



Swale Borough Council **2022 Annual Status Report**

Bureau Veritas



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2022 Air Quality Annual Status Report (ASR)

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

Date: June, 2022

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Executive Summary: Air Quality in Our Area

Air Quality in Swale Borough Council

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children, the elderly, and those with existing heart and lung conditions. There is also often a strong correlation with equalities issues because areas with poor air quality are also often less affluent areas^{1,2}.

The mortality burden of air pollution within the UK is equivalent to 28,000 to 36,000 deaths at typical ages³, with a total estimated healthcare cost to the NHS and social care of £157 million in 2017⁴.

Swale Borough Council is committed to improving air quality, specifically to reduce exposure to its residents and to improve and protect the health and amenity of current and future generations. To this end, we have developed actions and measures which can be categorised under the following topics:

- Emission reductions from Heavy Goods Vehicle (HGV) fleets;
- Volume reductions in the HGV fleet, particularly those using the A2;
- Reducing congested traffic flows of all vehicles through the AQMAs;
- Approval of policies that encourage only low emission developments;
- Encourage alternative modes to car use to reduce congestion and pollution;
- Initiatives that inform and protect local residents; and
- Access to cleaner alternative transport for residents and businesses.

As a direct result of Swale Borough Council's extensive air quality monitoring, six Air Quality Management Areas (AQMAs) have been identified and declared to date. These AQMAs are

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

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

³ Defra. Air quality appraisal: damage cost guidance, July 2021

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

located where the levels of air pollution, specifically nitrogen dioxide (NO₂), has historically exceeded the UK's air quality objectives. In addition, St Paul's Street AQMA was amended in 2020 for exceedances of the 24-hour mean objective for particulate matter 10 (PM₁₀ size fraction). The six AQMA's currently within Swale Borough Council are shown in Table 2.1.

AQMA's 1, 2/6, 3, 5 and 7 are situated on the A2 which is a major transport corridor through Swale, with AQMA 4 located within Sittingbourne urban center.

Swale Borough Council has an extensive monitoring network for NO₂ and particulate matter (PM). Throughout 2021, this included measurements by automatic analysers at three locations and passive monitoring tubes at 78 locations. Triplicate passive monitoring sites at four locations are positioned strategically to increase the accuracy of our monitoring data. Within 2021, 11 new passive monitoring sites were deployed, and the addition of one new automatic monitoring station in Newington (07/04/2021) for all 3 pollutants.

NO₂ concentrations measured by three automatic monitoring stations remained below the annual objective mean concentration in 2021. ZW3 (Swale Ospringe Roadside) and 8 (St Paul's Street) reported decreases compared to 2020, by 6% and 3%, respectively. ZW10, on the station's first year of monitoring, had to be annualised due to having insufficient data capture but recorded concentrations well below the AQS objective. Further to this, there were no exceedances of the hourly mean objective at the three sites in 2021, for the fourth consecutive year at ZW8 (AQMA 4 – St Paul's Street) and ZW3 (AQMA 6 – Swale Ospringe Street).

During 2021, all passive monitoring sites reported compliance against the annual mean AQS objective for NO₂, with only one site reporting concentrations within 10% of the AQS objective at SW124. This is the second year that there has been full compliance at all passive monitoring locations across Swale. Despite this, there has been a 10% increase in concentrations across the overall network from 2021. The impact of COVID-19 in 2020 caused a 29% reduction (the decreases ranged across the diffusion tube network from 17% to 38%) in passive monitored concentration, due to government restrictions on travel, disrupting usual traffic volumes. 2021 monitoring more readily represents pre-pandemic traffic volumes, therefore likely explaining the increase across 42 passive monitoring sites.

The addition of the Newington 4 station (ZW10) added a new monitor for PM₁₀ and PM_{2.5}, during 2021, it recorded concentrations well below the annual mean AQS objective for PM₁₀ of 40µg/m³. Additionally, the remaining 2 automatic monitors also recorded concentrations below the annual mean AQS objective. ZW3 (Ospringe Street), has been compliant for 5 years and ZW8 (St Paul's Street) for 3 years.

Despite compliance for 3 years at ZW8 in AQMA No.4 for annual mean concentrations of PM₁₀, exceedance of the 24-hour mean AQS objective for PM₁₀ (50µg/m³, not to be exceeded more than 35 times per year) has not been compliant for the last 3 years, with both 2020 and 2021 exceeding the 50µg/m³ limit 59 times. The concentrations at the remaining two monitors do not exceed the 24-mean limit for PM₁₀.

PM_{2.5} monitoring in 2021 is below the PM_{2.5} annual mean AQS objective at both automatic monitoring sites ZW3 and ZW10.

Swale Borough Council considered revoking both AQMA No.3 (East Street) and AQMA No.5 (Teynham) in 2020, but further data was required to aid decision making due to COVID - 19. Monitoring data for 2021 reports compliance at AQMA No.5, which now supports the revocation of AQMA No.5, since concentrations have been below the limit for the past 5 years. NO₂ concentrations have shown a consistent decline year by year, with the maximum concentration within AQMA No.5 in 2021 at 25.3µg/m³. Although compliance to the NO₂ AQS objective is reported in 2021, AQMA No.3 passive monitoring stations show an increase from 2021, therefore, consideration of revoking this AQMA should be delayed until monitoring suggests stable concentrations.

Swale Borough Council manages the network through monitoring, auditing, and implementing measures as part of the Air Quality Action Plan (AQAP). They continue to use their extensive passive monitoring network to report widespread pollution, also adding stations where concentrations are deemed to be a risk.

Swale Borough Council continues to work with our partners through the Kent and Medway Air Quality Partnership Group which includes regular engagement from group members. Kent County Council and Public Health England representatives also attend and contribute to meetings.

Actions to Improve Air Quality

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

The 2019 Clean Air Strategy⁵ sets out the case for action, with goals to reduce exposure to harmful pollutants. The Road to Zero⁶ sets out the approach to reduce exhaust emissions from road transport through a number of mechanisms; this is extremely important given that the majority of AQMAs are designated due to elevated concentrations heavily influenced by transport emissions.

The main source of air pollution within Swale Borough Council is from road traffic emissions, relating to both NO₂ and particulate matter concentrations. Measures currently implemented are developed to improve local air quality, focused on reducing emissions from road traffic.

The unified AQAP developed in 2019, which considered measures more strategically as well as measures specific to individual AQMAs, is being continually developed to ensure measures are updated. In November 2019, Swale Borough Council adopted a new Air Quality and Planning Technical Guidance Document to ensure that air quality continues to be a material consideration in planning decisions, making certain that air quality impacts from increased road traffic and particulate emissions resulting from new development are appropriately mitigated. To support this, a new Air Quality Policy was created in 2020 to be included in Regulation 19/Pre-Submission Local Plan Review Document. Consultation will take place February to April 2021.

Within 2021 SWECO UK Ltd was commissioned by Swale Borough Council to undertake an Automatic Number Plate Recognition (ANPR) survey at three locations to determine Vehicle Origin Destination (OD) movement and source apportionment analysis. The findings of this survey supported the identification of potential mitigation measures within the St Paul's Street AQMA No.4.

The results of the ANPR survey have identified that there is a high number of single trips passing through the St Paul's AQMA and not returning. There were around 54.9% of vehicles that travelled Eastbound through the AQMA but did not return. These trips could have used other potential routes, such as Morrison's, Milton Road, or Crown Quay Lane where there were no ANPR sites.

In line with concerns raised by the Swale Borough Council, the analysis of the data from the ANPR study and the dispersion modelling results suggests that the elevated levels of PM₁₀

⁵ Defra. Clean Air Strategy, 2019

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

measured within the AQMA may not be due to road transport emissions in isolation but may be due to emissions from other sources. However, there is also the potential that the increased levels of particulates could be as a result of the entrainment effect from the buildings which surround the analyser. Meaning that particulates do not disperse and remain captured within this given rise to secondary chemical reactions and elevated PM concentrations.

The results of the ANPR survey and air quality source apportionment analysis have identified a number of mitigation measures including incentivising electric vehicle charging and ownership, the creation of a distribution hub to positively impact the St Paul's' Air Quality Management Area (AQMA) and effective traffic management throughout the AQMA.

Further analysis was completed to consider the relationships between pollutants at similar roadside sites. Typically, at roadside locations where road traffic is the key source of pollutant emissions on top of existing background annual mean NO₂ recorded at these sites is typically higher than the PM₁₀ at the same site. However, the measurement data at St Paul's Street (ZW8) has shown a unique relationship between the two pollutants with PM₁₀ concentrations measuring significantly higher than NO₂. This high-level analysis could indicate that there may be an entrainment effect due to the proximity of the buildings around the monitoring site or that there may be another source of particulates affecting the analyser.

There is an ongoing partnership working between Swale Borough Council departments and we will continue to work with all stakeholders throughout 2021 to provide information to the general public, improving air quality across Swale.

Conclusions and Priorities

During 2021, Swale Borough Council's passive monitoring network reported compliance against the NO₂ AQS objectives, across all monitoring locations. However, an overall increase in concentrations from 2020 was reported. This is likely due to the impact COVID – 19 had on traffic volumes, whereby in 2020 there was a significant decrease in road and vehicle use nationally, in particular in urban areas. Despite this, concentrations remain well below 40µg/m³. The St Paul's area is still an area of concern, with the automatic monitoring station recording an increase in PM₁₀ from 2020, coupled with 24-hour mean exceedance two years in a row, reporting 59 exceedances of the 50µg/m³ mean. Swale Borough Council continue to use their extensive monitoring network to identify areas of pollution and to ensure relevant measures are being developed.

Swale's key priorities are to develop measures which deliver compliance of air quality objectives through a combination of strategic and local focused AQMA measures. We have identified measures which target reductions in emissions from vehicle fleets (HGV, LGV and cars), smooth traffic flows and reduce congestion and protect local communities. There will be an amendment to the AQAP to include targeted measures to reduce PM at St Paul's Street.

Swale Borough Council have developed a new AQAP spanning from 2018 – 2022⁷, alongside reported an air quality planning technical guide⁸. The following actions are considered to be key priorities in ensuring the air quality conditions within Swale continue to comply with the AQS objectives:

- Develop AQAP options which focus on key emissions reduction measures from the HGV and LGV fleet travelling through the AQMA's;
- Evaluation of St Paul's Street, to include and implement strategies to directly reduce PM₁₀ concentrations; and
- To engage with Kent County Council regarding delivery of measures, from the Clean Air Feasibility Study.

⁷https://services.swale.gov.uk/meetings/documents/s11020/Appendix%20I%20AQAP_SwaleBC_2018%20nv%202.pdf

⁸ https://services.swale.gov.uk/assets/Air-Quality/AQPT%20Guidance_2021_final%20xA.pdf

Local Engagement and How to get Involved

Swale Borough Council cannot achieve air quality improvements alone. Continuation to work with all stakeholders throughout 2021 onwards and provide information to the general public is necessary. The following bullets provide more information:

- Residents can stay informed by visiting the Kent Air website (<http://www.kentair.org.uk/>) to learn more about air pollution and local air quality or contact the Environmental Protection Team on 01622 602460 or ehadmin@midkent.gov.uk or <https://swale.gov.uk/bins-littering-and-the-environment/air-quality>
- Canterbury City Council and the Mid Kent Environmental Health Partnership have created the free interactive website called '[Pollution Patrol](#)' through 2021 Defra funding.
 - Pollution Patrol is a free interactive website for primary schools, children and their families developed to help raise awareness of air pollution, the damage it can cause and ways that individuals can help to reduce their impact by changing behaviours. The website includes games, an immersive 360° story mode, curriculum-linked teaching resources and a school assembly plan amongst other elements.
 - Pollution Patrol will be officially launched April 2022 across Kent and Medway.
- SBC have set up a Green Schools Forum with the first meeting with Swale schools starting February 2022
 - Through the forum SBC can raise awareness and promote active travel. The forum provides a platform to engage with schools in relation to KCC Smarter Travel scheme which helps schools optimise their travel plans and Swale's Clean Air for Schools initiative.

Swale Borough Council continues to engage with stakeholders and working groups:

- Bus operators and attending the Quality Bus Partnership (QBP) group.
- SBC have continued to engage with schools, parish councils and members regarding anti idling hot spots. We have also continued press releases re anti idling which has resulted in the public advising us of locations.
- Kent and Medway Air Quality Partnership Group provides a platform to share information and provide update on priorities. Partners includes Kent local authorities and KCC, with guests in academia and Public Health England. Kent local authorities

and Medway Council have been working together to integrate air quality data and information exchange for many years, including the provision of a website <http://www.kentair.org.uk/> to disseminate the data to all. The website is used by many people for the purposes outlined below:

- For use by local authority staff and County for local air quality management work;
- For consultants to enable detailed air quality assessments and modelling to be undertaken; and
- For educational institutions to support research and for public health including forecast and alerts.

Local Responsibilities and Commitment

This ASR was prepared by Bureau Veritas for Swale Borough Council with the support and agreement of the following officers and departments:

This ASR has been approved by:

Kelly Shew – Mid Kent GIS Team

Timings preclude our ASRs being approved by Councillors prior to submission to DEFRA as it didn't fit into the committee cycle for when the template and data was available.

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

If you have any comments on this ASR please send them to Clare Lydon at:

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1 Local Air Quality Management

This report provides an overview of air quality in Swale Borough Council during 2021. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by Swale Borough Council to improve air quality and any progress that has been made.

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

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

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

A summary of AQMA declared by Swale Borough Council can be found in Table 2.1. The table presents a description of the six AQMA that are currently designated within Swale Borough Council. Appendix D: Map(s) of Monitoring Locations and AQMA provides maps of AQMA and also the air quality monitoring locations in relation to the AQMA. The air quality objectives pertinent to the current AQMA designations are as follows:

- NO₂ annual mean; and
- PM₁₀ 24-hour mean.

We propose to revoke AQMA 5: Teynham (A2 / London Road) (see monitoring/additional section).

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by National Highways?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Name and Date of AQAP Publication	Web Link to AQAP
AQMA 1: Newington (A2 / High Street)	Declared 2009	NO ₂ Annual Mean	An area encompassing those parts of London Road and High Street, Newington where the speed limit is 30mph.	No	50µg/m ³	32µg/m ³	Strategic AQAP 2019	https://services.swale.gov.uk/assets/Air-Quality/AQAP_SwaleBC_2018%20final.pdf
AQMA 2/6: Ospringe Street, Faversham (A2 / Ospringe)	Declared as AQMA 2 in 2011, extended in 2016, consolidated As AQMA 6 in 2017	NO ₂ Annual Mean	Area incorporating all of Ospringe Street near Faversham.	No	48µg/m ³	34µg/m ³	Strategic AQAP 2019	https://services.swale.gov.uk/assets/Air-Quality/AQAP_SwaleBC_2018%20final.pdf
AQMA 3: East Street, Sittingbourne (A2 / Canterbury Road)	Declared 2013	NO ₂ Annual Mean	Area incorporating East Street, Sittingbourne.	No	41µg/m ³	28µg/m ³	Strategic AQAP 2019	https://services.swale.gov.uk/assets/Air-Quality/AQAP_SwaleBC_2018%20final.pdf
AQMA 4: St Paul's Street, Milton, Sittingbourne (B2006)	NO ₂ Declared 2013 PM ₁₀ declared 2020	NO ₂ Annual Mean PM ₁₀ Daily	Area incorporating St Paul's Street, Sittingbourne.	No	62µg/m ³ 42 Exceedances of 50µg/m ³	32µg/m ³ 59 Exceedances of 50µg/m ³	Strategic AQAP 2019	https://services.swale.gov.uk/assets/Air-Quality/AQAP_SwaleBC_2018%20final.pdf
AQMA 5: Teynham (A2 / London Road)	Declared 2015	NO ₂ Annual Mean	A2 London Teynham.	No	39µg/m ³	26µg/m ³	Strategic AQAP 2019	https://services.swale.gov.uk/assets/Air-Quality/AQAP_SwaleBC_2018%20final.pdf
AQMA No7 Keycol Hill	Declared 2020	NO ₂ Annual Mean	Area incorporates the area of Keycol Hill, Sittingbourne.	No	36µg/m ³	36µg/m ³	Strategic AQAP 2019	https://services.swale.gov.uk/assets/Air-Quality/AQAP_SwaleBC_2018%20final.pdf

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

☒ Swale Borough Council confirm that all current AQAPs have been submitted to Defra.

