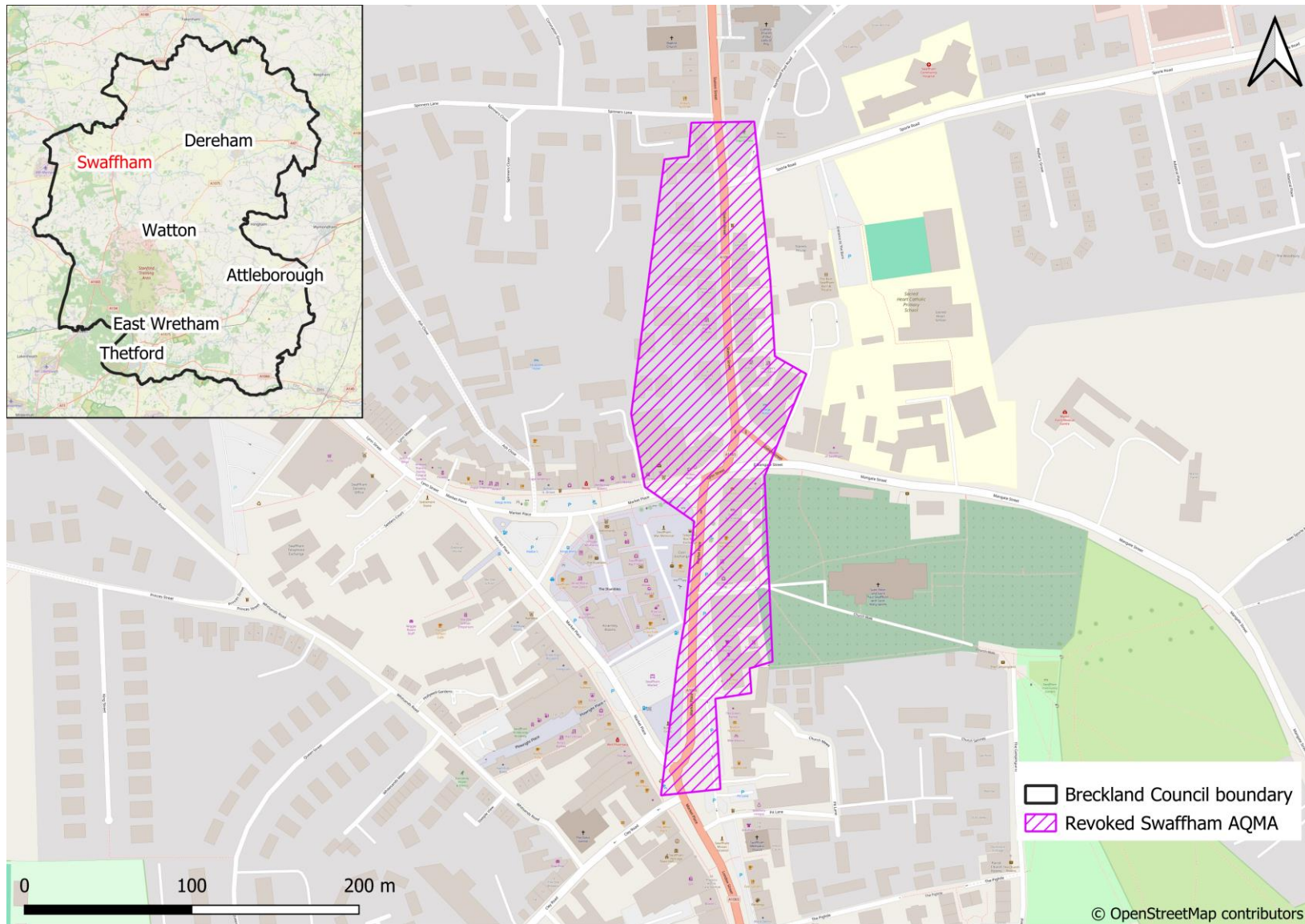


Figure D.7 – Map of Monitoring Locations in East Wretham SSSI



Figure D.8 – Map of Now Revoked AQMA in Swaffham



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England⁸

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

⁸ The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

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. 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.
- 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.