2.2 Progress and Impact of Measures to address Air Quality in Swale Borough Council

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

- *"The Council have previously considered revoking their AQMAs 3 and 5. However, given monitoring results from 2020 are likely to be anomalous due to the COVID-19 pandemic and associated travel restrictions, the Council have decided to continue monitoring for another year. This decision is supported.*
- *Despite limitations imposed by the COVID-19 pandemic, the Council made good progress on various measures from their recently adopted AQAP. This demonstrated the Council's commitment to improving air quality within the Borough and is encouraged to continue into the future, with further updates in the next ASR.*
- *The Council have conducted an investigation into exceedance in the daily mean objective for PM₁₀ within AQMA 4, along with applying for funding in 2020 to further research into this. This is encouraging to see, and the 2022 ASR should provide an update on this work.*
- *The Public Health Outcomes Frameworks was mentioned. The Council have not only referred specifically to indicator D01, which is the fraction of mortality attributable to particulate air pollution, but also have tracked its change over time. This is welcomed.*
- *The Council have grouped their reporting of diffusion tube data in tables and graphs by area. This allows for easy interpretation and provides a good source of information for the reader.*
- *Robust and accurate QA/QC procedures were applied, with sufficient justification and discussion provided.*
- *There are some mistakes with reporting of data within the report. Whilst largely minor, these can be a source of confusion. The Council should ensure the data is checked thoroughly. The mistakes noted are:*
 - *Table 2.1 does not include the pollutant information for AQMA 3.*
 - *Exceedances of relevant air quality objectives should be bolded; this includes historical data in Table A.4.*

- *The Executive Summary states there are 73 diffusion tube monitoring locations, whilst the text on page 18 in Section 3 states there are 72. The tables show 72 diffusion tube locations.*
- *There are some inconsistencies with the calculation of data capture. For example, diffusion tube SW145 shows a data capture for monitoring period of 40% and data capture for 2020 of 92%. The data capture for monitoring period should only deviate where monitoring was carried out for part of the year, and thus cannot be less than the data capture for 2020.*
- *Overall, the report is detailed, concise and satisfies the criteria of relevant standards. The Council should continue their good and thorough work.”*

Swale Borough Council has taken forward a number of direct measures during the current reporting year of 2021 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. Twenty-one measures are included within Table 2.2, with the type of measure and the progress Swale Borough Council have made during the reporting year of 2021 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within.

More detail on these measures can be found in their respective [Action Plans](#). Key completed measures are:

Progress has been made in 2021 as described in the comments and implementation column in Table 2.2. Swale Borough Council expects the following measures to be completed over the course of the next reporting year:

- To progress with the HGV ‘Clear Air Corridor’ and report back to the Cabinet by 2022;
- Clean Air Zone Feasibility study – Engage with KCC regarding delivery of preferred options and if these can be supported by KCC;
- Anti-idling campaign - Continue work on the campaign and assess new hot spot locations within the district;
- Dissemination and promotion the Pollution Patrol digital resource aimed at children aged 5-11 (and their parents) about air pollution. The aim being to educate, raise awareness and promote behaviour change;
- Continue to engage with schools through Swale's Green School Forum;

- Complete source appointment report at St Paul's Street and review recommendations to assist the authority to correctly target the most important sources, and to focus the principal measures within the AQAP for NO₂ and PM;
- The local plan and transport strategy is a major development which incorporates promoting active travel through new (and existing) development, to include clean-air walking and cycle ways clean-air travel planning;
- Local Cycling and Walking Infrastructure Plans (LCWIP) Scoping Report to be completed;
- Support the setup of a Car club and EV bike hire trial in Faversham;
- Continue to promote the Kent Revs Scheme for local businesses to trial EV vans;
- Promote and raise awareness KentAir website - Joint working through the Kent and Medway Partnership Air Quality communications sub group; and
- Finalise Swale's EV Strategy

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1	HGV "Clear Air Corridor"	Promoting Low Emission Transport	Clean Air Zone (CAZ)	2020	2022	KCC / SBC	Joint bids with KCC	NA	No funding source at present	15 to 118 million	Implementation phase	Lower NO _x and PM ₁₀ emissions	Reduction in pre-Euro VI HGV	Clean Air Zone feasibility study and options appraisal completed.	SBC have set up high-level officer meetings to discuss support of KCC to advance the non-charging CAZ priority measures. To report back to Cabinet with an update by 2022.
2	Air Quality and Low Emission Strategy	Policy Guidance and Development Control	Low Emissions Strategy	2022	Ongoing	SBC	Joint bids with KCC	NA	No funding source at present	NA	Implementation phase	Lower NO _x and PM ₁₀ emissions	Development of LES	Other related strategies have been created under this measure. EV Strategy is being developed. This will be presented for public consultation in March 2022.	<ul style="list-style-type: none"> Local Plan Transport Strategy drafted and out for consultation late 2021. Progress made on the Cycling and Walking Guidance Statement 2018-2022. Progress made on The Linking Coast to Downs project to confirm new walking and cycling routes in Sheppey and Faversham. New trails and maps being produced and advertised to residents. SBC is planning to appoint an active travel coordinator to develop an LCWIP in Sittingbourne & Sheerness – use Local Cycling and Walking Infrastructure Plans (LCWIPs) across borough used to apply for infrastructure funding. Kent and Medway Energy and Low Emissions Strategy: Implementation Plan 2020-2023 is active. SBC continues to work with KCC via the Climate Change Network and KMAQN. KCC source/ Kent Realising Electric Vans Scheme (Kent REVS) The scheme ends in Feb 2023 The scheme loans electric vans to businesses around Kent, giving them the opportunity to trial the vehicles and see if making the switch will work for their business. 20 Swale businesses have taken up EV REVS via the trial.
3	Development of Air Quality standards within new Local Plan	Policy Guidance and Development Control	Low Emissions Strategy	2020	Ongoing	SBC	S106 contributions	NA	NA	NA	Implementation phase	Unquantifiable	Air Quality standards to reduce district-wide emissions	New AQ Policy included in Regulation 19/Pre-Submission Local Plan Review Document. Consultation took place between February to April 2021.	<ul style="list-style-type: none"> The Local Plan Review 2021 Pre-Submission Document includes an Air Quality Policy The Swale Borough Council Parking Standards SPD includes requirements for Parking for Ultra Low Emission Vehicles with the objective of improving air quality. The Standard Parking measures for Ultra Low Emission Vehicles and Low NO_x boilers are incorporated into the recommended standard measures within the Air Quality and Planning Technical Guidance document.

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4	"Clear Air Corridor" signage and information scheme"	Freight and Delivery Management	Non charging Clean Air Zone (CAZ)	2020	2022	KCC	Part of measure 1					Part of measure 1.	Reduction in pre-Euro VI HGV	Part of measure 1.	Part of measure 1.
5	KCC development control policies	Policy Guidance and Development Control	Low Emissions Strategy	2021	On-going	KCC	NA	NA	NA	NA	Implementation phase	Unquantifiable	Controlled parking allowances for developments	In progress	We anticipate new Standards being published as part of KCC's update to the Kent Design Guide which is currently in progress.
6	Swale Freight Management Plan (2016)	Freight and Delivery Management	Delivery and Service plans	2016	On going	KCC	S106 contributions and joint bids with KCC	NA	NA	NA	Planning Phase for Transport Strategy	Unquantifiable, contributes to measure 1	Engagement with operator and links with Transport Strategy	Continued engagement with and support for the FREIGHT Plan	Local Plan Transport Strategy drafted and out for consultation late 2021.
7	Air pollution alerts and information	Public information	Via other mechanisms	2018	On-going	SBC	SBC budget for website and data management	Split between districts for AQ grant money	Fully funded	NA	Active	Lower NO _x and PM ₁₀ emissions	Number of (vulnerable) people using the alert service in Swale	KentAir website has free air pollution alerts and information. Emails are issued whenever air quality is forecast to be Moderate or above for the following day. The email includes Defra's recommended actions and health advice. There are currently 336 registered users for the email service.	<ul style="list-style-type: none"> Kent and Medway Air Quality Partnership Group now have a new website managed by a new data management team at Ricardo. This includes improvements to the resources and content of materials including more interactive guidance for vulnerable groups. Kent and Medway Partnership Group have created a communication subgroup - attendees include various district councils, Kent County Council and Public Health England representatives. SBC have match funding to be part of an education package 'Pollution Patrol' which will run in response to a successful Defra Air Quality Grant Scheme, led by our authority partners in Canterbury Council and the MidKent EH Partnership. The AQ grant monies will be used to fund the setting up and dissemination of a digital resource aimed at children aged 5-11 (and their parents) about air pollution. The aim being to educate, raise awareness and promote behaviour change. The resource will be made available firstly to all primary schools in the Swale BC, Maidstone BC, Tonbridge Wells BC (the Mid Kent EH Partnership) and Canterbury Council. All primary schools in Swale will have access to this important resource from April 2022. KCC are involved as the organisation responsible for both public health and education in our area. In addition, other districts in Kent will also be able to benefit from the package as it's rolled out.

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8	EcoStars	Vehicle Fleet Efficiency	Driver training and ECO driving aids	2019	2019	SBC	NA	NA	NA	NA	Not currently active	No direct measure available.	Number of HGV and LGV drivers taken through scheme.	EcoStars programme no longer live.	EcoStars continued in 2019 but at present the Emissions Toolkit which is planned to measure the direct improvement on air quality from members implementing improvement measures is still not available. As a result, SBC continue to not finance the recruitment of additional members in 2021.
Local LAQM Measures															
9	Local school and business travel plans	Promoting travel alternatives	Promotion of walking and cycling and travel plans	2019	On-going	KCC (+ PHE, SBC)	AQ grant scheme, SBC funding and S106 contributions	As part of an AQ grant scheme	NA	Unknown	Implementation phase	Lower NO _x and PM ₁₀ emissions	% participant in Kent smarter travel challenge recorded by KCC	<p>SBC informed all schools of the Kent Smarter Travel scheme. Responses included a discussion about their travel plans and how the scheme and SBC could help.</p> <p>Pollution Patrol will be promoted to schools via the Swale Green School's Forum which will be active in 2022</p>	<ul style="list-style-type: none"> Still difficulty in engaging with schools due to wider Covid-19 implications. SBC plan to continue to work with schools' once restrictions have been lifted and schools are ready to take part. Collaborative work is planned with SBC Climate Action team to re-engage with schools. The digital education package mentioned above (measure 7) will be used as part of the Clean Air for Schools scheme. KCC and district distribution to support local business to switch to ULEV vans through the Kent REVS Up for Cleaner Air scheme - the scheme is active, and information has been distributed among businesses with 20 businesses taking part in Swale.
10	Pinch-point parking alternatives (red-route)	Traffic Management	Parking Enforcement on highway	2019	2022	KCC	Combination of the S106 contributions	NA	NA	Unknown	Planning phase	Lower NO _x and PM ₁₀ emissions	A2 parking space reduction	Ongoing	<ul style="list-style-type: none"> No further actions have occurred for this measure. This measure will be reviewed with Kent City Council (KCC) as part of the AQAP update. Vehicle Parking Supplementary Planning Document has been adopted, though does not include A2 parking space reduction. This measure might be factored into the Transport Strategy.
11	"20 is plenty" zones	Traffic Management	Reduction of speed limits, 20mph zones	NA	On-going	KCC	NA	NA	NA	Unknown	Not currently active in AQMAs	Lower NO _x and PM ₁₀ emissions	Smoothing Traffic flow to reduce emissions	On-going	<ul style="list-style-type: none"> Faversham town centre now has 20 mph speed limit which was funded by the Department for Transport's Emergency Active Travel Fund. This was led by Faversham Town Council and Kent County Council. Ospringe AQMA was not included in this. Newington Parish Council are undertaking discussions with KCC to set up a 20mph speed limit in Newington which will include the AQMA. This is fully supported by SBC. If successful the data in this area will be assessed to see if any

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
															long term air quality changes occur.
12	Quiet delivery zones	Freight and delivery management	Quiet & out of hours delivery	2021	2022	KCC	Combination of the S106 contributions	NA	NA	To be confirmed	Being reviewed as part of a planning application	Lower NO _x and PM ₁₀ emissions	Reducing noise and emissions by restricting delivery times	This measure has not been actioned by KCC.	Further engagement with the highways authority is required to identify a work plan for this measure.
13	Local LEV car-club	Promoting Low Emission Transport	Other	2020	2022	SBC	SBC Improvement & Resilience Fund; s106 contributions	NA	NA	NA	NA	Lower NO _x and PM ₁₀ emissions	LEV car club vehicle no. and booking level	This measure is ongoing and start in 2022. 3 ULEV cars are located around Faversham town centre by Hiyacar - this will be procured by SBC. Usage levels will be monitored over the 3 year trial - the car club should be self-sustaining after this point.	The car club will be implemented at a lower cost to the council than expected. Marketing and information will be key to success. Pursuing expansion of the car club through developer contributions or installation at their sites.
Additional Measures															
14	Anti-idling Campaign targeting hotspot areas within the district	Traffic Management	Anti-idling enforcement	2020	Ongoing	SBC	SBC budget	NA	Fully funded	NA	On going	Lower NO _x and PM ₁₀ emissions	Sustainable business, cleaner greener Swale	Ongoing	<p>As part of the anti-idling campaign launch Environmental Response Team have visited idling hotspot areas around schools. We have contacted schools that have previously taken part of the 'Clean Air For Schools' scheme and those that have anti-idling signs outside of their schools, to see if they would like to take part in the anti-idling campaign. We have also sent the schools materials such as anti-idling toolkits supplied by Global Action to take part in the campaign.</p> <p>Prior to the launch we worked with the SBC communications team, as part of the engagement plan - issued press releases and fed into Facebook and Twitter. Taxi drivers regularly reminded via newsletters. We plan to work with SBCs Climate Action team for further engagement with schools.</p>
15	Swale Air Quality and Planning Guidance (update)	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2017	2021	SBC	No funding needed	NA	NA	NA	Active	N/A	Planning	Planning Technical Guidance: leading to a clearer expectation of what is required from Developers, especially concerning assessment and mitigation measures. Document was updated, Spring 2021.	The Local Plan Review 2021 Pre-Submission Document will include a more robust Air Quality Policy which will support the Air Quality and Planning Technical Guidance document. The guidance document is being reviewed and updated relative to localised best practice.
16	Low emission taxi licencing scheme (Kent)	Promoting Low Emission Transport	Taxi Licensing conditions	2017/18	2021	SBC	KCC	NA	Unknown	NA	Active	N/A	Lower	Ongoing	KCC Energy and Low Emission Strategy (ELES) include priority to work with private transport sector, including school transport providers and taxi licensing to incentivise and switch to Ultra Low Emission Vehicles. Swale's taxi charging point will be installed by 2021 (lead KCC). Taxi fleet has been upgraded: currently 6 hybrids (all Prius) and 1 Tesla.
17	Clean-air walking and cycle ways	Promote travel alternatives	Intensive active travel campaign & infrastructure	2019	2022	SBC/ KCC	Explore Kent's maps comes from KCC's bid for funding from the UK Government's Access	NA	Active	Unknown	Multiple phases being completed	NA	Reduction of vehicles by encouraging the use of cycling	Ongoing	<ul style="list-style-type: none"> Emerging Local plan and Transport Strategy developed (out for consultation in early 2021)

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							Fund. The funding for the cycling and walking audits for Faversham and Sheppey also came from the same funding stream.								<ul style="list-style-type: none"> include model shift priorities. SBC is working with Kent Downs AONB and Medway Swale Estuary Partnership on the Linking Coast to Downs project to develop leisure routes, with work being undertaken to identify potential routes. Faversham Local Cycling & walking Infrastructure Plan (LCWIP) draft document completed. SBC to endorse it so that it can be used for funding bids and in planning discussions. The Economy and Community Services team are also providing information to Explore Kent who are designing a map to encourage active travel in the Faversham and Sittingbourne area.
18	Clean-air travel planning	Promote travel alternatives	Personalised Travel Planning	2019	2022	KCC/SBC	Swale Borough Council's Special Projects Fund, KCC joint bids and S106 contributions	NA	Active	To be confirmed		NA	Lower vehicle emissions	On-going	<p>The draft Transport Strategy is a step change for Swale in terms of promoting active travel through new (and existing) development. Planning teams are working on LCWIP (Local Walking and Cycling Strategy) with Faversham Town Council for the whole of Faversham and then a Faversham to the countryside project to link Faversham to the wider villages. The possibility of a district-wide strategy is being considered for 2022. Local Cycling and Walking Infrastructure Plan (LCWIP) for the Faversham Area was funded through a bid to Swale Borough Council's Special Projects Fund.</p>
19	Promote and encourage change of transport modes	Promote low emission transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2021	On-going	SBC	SBC/KCC/OZEV	NA	Existing budgets	NA	Active	Unquantifiable	% increase in electric/hybrid vehicles on the road using traffic counts.	Ongoing	<ul style="list-style-type: none"> SBC are working on promoting business fleet decarbonisation and our work-place car chargers. Energy improvement grant signposting via e-bulletin for businesses and website for householders. 20 businesses (2021) in Swale loaned electric vans via the Kent REVS scheme (highest of all LA areas in Kent) with high level of promotion to businesses via e-bulletin and event Due to Covid 19 bus usage has reduced and promoting bus use is not appropriate in the current situation during national lockdown. S106 planning application funding for air quality for sustainable transport fund. The EV strategy consultation complete in Spring 2022 and to be taken to committee.

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															<ul style="list-style-type: none"> Potential to increase EV charging capacity at Swale House has been confirmed. £100k secured from the On-Street Residential Charge Point Scheme to install 10 new charge points in SBC car parks (20 charging bays) in late summer 2022. SBC supports KCC plans for EV charging at village halls and taxi ranks. Engaged in conversations about Kent bid to the new LEVI fund pilot.
20	Air Quality Policy	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2020	2023	SBC	No funding needed				Implementation phase	Unquantifiable	Improve air quality through location, linkage, layout, land-use, landscaping and building design; plus, passive, and active mitigation measures.	Final draft AQ policy for Regulation 19 consultation/Pre-Submissions Document completed (2020). Consultation on Regulation 19 Local Plan Review took place between February to April 2021. Local Plan Review and policy due to be adopted 2023.	The Local Plan Review (Regulation 19/Pre-Submission) Document (2021) includes a robust Air Quality Policy and is supported by the Air Quality Planning Technical Guidance Document.
21	Promotion of public transport alternatives with quality bus and train services at enhanced frequencies	Alternatives to private vehicle use	Other	-	Ongoing	KCC/SBC	S106 contributions	NA	Currently unknown – SBC are reviewing potential 106 contributions	NA	NA	Unquantifiable	Statistical evidence of behaviour and travel choices	Recommendation made with planning applications and S106 contributions to improve bus services	Continue engaging with operators and attending the Quality Bus Partnership (QBP) group. We plan to guide developer contributions to support and promote the services.

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

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

Although there are no specific measures to address PM_{2.5} concentrations in place at present, it is recognised that measures to reduce NO₂ and PM₁₀ should also have a beneficial effect on PM_{2.5} concentrations. The following is a list of measures Swale Borough Council is undertaking to reduce PM₁₀ and NO_x which should have a beneficial impact on PM_{2.5}:

- Measure 1: Investigating the Feasibility of the 'Clean Air Corridor'
- Measure 2: Air Quality and Low Emission Strategy
- Measure 3: Development of Air Quality standards within new Local Plan. This includes Air Quality Policy, Parking Standards, Transport Strategy and EV Strategy
- Measure 7: Air pollution alerts and information
- Measure 9: Local school and business travel plans
- Measure 11: "20 is plenty" zones
- Measure 13: Local LEV car-club
- Measure 14: Anti-idling Campaign targeting hotspot areas within the district

The [Public Health Outcomes Framework data tool](#) compiled by Public Health England quantifies the mortality burden of PM_{2.5} within England on a county and local authority scale. The 2020 fraction of mortality attributable to PM_{2.5} pollution (indicator D01) across England is 5.6%, and in contrast the fraction within Swale is slightly above the national average at 6.1%. The regional average for the South East is 6.0%. The 2020 fraction of mortality has been used as opposed to the 2021 fraction as the data has not been made available at the time of writing.

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

This section sets out the monitoring undertaken within 2021 by Swale Borough Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2017 and 2021 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Swale Borough Council undertook automatic (continuous) monitoring at three sites during 2021. Automatic monitor ZM6 - Newington was decommissioned in April and relocated to the opposite side of the road (ZW10 - Newington). Table A.1 in Appendix A shows the details of the automatic monitoring sites⁹. The KentAir page presents automatic monitoring results for Swale Borough 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

Swale Borough Council undertook non-automatic (i.e., passive) monitoring of NO₂ at 78 sites during 2021. Table A.2 in Appendix A presents the details of the non-automatic sites. Sites SW83, 90, 107 ,109 and 110 have been decommissioned as part of Swale Borough Council's annual audit of passive monitoring sites in 2021. Site SW134 didn't provide enough for annual reporting due theft. Total number of locations is 78.

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

⁹ Local authorities do not have to report annually on the following pollutants: 1,3 butadiene, benzene, carbon monoxide and lead, unless local circumstances indicate there is a problem

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.

3.1.3 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 2021 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.

During 2021, no sites across Swale Borough Council monitored exceedances of the NO₂ AQS objective, with the majority of passive monitoring sites recording concentrations well under the objective. From 2020 – 2021, 47 sites reported increases in NO₂ and 18 sites reporting a decrease. This is likely influenced by the result of the COVID-19 pandemic, whereby the restrictions on travel and working from home likely resulted in reduced concentrations in 2020. Therefore, the 2021 reporting year is subject to pre-pandemic traffic volumes, which may explain the increases of NO₂ in 2021.

There are no passive monitoring sites where the NO₂ annual mean is greater than 60µg/m³, therefore in accordance with Defra LAQM.TG(16) there are no sites likely to be at risk of exceeding the 1-hour mean AQS objective.

The 11 new sites deployed in 2021 reported well below the AQS objective in the first year of monitoring. Regarding the AQMAs, there has been compliance within them all for the past

2 years, further compliance oversees AQMA No.3 for 3 years and AQMA No.5 for the past 5 years. The remaining sites outside of AQMA boundaries, in Sittingbourne, Sheerness and rural locations, all have annual mean NO₂ concentrations well below the AQS objective and have shown compliance for the last 4 years.

The maximum concentration recorded in 2021 was the only passive monitoring site within 10% of the AQS objective, located within AQMA No.7, site SW124.

All three automatic monitoring stations recorded concentrations well below the AQS objectives for both annual mean and 1 – hour mean NO₂, with concentrations at ZW3 and ZW8 decreasing from 2020. The relocated Newington station ZW10 reported an annual mean concentration value of 22.6µg/m³.

3.1.4 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.

During 2021 three automatic monitoring sites recorded PM₁₀ concentrations; ZW3, ZW8 and ZW10, both ZW3 and 8 reported increases from 2020, with ZW8 now within 10% of the annual mean PM₁₀ AQS objective, at 37.1µg/m³. Over the past 3 years ZW8 continues the trend of increasing PM₁₀ concentrations annually. ZW10, has reported compliance with the PM₁₀ AQS objective on the first year of reporting at 17.1µg/m³.

At ZW3 (Swale Ospringe Street Roadside) in AQMA No.2/6, the number of exceedances of the 24-hour mean greater the 50µg/m³ was 12, significantly less than the AQS objective of the 35 exceedances. At ZW8 (St Paul's Street) in AQMA No.4 the number of exceedances was 59, which is significantly more than the AQS objective of the 35 exceedances. This exceedance has been reported 2 years in a row in 2020 and 2021, since 2019 the amount of exceedances has increased, and has overseen 3 years of non-compliance to the 24 – Hour PM₁₀ AQS objective. As discussed in Section 2.1 work is ongoing to understand better the reasons for these exceedances.

3.1.5 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.

Monitoring for PM_{2.5} was undertaken at existing site ZW8 (St Paul's Street) and new site ZW10 (Newington). ZW8 records a decrease from 2020, which further supports the AQS objective of working towards reducing emissions/concentrations of PM_{2.5}.

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?	Monitoring Technique	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Inlet Height (m)
ZM3	Swale Ospringe Roadside	Roadside	600360	160869	NO ₂ PM ₁₀	Y – AQMA No.2/6	Chemiluminescent, TEOM	0.5	1.7	2
ZM8	St Paul's Street	Roadside	590264	164396	NO ₂ , PM ₁₀ , PM _{2.5}	Y – AQMA No.4	Chemiluminescent BAM x 2	9	2.5	3.2
ZM10	Newington	Roadside	585970	164787	NO ₂ , PM ₁₀ , PM _{2.5}	Y – AQMA No.1	Chemiluminescent BAM x 2	2.6	3.3	2.1
Notes: ZW6 was decommissioned and relocated to ZW10										

Notes:

(1) 0m if the monitoring site is at a location of exposure (e.g., installed on the façade of a residential property).

(2) N/A if not applicable

Table A.2 – Details of 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)
AQMA No.1	Newington									
SW19	5/6 High Street, Newington	Roadside	585904	164794	NO ₂	Y – AQMA No.1	0.0	2.3	No	2.05
SW20a,SW20b, SW20c	Newington Co Op	Roadside	585860	164816	NO ₂	Y – AQMA No.1	0.0	1.9	Yes	2.25
SW37	32 High Street, Newington	Roadside	585868	164803	NO ₂	Y – AQMA No.1	4.0	1.9	No	2.05
SW42a,SW42b, SW42c	High Street, Opp Church Lane	Roadside	585935	164787	NO ₂	Y – AQMA No.1	0.0	1.3	No	2.18
SW45	64 High Street, Newington	Roadside	585989	164774	NO ₂	Y – AQMA No.1	2.9	1.2	No	2.25
SW66	96/94 High Street, Newington	Roadside	586080	164746	NO ₂	Y – AQMA No.1	0.0	1.1	No	1.86
SW78	55-57 High Street, Newington	Roadside	585951	164792	NO ₂	Y – AQMA No.1	0.9	2.2	No	1.9
AQMA No.2/6	Ospringle Street Faversham Area									
SW28	Mayors Arms, Ospringle	Roadside	600223	160887	NO ₂	Y – AQMA No.2/6	0.0	1.5	No	2.37
SW30a,SW30b, SW30c	ZW3 Ospringle Street	Roadside	600383	160869	NO ₂	Y – AQMA No.2/6	1.7	2.5	Yes	1.75
SW29	43 Ospringle Street, Ospringle	Roadside	600286	160868	NO ₂	Y – AQMA No.2/6	0.0	2.4	No	2.05
SW31	Site 7, 4 Ospringle Street	Roadside	600444	160848	NO ₂	Y – AQMA No.2/6	0.0	1.5	No	2.26
SW32	11 Ospringle Street, Ospringle	Roadside	600420	160843	NO ₂	Y – AQMA No.2/6	0.0	2.0	No	2.3
SW96	Maison Dieu, Ospringle Street	Roadside	600358	160859	NO ₂	Y – AQMA No.2/6	0.0	1.5	No	2.3
SW98	Canterbury Road, Preston, Faversham	Kerbside	601818	160474	NO ₂	NO	2.0	0.4	No	2.03
SW117	Land Adj Orchard, Canterbury Road, Faversham	Roadside	601629	160525	NO ₂	NO	26.2	1.1	No	2.03
SW119	Flats, The Mount, Ospringle	Roadside	600568	160819	NO ₂	Y – AQMA No.2/6	0.0	8.0	No	1.9
SW120	1-3 Ospringle Street, Ospringle,	Roadside	600456	160836	NO ₂	Y – AQMA No.2/6	0.0	1.4	No	1.96

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)
SW135	L/P 31/33 Ospringe Street, Ospringe	Roadside	600326	160860	NO ₂	NO	0.5	2.5	No	2.08
SW136	Preston Grove, Faversham	Roadside	601491	160570	NO ₂	NO	20.0	2.2	No	2.05
SW137	Ashford Road, Faversham	Roadside	601452	160487	NO ₂	NO	6.0	1.4	No	2.05
SW138	17/18 East Street, Faversham	Roadside	601739	161310	NO ₂	NO	0.0	1.3	No	2.05
SW139	14 Crescent Road, Faversham	Roadside	601706	161334	NO ₂	NO	10.0	1.1	No	2.15
AQMA No.3	East Street									
SW56	126 East Street, Sittingbourne	Roadside	591453	163465	NO ₂	Y – AQMA No.3	0.0	3.1	No	1.8
SW151	Beatrice Lodge, East Street, Sittingbourne	Roadside	591515	163451	NO ₂	NO	6.0	1.6	No	2
SW152	157/159 East Street	Roadside	591423	163484	NO ₂	Y – AQMA No.3	4.0	1.8	No	2
AQMA No.4	St Paul's Street									
SW51	O/ S 14/16 St Paul's Street	Roadside	590236	164408	NO ₂	Y – AQMA No.4	0.5	2.0	No	2.2
SW71	O/S 8 Staple Close, Staplehurst Road, Sittingbourne	Roadside	590096	164455	NO ₂	NO	4.4	3.3	No	2.25
SW89a, SW8bB, SW89c	St Paul's Air Quality Station	Roadside	590252	164397	NO ₂	Y – AQMA No.4	11.1	1.9	Yes	2.25
SW140	36/38 Chalkwell	Roadside	590079	164367	NO ₂	NO	0.0	1.1	No	2
SW141	37/39 Chalkwell Road, Sittingbourne	Roadside	590071	164375	NO ₂	NO	0.0	1.6	No	2.06
SW142	Opposite the Stumble Inn	Roadside	590139	164406	NO ₂	Y – AQMA No.4	20.0	1.6	No	2.08
SW150	24/26 St Paul's Street	Roadside	590203	164409	NO ₂	Y – AQMA No.4	0.0	4.5	No	2

AQMA No.5	Teynham									
SW80	A2 Teynham, 107 London Road	Roadside	595155	162472	NO ₂	Y – AQMA No.5	0.6	1.5	No	1.8
SW91	Adj to 72 London Road, Teynham	Roadside	595150	162461	NO ₂	No	0.0	2.4	No	1.75

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)
SW92	FJ Williams, London Road	Roadside	595195	162446	NO ₂	Y – AQMA No.5	1.0	3.4	No	1.85
SW153	190/192 London Road, Teynham	Roadside	594748	162602	NO ₂	No	1.5	1.5	No	2.05
AQMA No.7	Keycol Hill									
SW121	Façade Squirrel Cottage, Keycol Hill	Roadside	587936	164268	NO ₂	No	0.0	9.3	No	1.9
SW124	31/33 Keycol Hill Sittingbourne Highest Point	Roadside	587775	164320	NO ₂	Y – AQMA No.7	0.0	1.5	No	2
SW130	31/33 Keycol Hill Sittingbourne Mid Point	Roadside	587775	164320	NO ₂	Y – AQMA No.7	0.0	1.5	No	1.4
SW131	31/33 Keycol Hill Sittingbourne Lowest Point	Roadside	587775	164320	NO ₂	Y – AQMA No.7	0.0	1.5	No	0.8
SW144	3/5 Keycol Hill	Roadside	587917	164277	NO ₂	Y – AQMA No.7	0.0	4.8	No	1.9
SW145	L/P 40 Keycol Hill	Roadside	587694	164358	NO ₂	Y – AQMA No.7	40.0	1.5	No	2.05
SW146	Fox Cottage, Chestnut Street, Danaway	Roadside	587513	163885	NO ₂	No	7.0	1.8	No	2.15
SW154	Bus Stop 9-11 Keycol Hill, Sittingbourne	Roadside	587874	164292	NO ₂	Y – AQMA No.7	9.0	1.5	No	2.05
Sittingbourne										
SW62	13 Key Street, Sittingbourne	Roadside	588178	164236	NO ₂	No	15.0	2	No	2.4
SW76	155 Canterbury Road, Sittingbourne	Roadside	592209	163302	NO ₂	No	3.5	1.9	No	2.0
SW77	Kemsley Fields, Swale Way, Sittingbourne	Roadside	591040	166519	NO ₂	No	13.6	6.0	No	2
SW88	Sonara Way, Sonara Fields, Sittingbourne	Urban Background	589318	165045	NO ₂	No	5.8	1.8	No	2.1

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)
	Sittingbourne									
SW112	56 Key Street, Sittingbourne	Roadside	588329	164188	NO ₂	No	5.5	2.1	No	2.1
SW118	Opp Fruit Stall, 9 Fox Hill, Bapchild	Roadside	592791	163168	NO ₂	No	31.5	5.1	No	2
SW122	Façade 13 Key Street, Sittingbourne	Roadside	588184	164250	NO ₂	No	0.0	18.0	No	1.22
SW123	12 Key Street, Sittingbourne	Roadside	588153	164227	NO ₂	No	0.0	3.7	No	1.8
SW125	Fox & Goose, The Street, Bapchild	Roadside	592837	163150	NO ₂	No	0.0	1.6	No	1.95
SW126	16/18 The Street, Bapchild	Roadside	592867	163131	NO ₂	No	1.0	1.0	No	2.08
SW132	Fountain Street, Sittingbourne	Roadside	590507	163850	NO ₂	No	5.0	3.0	No	2.05
SW143	L/P 49 Key Street, Sittingbourne	Roadside	588383	164190	NO ₂	No	5.0	2.0	No	2
SW147	Flats 1-20 St Michaels Road	Kerbside	590370	163877	NO ₂	No	1.0	0.4	No	2.07
SW148	156/160 London Road, Sittingbourne	Roadside	589163	164011	NO ₂	No	4.0	1.5	No	2.05
SW149	Balmoral Terrace, London Road, Sittingbourne	Roadside	589799	163856	NO ₂	No	10.0	1.9	No	2
SW155	Grovehurst Road, Iwade Bound side between roundabout & Iwade Village	Roadside	590292	166977	NO ₂	No	No relevant exposure	2.90	No	2.00
SW156	Lamp post o/s 96 Grovehurst Road, Sittingbourne	Roadside	590525	166298	NO ₂	No	2.5	1.20	No	2.00
SW157	Lamp post o/s 139 Grovehurst Road, Sittingbourne	Roadside	590428	166438	NO ₂	No	7.0	2.90	No	2.00

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)
SW158	Lamp post o/s Sanctuary Homes (Milton Pipes) Site Mill Way, Sittingbourne	Roadside	590494	164416	NO ₂	No	40.0	2.90	No	2.00
SW159	Lamp post jct Gas Road & Mill Way, Sittingbourne	Roadside	590568	164440	NO ₂	No	40.0	1.80	No	1.90
SW160	Lamp post o/s 41/43 Saffron Way, Sittingbourne B2005	Roadside	590904	165192	NO ₂	No	10.0	1.50	No	2.00
SW161	Lamp post Garnet House Flats, B2006 Staplehurst Link	Roadside	589167	164747	NO ₂	No	3	8	No	2.05
SW162	Lamp post 1 Staplehurst Road, Sittingbourne B2006 Staplehurst Link Road	Roadside	590093	164438	NO ₂	No	7.0	1.45	No	2.00
SW163	Lamp post Opp Regent Park, Eurolink Way, Sittingbourne	Roadside	590850	163852	NO ₂	No	30.0	2.20	No	2.30
Ise of Sheppey										
SW85	Sheerness College 2, Bridge Road, Sheerness	Roadside	591752	175012	NO ₂	No	-	2.4	No	2.23
SW86	Swale Foyer, Bridge Road, Sheerness	Roadside	591726	175018	NO ₂	No	-	2.4	No	2.05
SW127	Halfway Road (14) Halfway, Sheerness	Roadside	593151	172962	NO ₂	No	9.0	2.5	No	2.05
SW128	Queenborough Road (12/14) Halfway, Sheerness	Roadside	593092	172870	NO ₂	No	3.0	1.5	No	2.1
SW133	159 High Street, Sheerness Lampost	Roadside	592207	174597	NO ₂	No	0.5	1.5	No	2
SW134	12/14 High Street Sheerness Post	Roadside	591889	174944	NO ₂	No	3.5	1.6	No	2.4

SW164	45 Minster Road, Halfway	Kerbside	593292	172897	NO ₂	No	4	1.10	No	1.9
SW165 +6	Main Road, Queenborough	Kerbside	591396	172070	NO ₂	No	10	0.40	No	2.05

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)
Rural						No				
SW07	Capel Hill Farm, Harty	Rural	600758	169576	NO ₂	No	5.0	N/A	No	1.7
SW34	Hernhill Village Hall, Hernhill	Rural	606624	161108	NO ₂	No	0.0	N/A	No	1.87

Notes: Sites SW83, SW90, SW107, SW109 and SW110 have been decommissioned for the 2021 monitoring period due to Swale Borough Council's annual audit of passive monitors. Site SW134 didn't provide enough for annual reporting due to theft.

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 2021 (%) ⁽²⁾	2017	2018	2019	2020	2021
ZW3	600360	160869	Roadside	99.2	99.2	-	31.6	31.4	25.1	23.5
ZW8	590264	164396	Roadside	96.2	96.2	35.1	39.7	39.1	31.6	30.6
ZW10	585970	164787	Roadside	73.1	73.1	-	-	-	-	22.6

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

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

Notes:

The annual mean concentrations are presented as µg/m³.

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

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

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

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

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

Table A.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 2021 (%) ⁽²⁾	2017	2018	2019	2020	2021
AQMA No.1	Newington									
SW19	585907	164794	Roadside	100	100	35.4	39	36.8	27.0	27.9
SW20 (triplicate)	585860	164816	Roadside	94.4	94.4	29.9	26.1	26	18.9	19.1
SW37	585868	164803	Roadside	100	100	34.2	33.7	32.6	23.1	24.3
SW42 (triplicate)	585935	164787	Roadside	97.2	97.2	46.4	47.8	43.9	31.5	33.1
SW45	585989	164774	Roadside	91.7	91.7	41.2	39.7	31.8	27.4	28.6
SW66	586083	164745	Roadside	100	100	38.5	35.4	33.7	26.9	26.4
SW78	585960	164788	Roadside	100	100	40.2	36.9	34.1	25.4	26.9
AQMA No.2/6	Ospringe Street Faversham Area									
SW28	600223	160885	Roadside	100	100	47	45.4	43	34.0	34.3
SW30 (triplicate)	600383	160869	Roadside	100	100	37.2	36.3	31.1	22.3	23.0
SW29	600286	160868	Roadside	100	100	46.2	41.1	40.9	30.4	29.0
SW31	600444	160848	Roadside	100	100	40.7	42.6	37.9	27.8	30.0
SW32	600420	160845	Roadside	100	100	39.1	36.8	36.9	25.0	24.5
SW96	600358	160859	Roadside	100	100	40	36.4	36.6	27.9	26.7
SW98	601818	160474	Kerbside	91.7	91.7	34.3	33	33.5	23.4	22.7
SW117	601629	160525	Roadside	100	100	-	35.3	28.5	20.3	20.8
SW119	600568	160819	Roadside	100	100	-	27	24.7	19.1	17.6
SW120	600456	160836	Roadside	100	100	-	42.2	39.9	29.9	29.4
SW135	600317	160861	Roadside	100	100	-	-	-	31.6	30.6
SW136	601491	160570	Roadside	100	75.0	-	-	-	26.4	27.3
SW137	601452	160487	Roadside	100	91.7	-	-	-	35.7	24.7
SW138	601739	161310	Roadside	100	75.0	-	-	-	24.9	25.8
SW139	601706	161334	Roadside	100	100	-	-	-	21.5	23.8
AQMA No.3	East Street									
SW56	591453	163456	Roadside	100	100	42.5	40.5	37.7	27.6	30.0
SW151	591515	163451	Roadside	100	100	-	-	-	19.0	20.9
SW152	591423	163484	Roadside	75.0	75	-	-	-	23.9	25.6
AQMA No.4	St Paul's Street									
SW51	590236	164408	Roadside	91.7	91.7	39.6	45.2	40.5	32.4	34.4
SW71	590096	164455	Roadside	91.7	91.7	40	37	36.1	27.6	28.9
SW89 (triplicate)	590252	164397	Roadside	91.7	91.7	44.7	43.2	40.1	32.3	31.9
SW140	590079	164367	Roadside	83.3	83.3	-	-	-	26.1	31.8
SW141	590071	164375	Roadside	83.3	83.3	-	-	-	27.0	27.9

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 2021 (%) ⁽²⁾	2017	2018	2019	2020	2021
SW142	590146	164397	Roadside	83.3	83.3	-	-	-	24.2	27.6
SW150	590203	164409	Roadside	83.3	83.3	-	-	-	22.2	25.4
AQMA No.5	Teynham									
SW80	595160	162470	Roadside	75.0	75.0	39.9	39.3	32.8	26.1	25.3
SW91	595150	162461	Roadside	91.7	91.7	35.3	32.3	33.4	23.7	24.7
SW92	595195	162446	Roadside	100	100	29.1	32.1	31.9	23.5	22.6
SW153	594748	162602	Roadside	100	100	-	-	-	23.8	21.5
AQMA No.7	Keycol Hill									
SW121	587936	164268	Roadside	100	100	-	-	42.7	33.9	34.6
SW124	587774	164321	Roadside	100	100	-	-	52.3	34.8	36.9
SW130	587774	164321	Roadside	100	100	-	-	55.5	35.8	34.8
SW131	587774	164321	Roadside	100	100	-	-	55	35.0	35.8
SW144	587917	164277	Roadside	100	100	-	-	-	32.9	33.7
SW145	587692	164356	Roadside	91.7	91.7	-	-	-	22.3	24.1
SW146	587516	163885	Roadside	100	100	-	-	-	17.8	17.7
SW154	587874	164292	Roadside	100	100	-	-	-	34.0	34.7
Sittingbourne										
SW62	588178	164236	Roadside	91.7	91.7	40.6	33.7	33.7	26.4	26.1
SW76	592211	163302	Roadside	100	100	37.6	34.2	33.5	22.2	26.0
SW77	591035	166521	Roadside	100	100	31.3	32.9	29.6	24.6	26.0
SW88	589320	165047	Urban Background	100	100	20.4	22.2	21.1	14.6	16.3
SW112	588329	164188	Roadside	0	0	-	35.4	33.4	25.8	26.0
SW118	592791	163168	Roadside	100	100	-	20.2	21.3	13.4	13.8
SW122	588184	164250	Roadside	100	100	-	-	21.2	16.9	16.9
SW123	588153	164227	Roadside	100	100	-	-	27.3	21.8	22.7
SW125	592868	163132	Roadside	100	100	-	-	23.7	16.7	17.0
SW126	592837	163150	Kerbside	91.7	91.7	-	-	37.2	24.0	24.6
SW132	590507	163849	Roadside	91.7	91.7	-	-	31.4	25.9	28.2
SW143	588388	164189	Roadside	91.7	91.7	-	-	-	20.7	22.4
SW147	590370	163877	Kerbside	100	100	-	-	-	26.4	27.7
SW148	589163	164011	Roadside	100	75.0	-	-	-	19.5	20.8
SW149	589799	163856	Roadside	91.7	91.7	-	-	-	25.0	27.3
SW155	590292	166977	Roadside	100	83.3	-	-	-	-	18.9
SW156	590525	166298	Roadside	100	100	-	-	-	-	19.5
SW157	590428	166438	Roadside	83.3	83.3	-	-	-	-	26.8
SW158	590494	164416	Roadside	91.7	91.7	-	-	-	-	33.8
SW159	590568	164440	Roadside	91.7	91.7	-	-	-	-	30.3
SW160	590904	165192	Roadside	100	100	-	-	-	-	23.7

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2021 (%) ⁽²⁾	2017	2018	2019	2020	2021
SW161	589167	164747	Roadside	91.7	91.7	-	-	-	-	24.4
SW162	590093	164438	Roadside	90.4	90.4	-	-	-	-	29.4
SW163	590850	163852	Roadside	100	100	-	-	-	-	27.1
Sheerness										
SW85	591751	175009	Roadside	91.7	91.7	32.5	33.3	31	25.0	25.3
SW86	591723	175020	Roadside	83.3	83.3	31.4	30.3	28.3	21.5	23.1
SW127	593151	172962	Roadside	91.7	91.7	-	-	31	22.4	23.4
SW128	593092	172870	Roadside	91.7	91.7	-	-	37.4	27.0	27.4
SW133	592207	174597	Roadside	75.0	75.0	-	-	30.4	22.5	25.0
SW134	591889	174944	Roadside	16.7	16.7	-	-	26.8	18.5	-
SW164	593292	172897	Kerbside	100	100	-	-	-	-	21.6
SW165	591396	172070	Kerbside	58.3	58.3	-	-	-	-	17.5
Rural										
SW07	600745	169572	Rural	100	100	10.7	10.7	11.3	8.3	7.7
SW34	606624	161110	Rural	100	100	11.9	10.3	9.8	8.0	7.3
Notes: Sites SW83, SW90, SW107, SW109 and SW110 have been decommissioned for the 2021 monitoring period due to Swale Borough Council's annual audit of passive monitors. Site SW134 didn't provide enough for annual reporting due to theft. Total number of locations is 78.										

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

☒ Diffusion tube data has been bias adjusted.

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

Notes:

The annual mean concentrations are presented as $\mu\text{g}/\text{m}^3$.

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.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

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

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

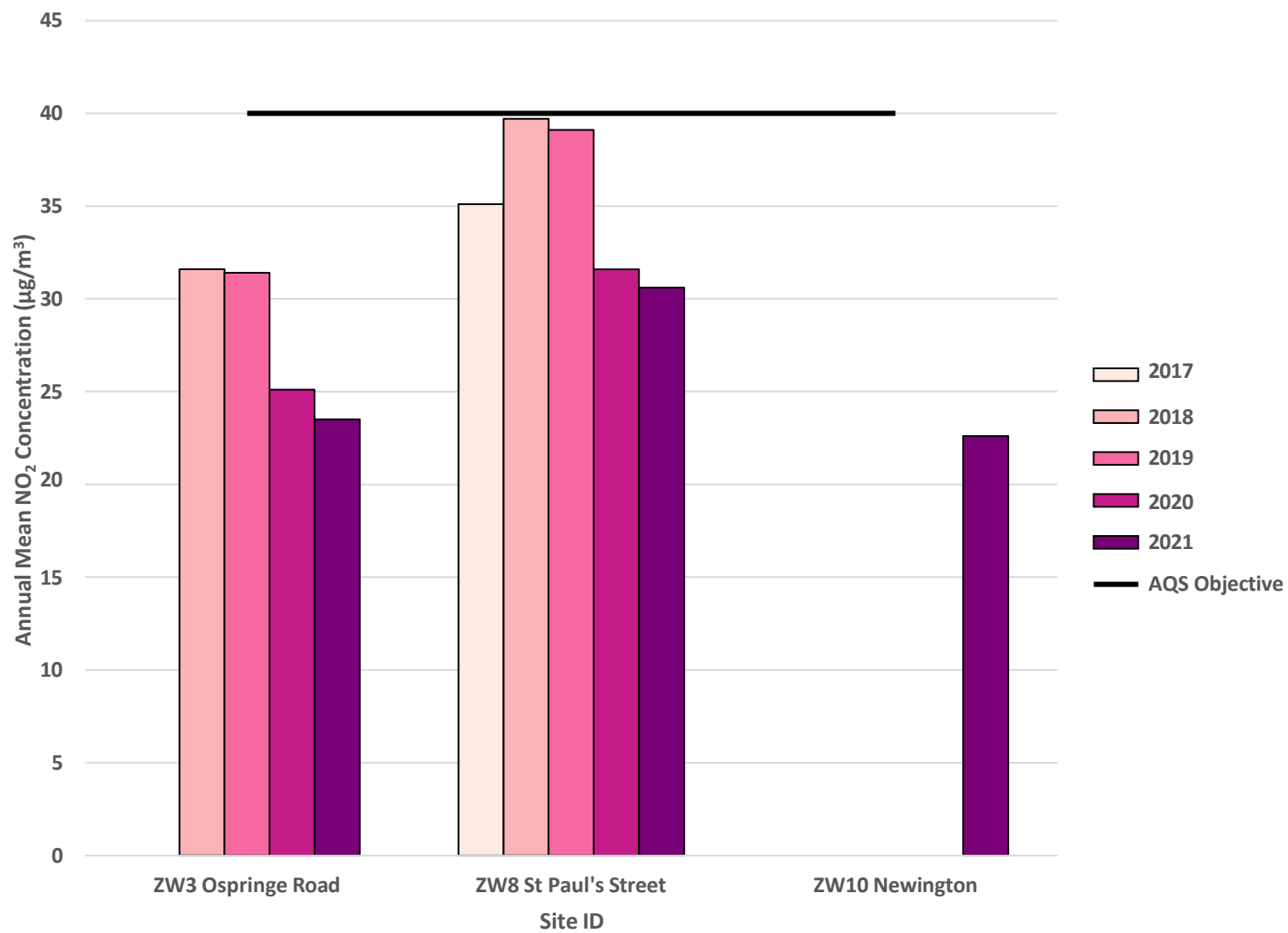
Figure A.1 – Trends in Annual Mean NO₂ Concentrations at Automatic Monitoring Stations

Figure A.2 – Trends in Annual Mean NO₂ Concentrations within AQMA No.1 Newington

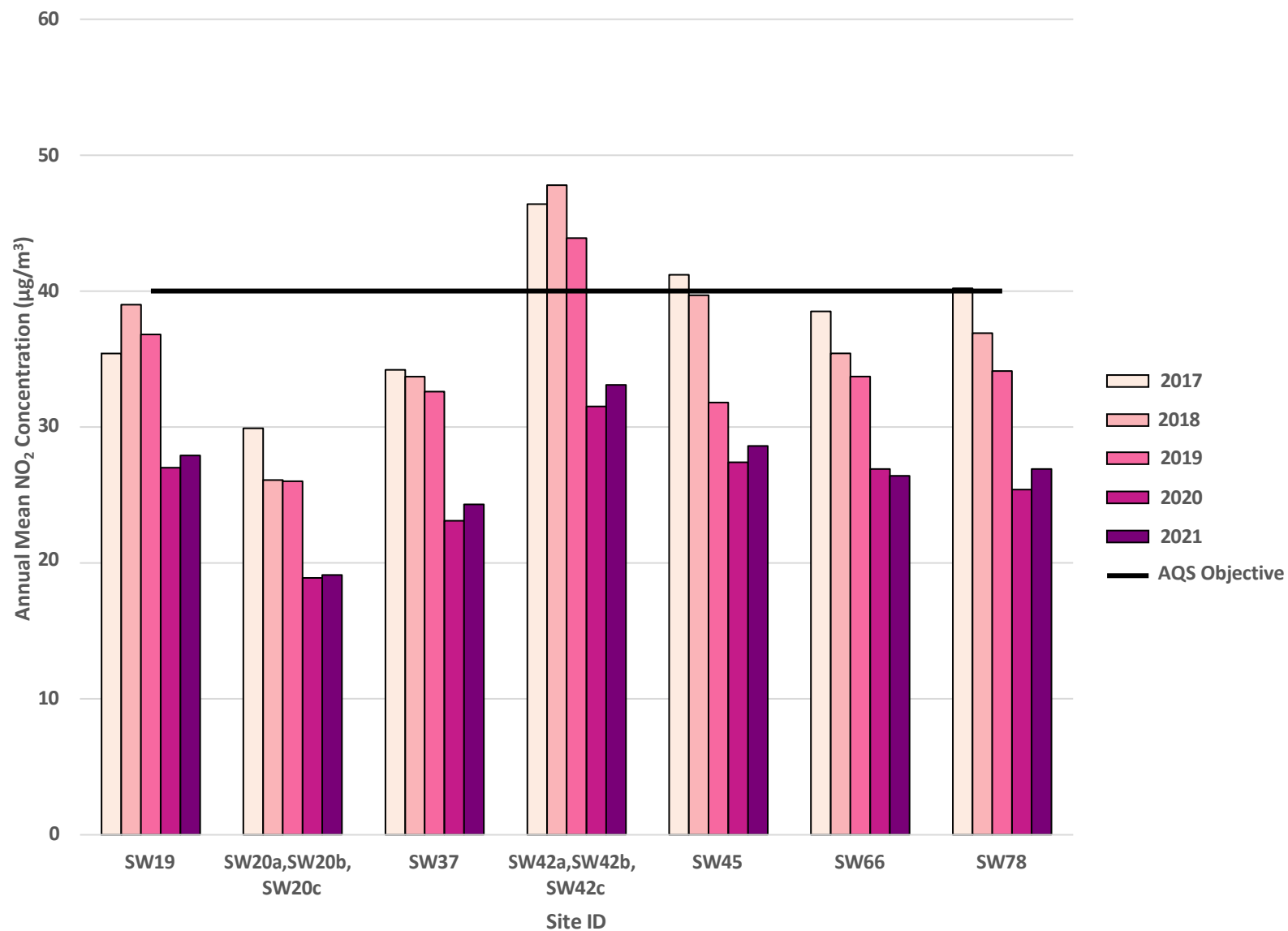


Figure A.3 – Trends in Annual Mean NO₂ Concentrations within AQMA No.2/6 Ospringe Street

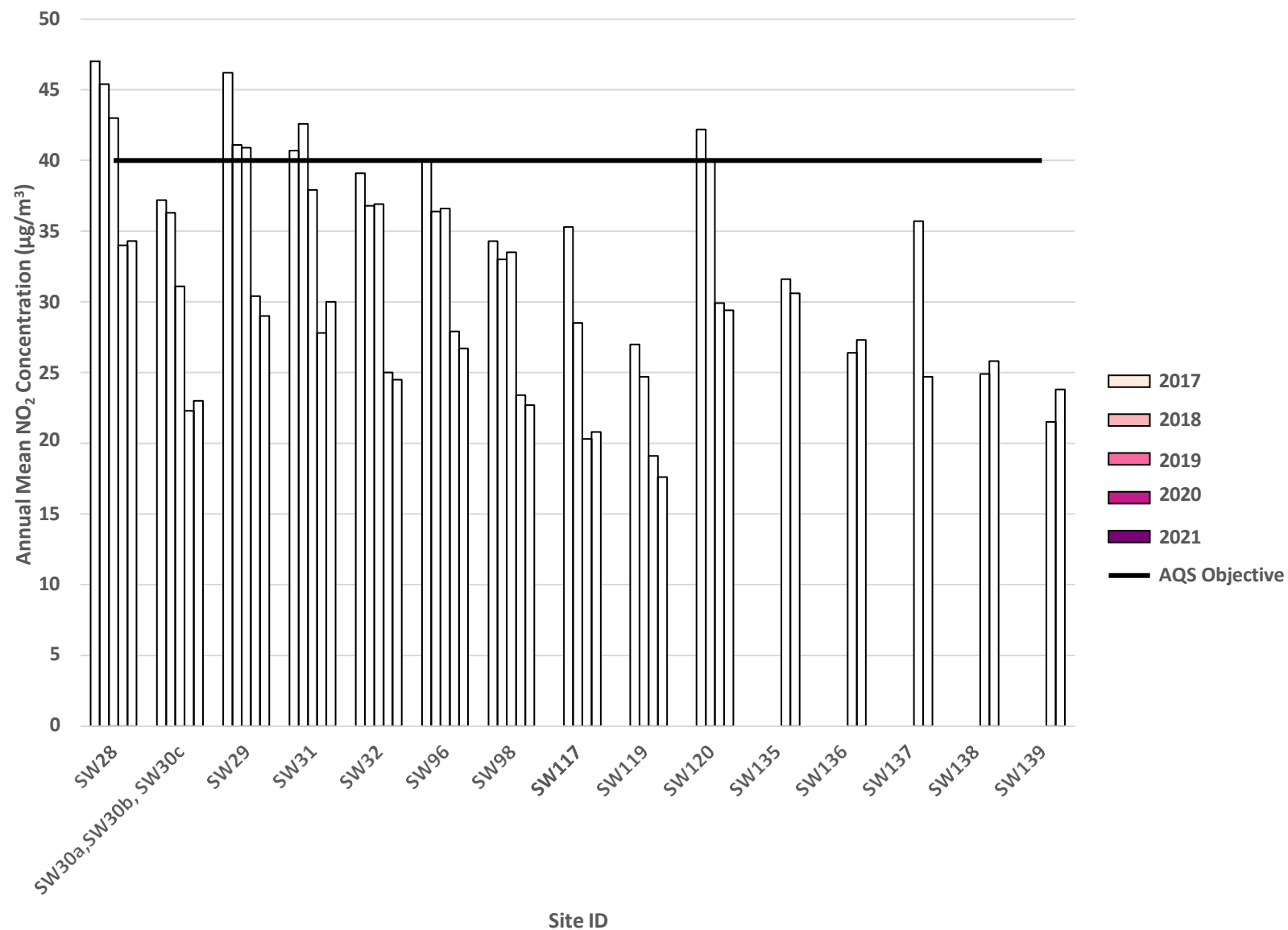


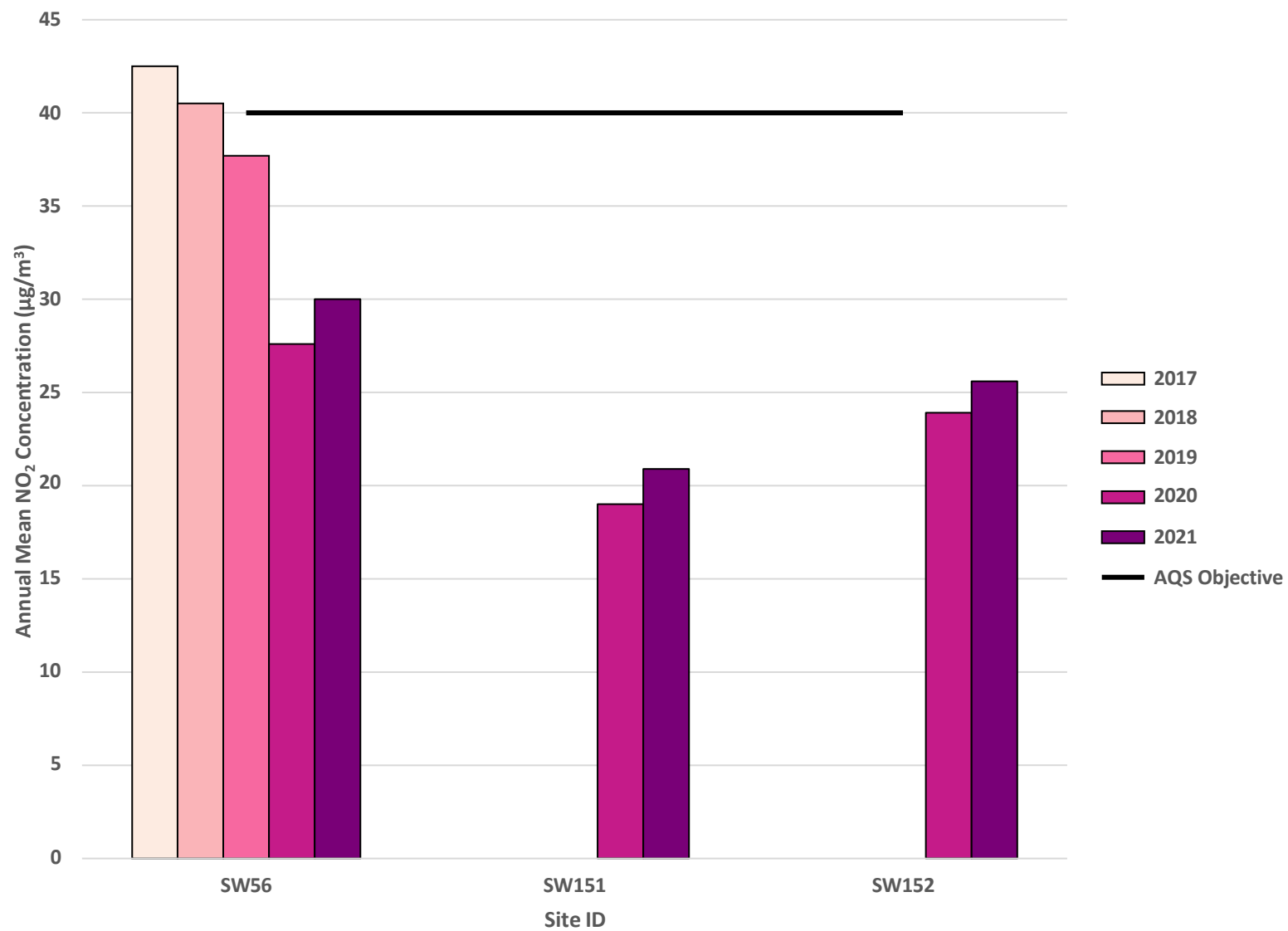
Figure A.4 – Trends in Annual Mean NO₂ Concentrations within AQMA No.3 East Street

Figure A.5 – Trends in Annual Mean NO₂ Concentrations within AQMA No.4 St Paul's Street

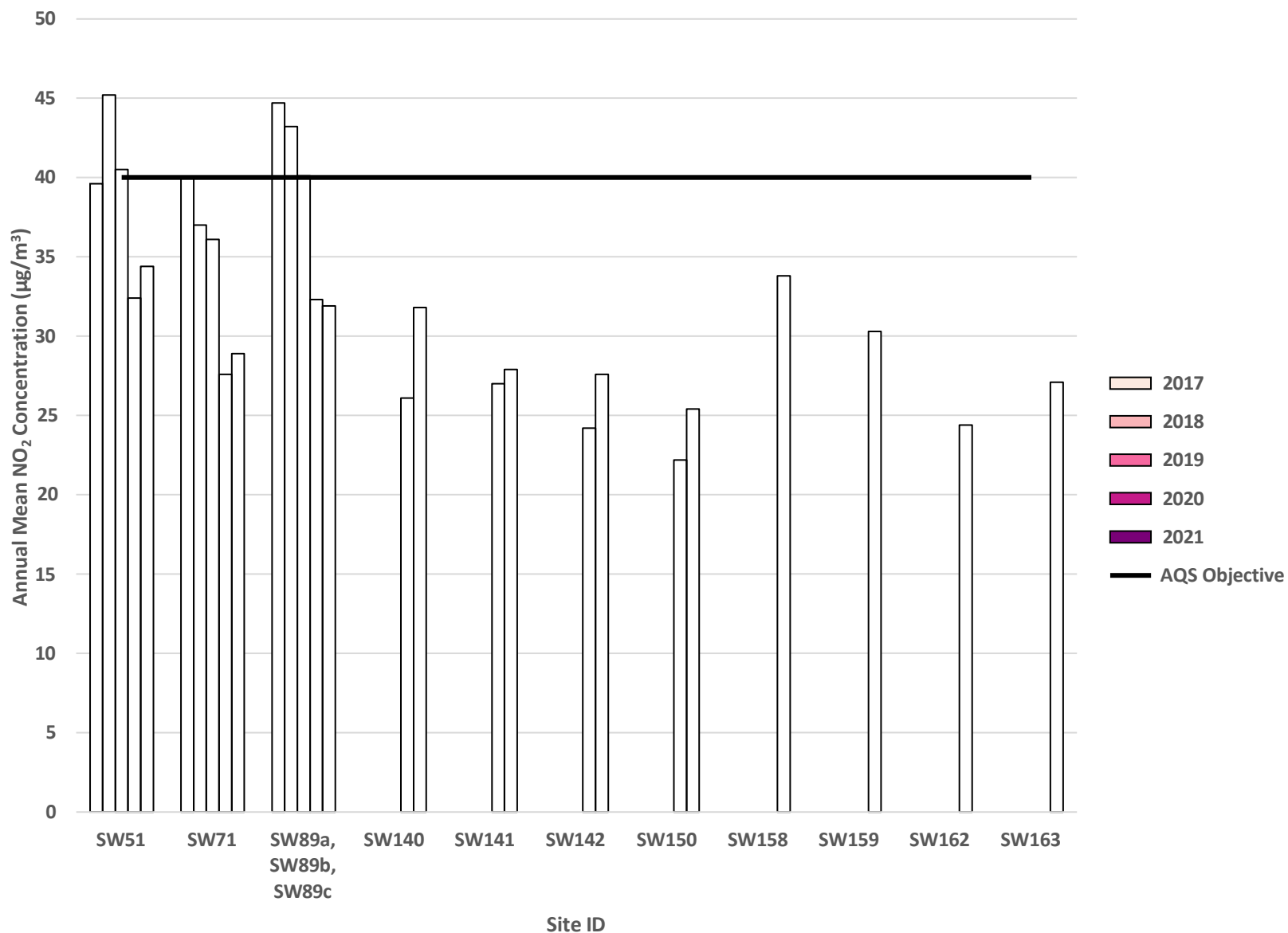


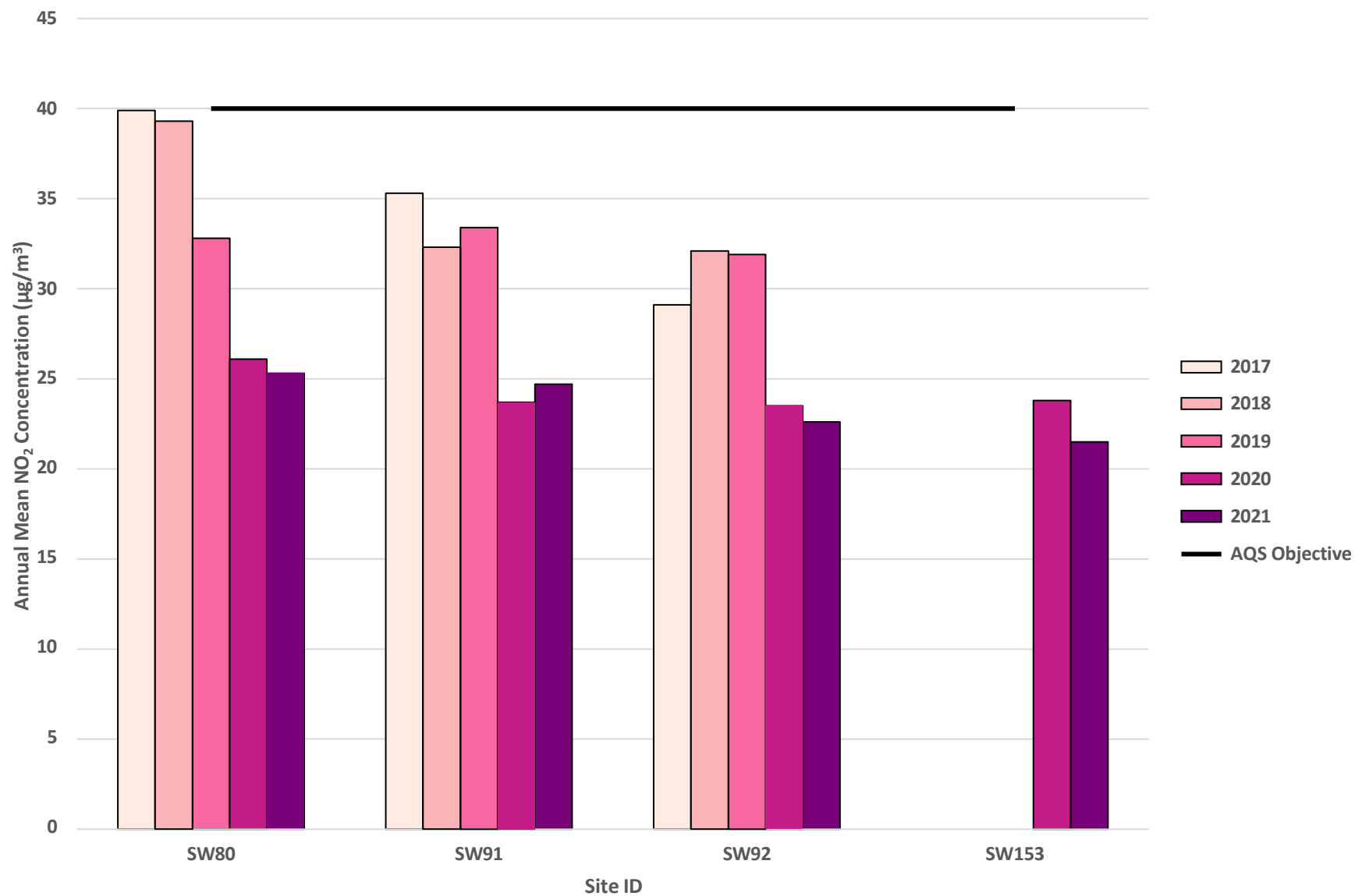
Figure A.6 – Trends in Annual Mean NO₂ Concentrations within AQMA No.5 Teynham

Figure A.7 – Trends in Annual Mean NO₂ Concentrations within AQMA No.7 Keycol Hill

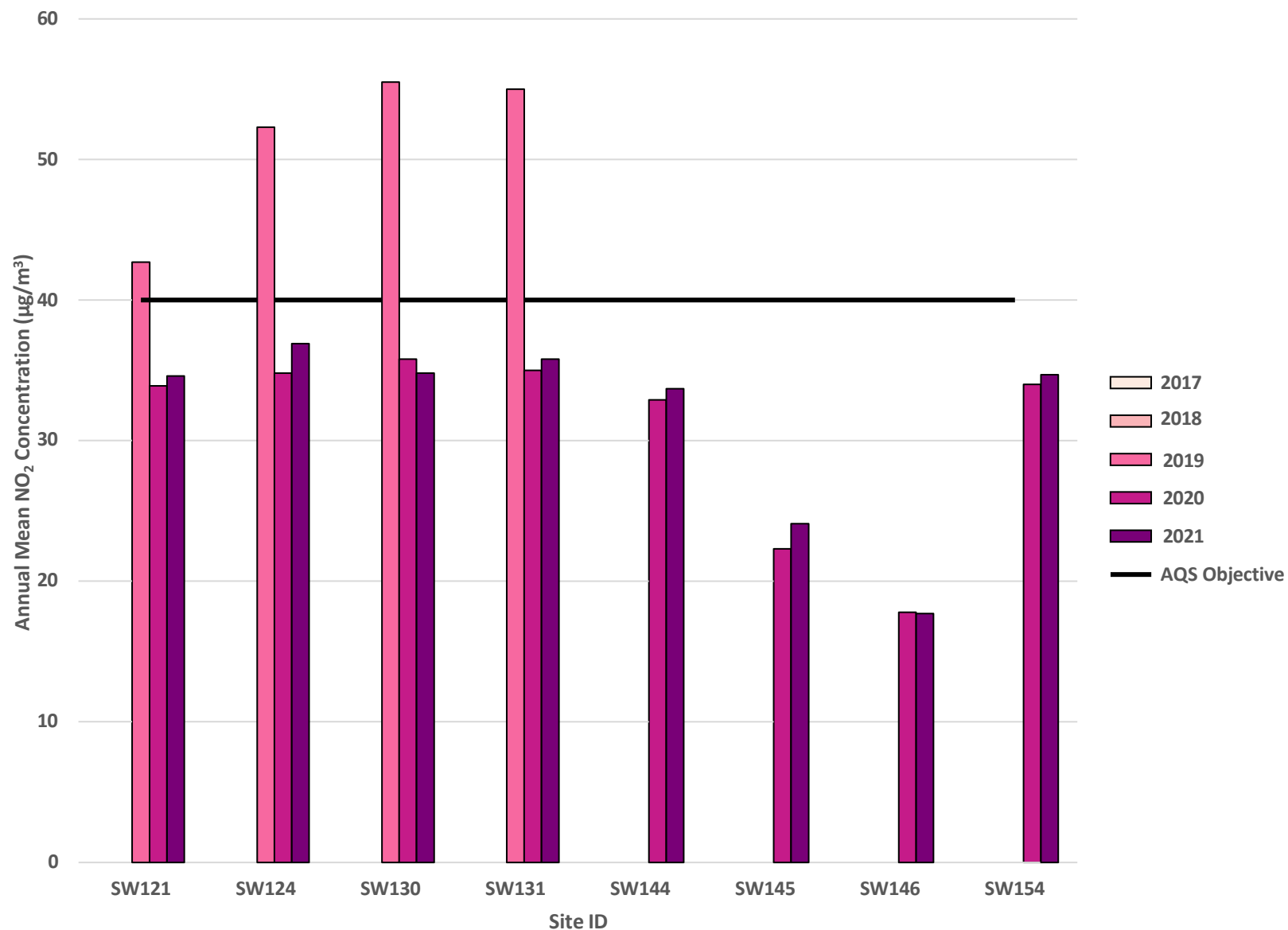


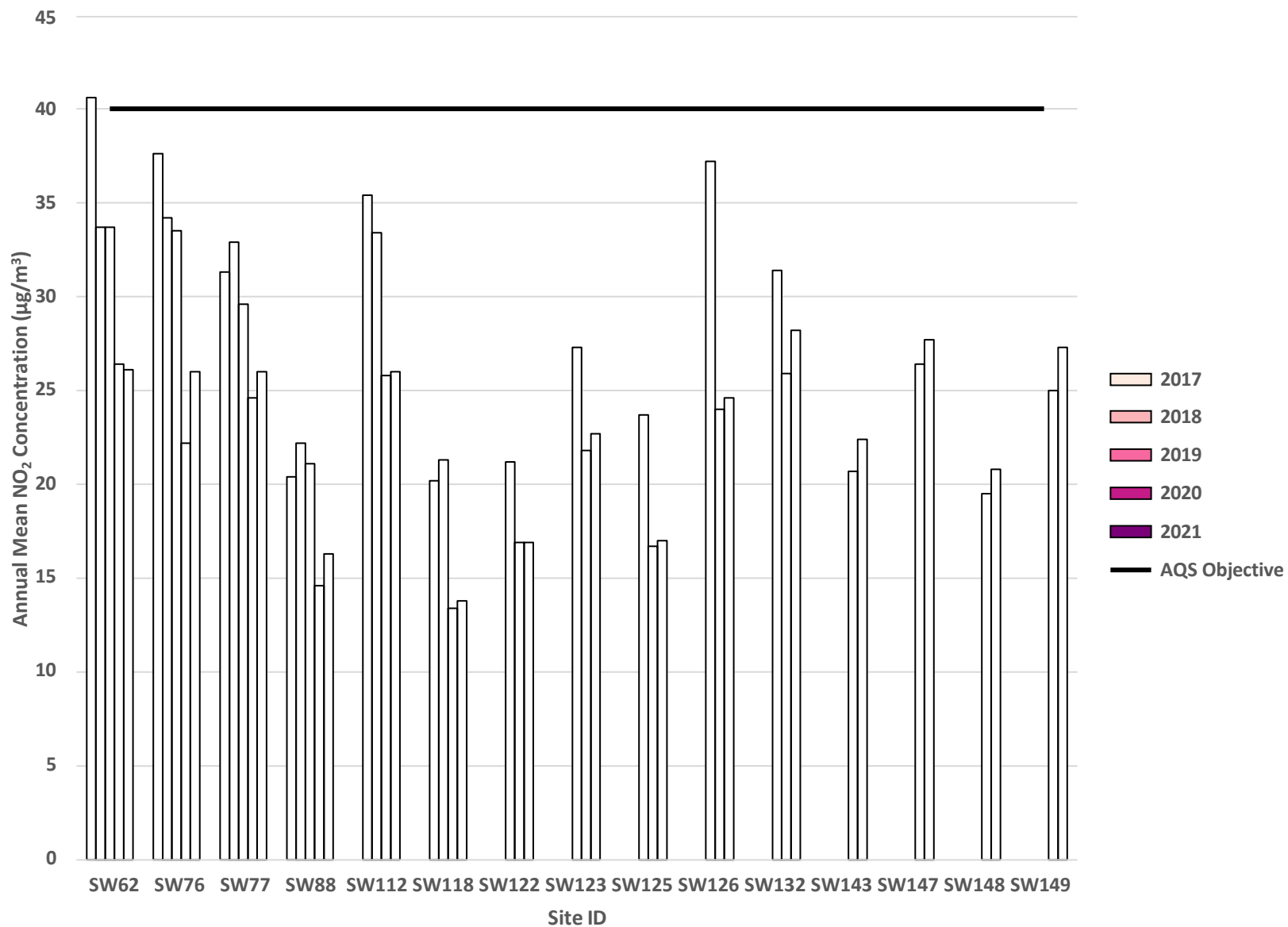
Figure A.8 – Trends in Annual Mean NO₂ Concentrations in Sittingbourne

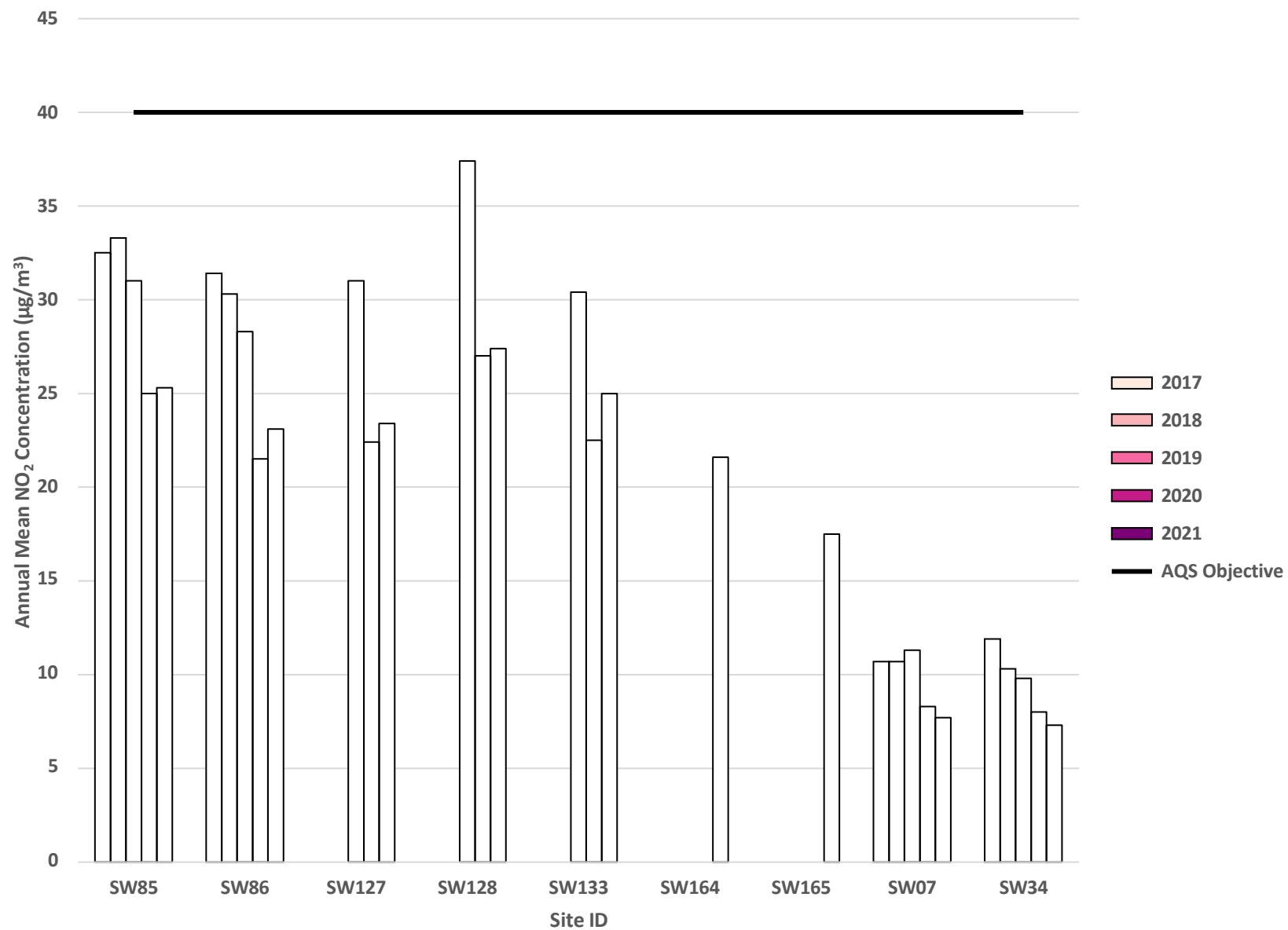
Figure A.9 – Trends in Annual Mean NO₂ Concentrations in Sheerness and Rural

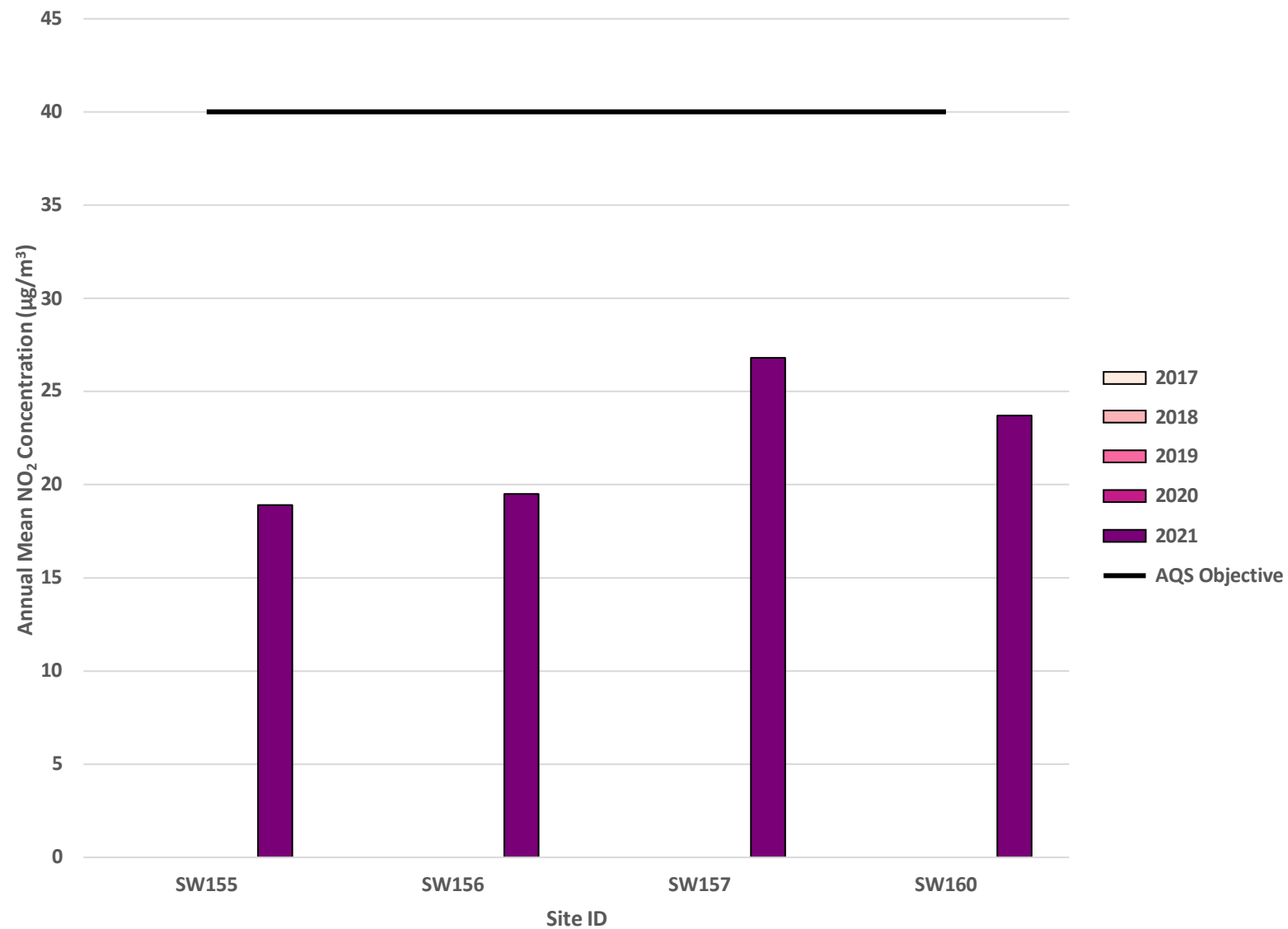
Figure A.10 – Trends in Annual Mean NO₂ Concentrations in Kemsley

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 2021 (%) ⁽²⁾	2017	2018	2019	2020	2021
ZW3	600360	160869	Roadside	100	99.2	N/A	0 (116.2)	0	0	1
ZW8	590264	164396	Roadside	100	96.2	1	0	0	0	0
ZW10	585970	164787	Roadside	73.1	73.1	-	-	-	-	0

Notes:

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

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

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

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

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

Table A.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 2021 (%) ⁽²⁾	2017	2018	2019	2020	2021
ZW3	600360	160869	Roadside	98.5	98.5	23	27.6	24.8	22.2	23.3
ZW8	590264	164396	Roadside	92.5	92.5	-	-	28.1	31.5	37.1
ZW10	585970	164787	Roadside	71.1	71.1	-	-	-	-	17.1

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

Notes:

The annual mean concentrations are presented as µg/m³.

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

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

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

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

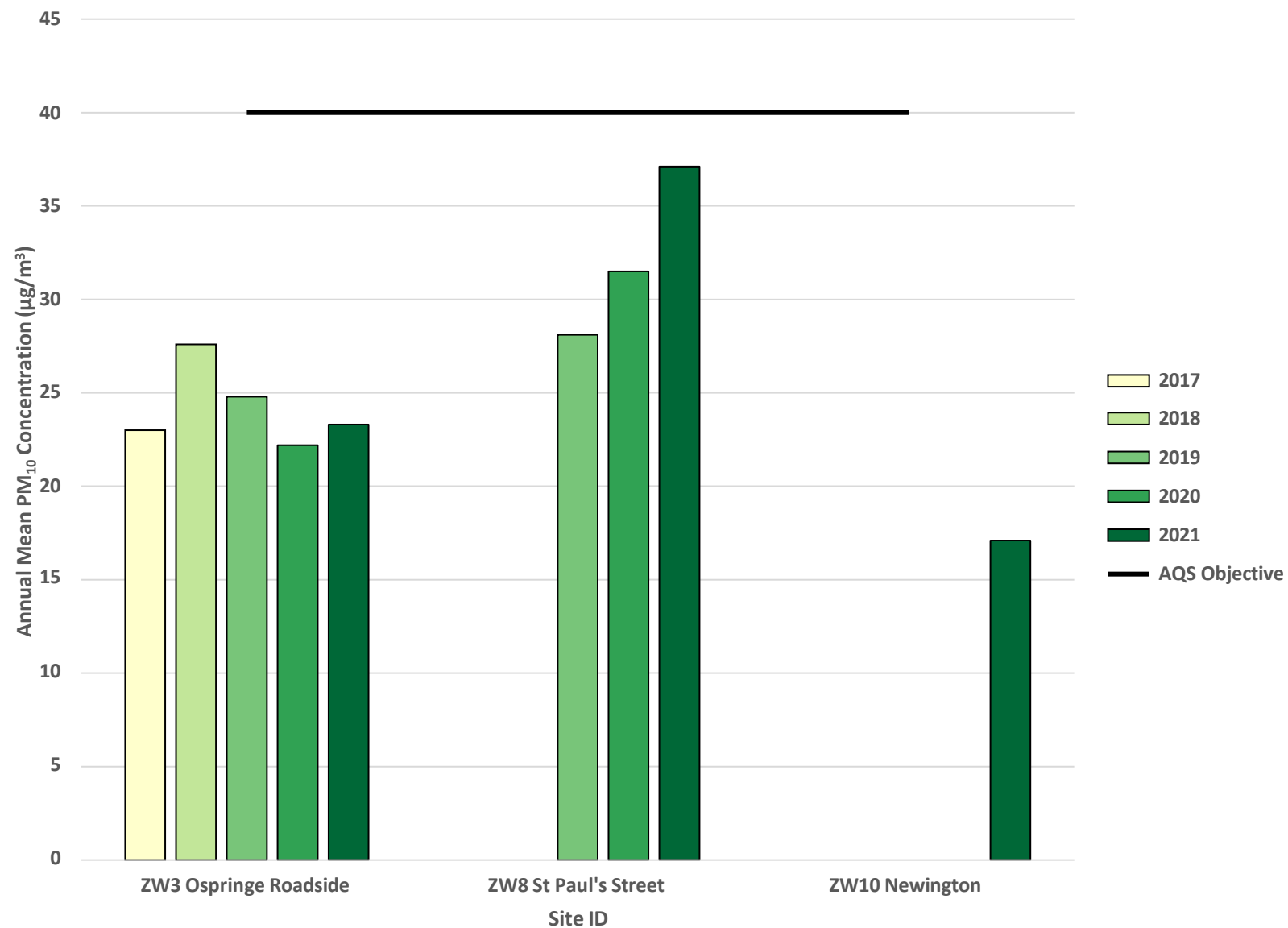
Figure A.11 – Trends in Annual Mean PM₁₀ Concentrations

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 2021 (%) ⁽²⁾	2017	2018	2019	2020	2021
ZW3	600360	160869	Roadside	100	98.5	5	5	15	13	12
ZW8	590264	164396	Roadside	100	92.5	0	11	42	59	59
ZW10	585970	164787	Roadside	71.1	71.1	-	-	-	-	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%).

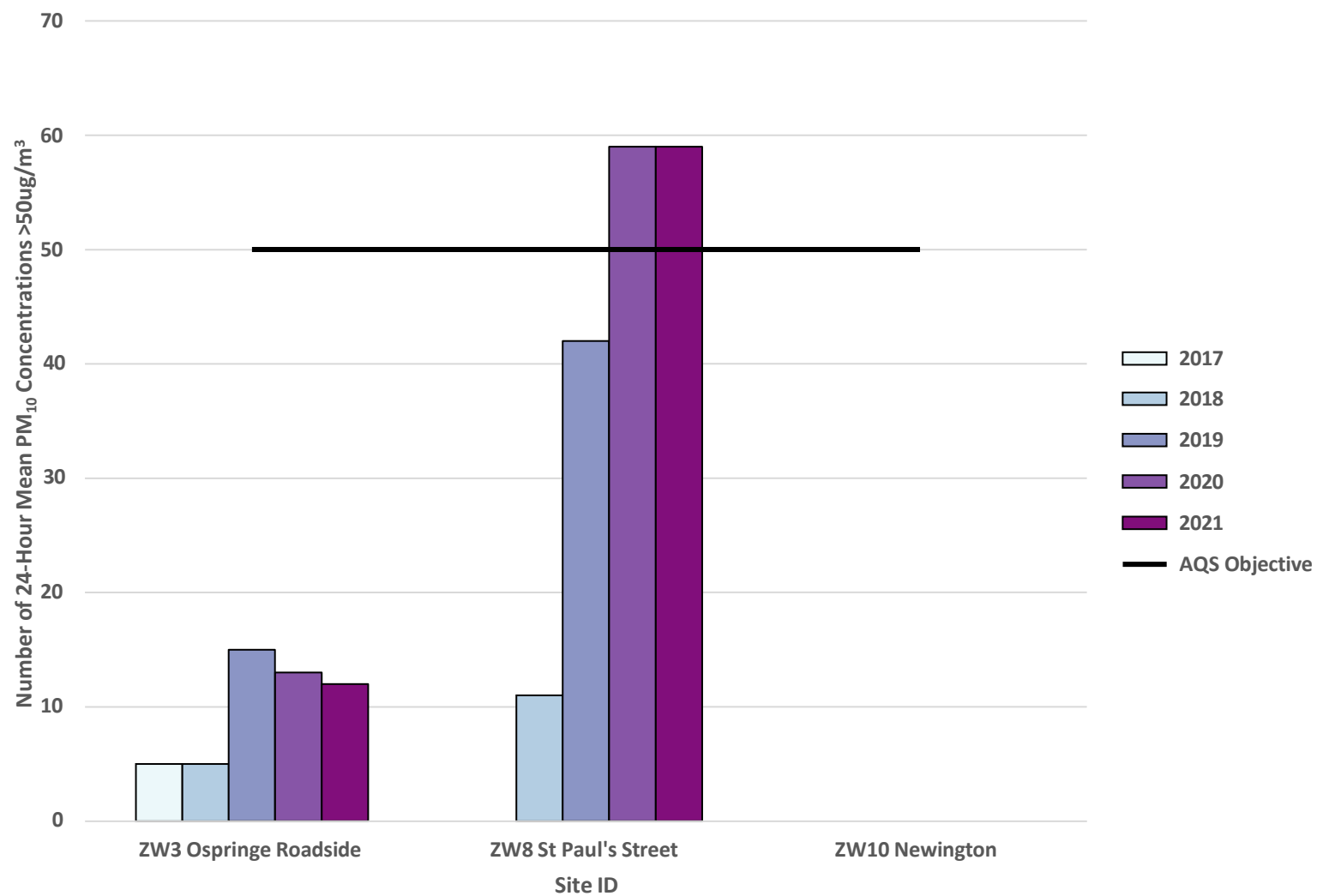
Figure A.12 – Trends in Number of 24-Hour Mean PM₁₀ Results > 50µg/m³

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 2021 (%) ⁽²⁾	2017	2018	2019	2020	2021
ZW8	590264	164396	Roadside	94.5	94.5	-	-	-	13.1	11.3
ZW10	585970	164787	Roadside	66.7	66.7	-	-	-	-	11.8

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

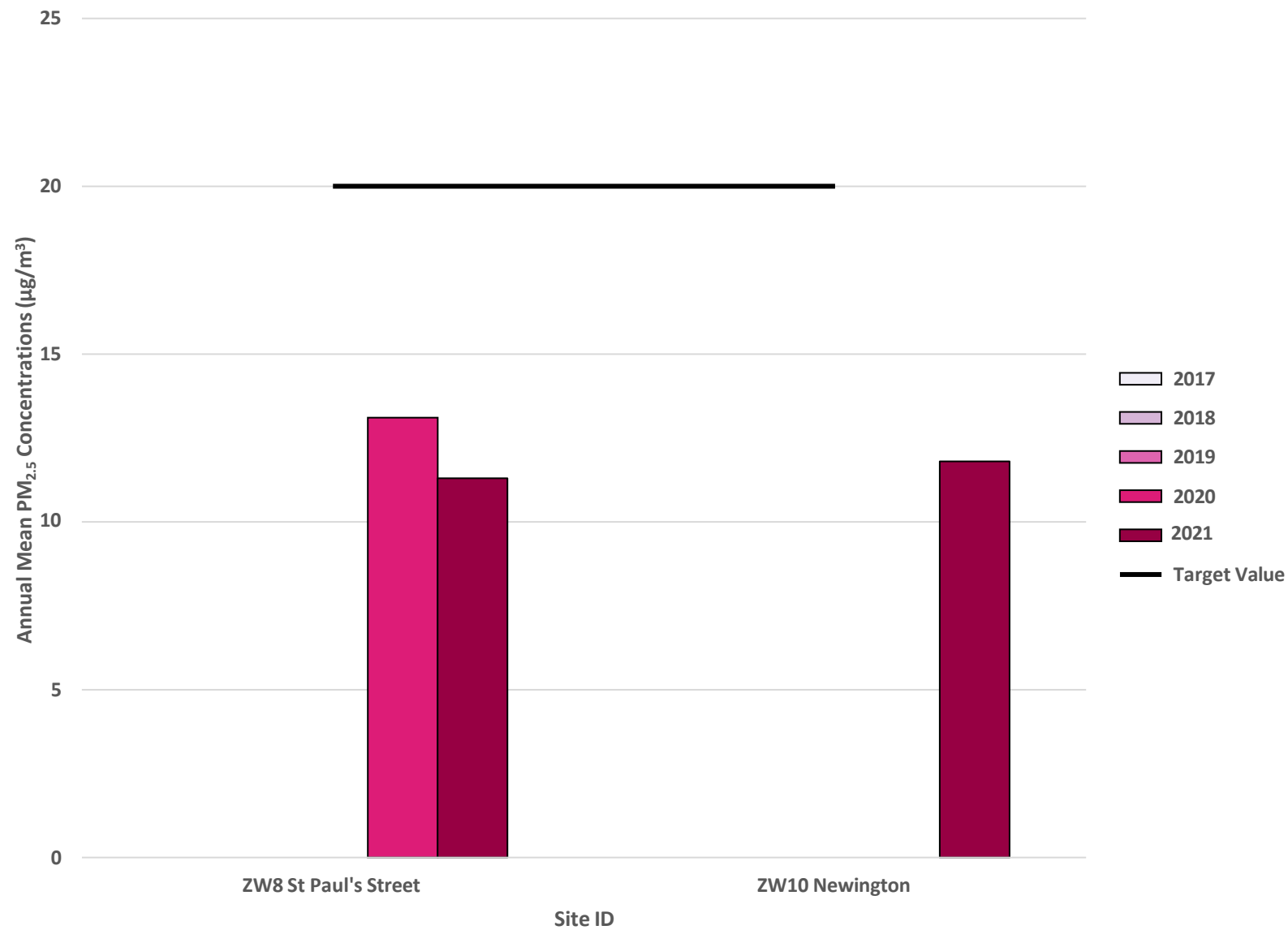
Notes:

The annual mean concentrations are presented as µg/m³.

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

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

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

Figure A.13 – Trends in Annual Mean PM_{2.5} Concentrations

Appendix B: Full Monthly Diffusion Tube Results for 2021

Table B.1 – NO₂ 2021 Diffusion Tube Results (µg/m³)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.77)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
AQMA No.1 Newington																		
SW19	585907	164794	42.7	40.0	35.1	36.2	39.1	29.8	32.1	33.8	22.8	41.5	44.1	39.2	36.4	27.9		
SW20a, SW20b, SW20c	585860	164816	27.1	-	25.0	27.9	26.8	22.2	16.3	17.4	13.5	25.6	35.0	27.6	25.0	19.1		Triplicate Site with SW20a, SW20b and SW42c - Annual data provided for SW20c only
SW37	585868	164803	38.4	37.0	30.8	34.5	32.0	32.2	28.8	23.4	19.5	32.4	39.4	32.4	31.7	24.3		
SW42a, SW42b, SW42c	585935	164787	51.4	36.4	43.2	46.0	42.5	47.9	42.2	37.3	27.3	46.7	55.4	47.8	43.2	33.1		Triplicate Site with SW42a, SW42b and SW42c - Annual data provided for SW42c only
SW45	585989	164774	43.2	36.9	39.2	39.6	38.0	39.2	35.9	32.8	21.2	41.8	-	42.6	37.3	28.6		
SW66	586083	164745	41.9	37.5	33.0	36.6	35.4	31.5	29.2	28.2	20.2	41.4	45.9	31.9	34.4	26.4		
SW78	585960	164788	41.3	38.6	37.1	43.1	36.2	39.4	32.4	19.0	22.2	30.0	47.7	34.4	35.1	26.9		
AQMA No.2/6 Ospringe Street Faversham Area																		
SW28	600223	160885	52.2	46.8	44.1	43.4	22.0	52.7	49.3	40.3	50.2	41.4	53.9	41.4	44.8	34.3		
SW30a, SW30b, SW30c	600383	160869	35.6	32.0	28.8	27.4	14.7	31.8	28.3	16.3	36.7	29.5	44.2	35.8	30.0	23.0		Triplicate Site with SW30a, SW30b and SW42c - Annual data provided for SW30c only
SW29	600286	160868	47.7	40.0	38.1	33.7	19.2	38.9	28.7	30.8	46.4	42.3	45.6	42.4	37.8	29.0		
SW31	600444	160848	43.8	43.6	38.9	48.0	19.1	44.9	33.4	36.4	46.8	32.0	45.6	37.9	39.2	30.0		
SW32	600420	160845	37.2	34.2	34.9	28.4	15.5	30.3	27.4	27.4	36.3	36.2	39.7	36.5	32.0	24.5		
SW96	600358	160859	45.0	33.5	39.1	32.3	17.8	36.7	31.4	30.6	38.4	37.3	36.8	38.7	34.8	26.7		
SW98	601818	160474	32.5	33.6	29.1	33.2	18.7	32.3	22.3	24.8		34.5	30.5	35.0	29.7	22.7		
SW117	601629	160525	33.8	29.5	26.2	31.5	13.0	27.8	40.0	31.1	27.9	22.7	25.2	17.3	27.2	20.8		
SW119	600568	160819	30.1	18.5	23.6	17.5	12.2	22.4	18.8	21.5	26.9	26.1	32.7	26.0	23.0	17.6		
SW120	600456	160836	46.7	37.4	39.4	34.0	20.3	40.6	38.0	33.0	45.3	41.4	41.4	42.3	38.3	29.4		

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.77)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
SW135	600317	160861	48.8	42.4	45.4	34.8	21.9	32.6	36.8	34.2	49.6	40.8	47.3	45.2	40.0	30.6		
SW136	601491	160570	46.7	44.0		33.2	14.7	29.8	31.9	30.6		35.8	53.6		35.6	27.3		
SW137	601452	160487	48.9		51.5	23.2	7.9	24.7	22.2	14.3	46.1	39.4	40.0	35.9	32.2	24.7		
SW138	601739	161310	39.6		35.0		16.9	32.9		24.9	41.7	32.8	42.6	36.3	33.6	25.8		
SW139	601706	161334	37.6	31.3	34.7	29.9	14.5	30.0	26.8	20.9	39.2	32.9	39.1	35.8	31.1	23.8		
AQMA No.3 East Street																		
SW56	591453	163456	45.6	37.1	41.6	31.8	42.0	39.2	35.4	26.1	48.8	43.9	36.3	42.3	39.2	30.0		
SW151	591515	163451	36.1	30.1	27.8	24.4	23.2	27.0	23.8	17.6	31.1	23.0	35.1	28.0	27.3	20.9		
SW152	591423	163484	35.6		32.7	39.3	32.8	38.8		25.3	40.5	25.2		30.4	33.4	25.6		
AQMA No.4 St Paul's Street																		
SW51	590236	164408	53.3	39.5	44.4	43.9	39.9	50.6	38.3	36.4	54.3	38.2	55.3		44.9	34.4		
SW71	590096	164455	41.4	31.5	45.8	38.6	30.2	33.7	28.7	31.0	42.2	43.0	49.3		37.8	28.9		
SW89a, SW89, SW89c	590252	164397	45.0	47.9	41.7	42.4	43.1	43.1	35.3	33.8	47.7	41.5	45.4		41.7	31.9		Triplicate Site with SW89a, SW89b and SW89c - Annual data provided for SW89c only
SW140	590079	164367		45.2	41.6	44.9	34.9	41.6	30.8	32.6	51.8	43.4	48.4		41.5	31.8		
SW141	590071	164375	38.0	37.8		37.4	33.8	37.6	26.6	30.5	41.1	37.4	44.5		36.5	27.9		
SW142	590146	164397	39.0	31.4	36.2	41.7	32.4	39.3	26.0	25.0	44.8		45.0		36.1	27.6		
SW150	590203	164409	35.4	40.9	33.6	37.8	28.0	34.0	25.8	25.2	41.6	29.0			33.1	25.4		
AQMA No.5 Teynham																		
SW80	595160	162470		39.5	37.3	34.3	16.7	36.2	33.0			24.2	43.2	33.3	33.1	25.3		
SW91	595150	162461	42.7	38.2	32.3	30.2	15.3	25.3	31.5	25.0		38.2	39.4	37.1	32.3	24.7		
SW92	595195	162446	35.1	30.7	32.7	25.7	14.9	29.1	25.3	24.4	34.2	29.6	38.2	33.6	29.5	22.6		
SW153	594748	162602	34.1	35.2	25.6	25.0	13.5	24.7	24.8	20.0	31.8	32.4	37.4	32.3	28.1	21.5		

DT ID	X OS Grid Ref (Eastin g)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.77)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
AQMA No.7 Keycol Hill																		
SW121	587936	164268	43.8	41.8	47.6	47.5	47.5	52.6	43.9	47.4	29.3	43.0	51.2	45.7	45.1	34.6		
SW124	587774	164321	56.0	50.6	46.4	45.6	48.6	48.1	45.6	41.2	30.7	58.4	57.3	49.0	48.1	36.9		
SW130	587774	164321	61.3	54.6	49.4	43.7	5.8	49.6	46.3	36.9	29.5	56.5	59.2	51.6	45.4	34.8		
SW131	587774	164321	56.3	48.0	48.3	49.9	44.7	46.3	44.3	33.9	29.5	54.5	59.2	45.1	46.7	35.8		
SW144	587917	164277	41.8	46.5	41.2	42.2	46.2	47.7	47.1	43.1	30.9	53.6	44.6	43.1	44.0	33.7		
SW145	587692	164356	33.8	35.3	32.2	34.2	30.2	32.6	28.9	23.9	21.5		39.5	33.7	31.4	24.1		
SW146	587516	163885	25.7	25.8	24.6	26.3	20.0	14.3	14.3	18.7	26.7	21.3	34.8	24.9	23.1	17.7		
SW154	587874	164292	50.6	45.0	40.1	57.2	46.0	46.3	49.8	33.9	34.3	45.1	52.1	43.4	45.3	34.7		
Sittingbourne																		
SW62	588178	164236	46.2	28.6	36.4	30.7	29.9	29.1	29.6	24.7	20.4	38.5	56.7	38.7	34.1	26.1		
SW76	592211	163302	38.7	30.9	33.8	26.4	28.3	28.5	30.8	25.0	40.5	38.0	48.5	37.9	33.9	26.0		
SW77	591035	166521	39.6	34.7	39.9	35.9	32.1	35.6	26.0	20.3	42.2	26.8	42.2	32.4	34.0	26.0		
SW88	589320	165047	29.9	22.8	23.4	22.0	17.5	16.8	13.7	13.0	22.8	19.1	26.4	27.5	21.2	16.3		
SW112	588329	164188	44.9	38.4	31.4	37.7	32.4	34.3	30.8	22.1	19.6	36.8	42.8	36.1	33.9	26.0		
SW118	592791	163168	26.5	23.4	20.0	13.8	7.9	15.7	11.0	10.0	18.0	18.6	28.9	21.9	18.0	13.8		
SW122	588184	164250	30.4	22.4	24.5	22.8	18.3	22.2	16.6	16.6	11.7	23.2	32.0	23.5	22.0	16.9		
SW123	588153	164227	36.2	30.7	28.5	28.3	30.1	34.3	27.0	26.6	17.9	32.3	34.5	28.6	29.6	22.7		
SW125	592868	163132	28.3	26.9	23.9	20.7	11.0	24.2	11.0	15.9	26.3	21.6	33.1	23.5	22.2	17.0		

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.77)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
SW126	592837	163150	35.5	38.3	32.7		14.2	34.2	27.6	21.8	37.6	30.8	43.7	36.7	32.1	24.6		
SW132	590507	163849	37.2	39.2	38.3	31.9	34.1	38.2	31.6	29.1	45.5		43.7	36.0	36.8	28.2		
SW143	588388	164189	42.0	26.4	31.4	31.3	25.9	25.7		22.3	18.6	30.2	35.9	31.7	29.2	22.4		
SW147	590370	163877	40.2	36.4	37.6	38.5	36.9	33.0	28.9	19.9	45.0	38.9	40.3	38.2	36.2	27.7		
SW148	589163	164011	36.1	20.4	29.5			22.6	21.8	19.8	32.4	23.7	38.5		27.2	20.8		
SW149	589799	163856	40.0	37.3	37.9	33.9	32.3	35.0	28.7	27.9	41.5		40.8	35.9	35.6	27.3		
SW155	590292	166977	26.4	31.6	19.7	27.6		21.8		16.9	29.7	26.5	25.2	21.4	24.7	18.9		
SW156	590525	166298	25.8	29.5	25.9	27.5	20.3	19.6	20.3	18.2	29.9	26.4	34.9	27.5	25.5	19.5		
SW157	590428	166438	42.6	39.7	34.8	34.0	29.6	28.7		22.5	37.4		44.2	36.8	35.0	26.8		
SW158	590494	164416	45.2		42.1	41.9	39.9	41.2	38.2	38.0	52.4	42.5	57.1	47.3	44.2	33.8		
SW159	590568	164440	37.0	39.8	42.3		36.4	39.4	32.0	32.4	48.4	39.3	48.2	39.7	39.5	30.3		
SW160	590904	165192	40.2	31.1	31.2	29.8	27.2	31.4	24.5	16.9	33.5	29.0	43.0	33.2	30.9	23.7		
SW161	589167	164747	34.0	22.0	27.3	24.9	24.1	22.1	17.2	19.1	29.1	27.7	33.4		31.9	24.4		
SW162	590093	164438	48.9	41	39.6	35	35.1	35.4	29.6	28.9	45	36.4	45.9		38.3	29.5		
SW163	590850	163852	38.6	35.0	33.8	37.8	24.6	33.2	29.5	35.1	44.3	35.8	43.6	33.3	35.4	27.1		
Sheerness																		
SW85	591751	175009	39.5	36.9	35.2	33.2	16.6	34.4	31.6	25.6		32.8	43.2	34.2	33.0	25.3		
SW86	591723	175020	36.9	36.8	29.9	30.8	14.9	33.3		23.4	37.9	26.8	31.3		30.2	23.1		
SW127	593151	172962	31.9	31.8	32.1	30.8	15.7	33.8		18.4	41.6	29.8	38.4	31.9	30.6	23.4		
SW128	593092	172870	42.8	36.3	40.0		19.1	42.8	31.5	23.5	44.6	31.6	45.9	35.7	35.8	27.4		

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.77)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
SW133	592207	174597	41.1				16.2	30.8	25.6	25.2	36.4	35.6	45.1	37.3	32.6	25.0		
SW134	591889	174944	32.7			20.7									-	-		
SW164	593292	172897	38.4	29.1	31.3	23.6	13.8	24.2	21.6	21.9	29.8	30.3	43.2	31.1	28.2	21.6		
SW165	591396	172070	36.3	29.3	27.2	20.0	10.5			15.0	23.8				23.2	17.5		
Rural																		
SW07	600745	169572	13.7	12.6	9.1	8.9	3.0	8.1	7.3	6.1	11.4	10.1	16.9	13.4	10.1	7.7		
SW34	606624	161110	11.9	12.2	9.5	9.3	3.4	7.9	7.6	5.8	10.0	10.4	13.8	12.2	9.5	7.3		

☒ 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.TG16.

☒ Local bias adjustment factor used.

☐ National bias adjustment factor used.

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

☒ Swale Borough Council confirm that all 2021 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 Swale Borough Council During 2021

The Council has identified a number of planning applications approved through 2021 which may have an impact on air quality concentrations. The majority of these planning applications relate to residential developments, including (but not limited to) the following:

16/506946/FULL

Proposal:

Proposed mixed use development comprising 165 no. residential apartments, medical centre, and pharmacy across three blocks with associated parking and landscaping, refurbishment of existing Bell House with retention of offices and an additional storey.

Address:

Bell House, Bell Road, Sittingbourne, Kent, ME10 4DH

16/507689/OUT

Proposal:

Outline Application (with all matters reserved other than access into the site) for mixed use development including up to 300 dwellings; employment area (Use Classes B1(a), B1(b) and B1(c) (offices, research and development, and light industrial) (up to 26,840sqm); sports ground (including pavilion/changing rooms); open space (including allotments and community orchard); access, including new link road and roundabout on A2; other vehicular/pedestrian / cycle accesses (including alterations to Frogmal Lane); reserve site for health centre; and associated parking and servicing areas, landscaping, wildlife areas, swales and other drainage / surface water storage areas, and related development

Address:

Land Between Frogmal Lane And Orchard View, Lower Road, Teynham, Kent, ME9 9TU

18/502372/EIOUT

Proposal:

Outline application for the development of up to 115 dwellings and all necessary supporting infrastructure including emergency access, roads, footpath and cycle links, open space, play areas and landscaping, parking, drainage and all utilities and surface infrastructure works. All detailed matters are reserved for subsequent approval except (a) mitigation of impacts on Great Crested Newts; (b) vehicular access to Grovehurst Road and (c) extraction of brickearth.

Address:

Land At Great Grovehurst Farm, Grovehurst Road, Sittingbourne, Kent, ME9 8RB

18/504562/FULL

Proposal:

Alterations and extensions to existing residential care home to provide 12no. bedrooms and 2no. self contained two bedroom units with associated facilities.

Address:

Ellens Court, Lady Margaret Manor Road, Doddington, ME9 0NT

18/506677/HYBRID

Proposal:

Hybrid application - Planning permission is sought for change of use of existing dwelling house to replacement farm shop with office above, and conversion of toilet block to farm produce store (167 sqm) and Outline planning permission is sought for demolition of existing agricultural buildings and farm shop, erection of up to 19 dwellings, erection of implement store, associated access road, parking, pedestrian footpath, and landscaping (access and layout being sought only).

Address:

Halfway Egg Farm, Featherbed Lane, Sittingbourne

19/501693/FULL

Proposal:

Erection of apartment building comprising 32no. apartments with associated hard and soft landscaping.

Address:

Land To The Rear Of 45-55, High Street, Sittingbourne, Kent, ME10 4BJ

19/501845/OUT

Proposal:

Outline application (All Matters Reserved) for the demolition of existing house and the erection of 23 dwellings with access road on land to the rear.

Address:

2 Bramblefield Lane, East Of Iwade Pass, Sittingbourne, Kent, ME10 2SU

19/503120/REM

Proposal:

Reserved Matters of access, appearance, landscaping, layout, and scale for erection of 171 dwellings on land at Parcel G pursuant to outline application SW/13/1455.

Address:

Parcel G, Land At Harps Farm , Land Off Larch End And Lavender Avenue, Minster-on-sea, Kent

19/504831/FULL

Proposal:

Redevelopment of the site for the erection of 11 dwellings, to include the demolition of the existing agricultural buildings (except the Threshing Barn), and dismantling, relocation, rebuilding and conversion of the Threshing Barn to residential use, with associated parking barns, parking, repairs to boundary wall with Scocles Court Manor, landscaping, access road and alterations to existing vehicular access.

Address:

Land At Scocles Farm, Scocles Road, Minster-on-sea, Sheerness, Kent, ME12 3RU

19/505343/FULL

Proposal:

Demolition of the existing building and erection of an apartment block comprising 12no. affordable housing units including associated access, parking, and landscaping, associated drainage, and earthworks.

Address:

Ats Euromaster Ltd, Crown Quay Lane, Sittingbourne, Kent, ME10 3DP

19/506047/REM

Proposal:

Approval of Reserved Matters following outline application 15/507059/OUT for the erection of 95no. dwellings, comprising a mixture of two-storey semi-detached, terraced, and detached houses with a mix of 2no., 3no. and 4no. bedrooms. (Appearance, Landscaping, Layout and Scale being sought).

Address:

Land To The North Of Plover, Minster-on-sea, Kent, ME12 3BT

20/501033/REM

Proposal:

Approval of Reserved Matters of appearance, landscaping, layout, and scale following an outline application 16/505280/OUT for residential development (up to 33 dwellings), and open space; including associated access (vehicular / cycle / pedestrian), alterations to levels, surface water attenuation features (including swales), landscaping and related development.

Address:

Land At Swale Way, East Hall Farm, East Hall Lane, Footpath, Sittingbourne, Kent, ME10 3TJ

20/504614/REM

Proposal:

Approval of Reserved Matters for 106 no. one, two, three, four and five bedroom houses and apartments, together with associated roads, parking, and landscaping (appearance, landscaping, layout, and scale being sought) - pursuant of Hybrid Application SW/14/0257.

Address:

Phase 2A Faversham Lakes, Former Brett Aggregates Oare Mineral Workings, Ham Road, Faversham, Kent ,ME13 7TS

20/505297/FULL

Proposal:

Retrospective planning application for residential development of 30 residential units including associated internal access roads, parking and landscaping, associated drainage,

and earthworks. (Revision to layout approved under references 16/507877/FULL & 19/500383/FULL).

Address:

Plots 163 - 182 & 209 - 215 , Cambria Crescent & Parrett Avenue, Regents Quay, Sittingbourne, Kent

In addition, the Council identified three planning applications relating commercial premises, and a planning application for a new crematorium:

20/502407/FULL

Proposal:

The construction of thirteen commercial units (for general industrial, storage and distribution, and light industrial use), and associated parking and landscaping.

Address:

Land South East Of A299 Slip Road, Off Thanet Way, Highstreet Road, Hernhill, Kent

ME13 9EN20/503666/FULL

Proposal:

Construction of a new crematorium, associated car park, access road and gardens of remembrance.

Address:

Land Off, Staple Street, Hernhill, Kent, ME13 9HY

20/503707/HYBRID

Proposal:

Hybrid planning application consisting of - Outline planning permission (with all matters reserved except access) for commercial development, accesses and roads, parking, associated services, infrastructure, earthworks, and landscaping - Full planning permission for the erection of a manufacturing facility, associated parking, services, infrastructure, landscaping, and earthworks.

Address:

Kent Science Park, Shimmin Road, Sittingbourne, Kent

ME9 8BZ

20/505778/FULL**Proposal:**

The extension of Waterham Business Park comprising the change of use of the land from agricultural to industrial, together with the erection of 3no. industrial buildings and the provision of parking (utilising existing access).

Address:

Land Adjoining Waterham Business Park, Highstreet Road, Hernhill, Kent, ME13 9EJ

Additional Air Quality Works Undertaken by Swale Borough Council During 2021

CAZ Feasibility Study¹⁰

This work was based on a 2019 baseline and showed that air quality along the A2 is expected to improve significantly over the next 3 years out to 2022 as the vehicle fleet renews and the proportion of vehicles of the latest Euro emission standard increases significantly. However, it was recognised there is uncertainty in the modelling and exploring this through site-specific adjustment at monitoring locations and a sensitivity test with a slower fleet turnover indicates that there is a risk of remaining exceedances especially in the St Paul's Street AQMA.

As such there is still a need to take further action to reduce transport related emissions and concentrations along the A2. The implementation of a Charging Clean Air Zone would reduce concentrations and manage the risk of further exceedances. However, the overall economic cost of these measures would be high (£30 million for a CAZ B and £118 million for a CAZ D) and likely to be politically challenging to implement.

As such given the scale of the air quality challenge, largely around managing risk rather than tackling significant exceedances, these would appear to be a disproportionate response. This suggests that a more appropriate approach is to implement a package of non-charging measures which have been shown to have about twice the benefit of the CAZ B, in terms of air quality, but at a similar economic cost. It is also clear that there would be

¹⁰ <https://services.swale.gov.uk/meetings/documents/s16026/CAZ%20Appendix%20I.pdf>

further benefits for example in terms of health from active travel that have not been accounted for here.

QA/QC of Diffusion Tube Monitoring

The diffusion tubes for the year 2021 were supplied and analysed by SOCOTEC Didcot, the tubes were prepared using the 50% Triethanolamine (TEA) in acetone preparation method. All results have been bias adjusted and annualised where required before being presented in Table A.4.

SOCOTEC participates in the AIR-PT scheme which is an independent analytical proficiency-testing (PT) scheme, operated by LGC Standards and supported by the Health and Safety Laboratory (HSL).

Defra and the Devolved Administrations advise that diffusion tubes used for Local Air Quality Management should be obtained from laboratories that have demonstrated satisfactory performance in the AIR-PT scheme. Laboratory performance in AIR-PT is also assessed, by the National Physical Laboratory (NPL), alongside laboratory data from the monthly NPL Field Intercomparison Exercise carried out at Marylebone Road, central London. A laboratory is assessed and given a 'z' score. A score of 2 or less indicates satisfactory laboratory performance.

Additionally, the precision of the NO₂ diffusion tubes supplied by SOCOTEC have been classified as 'good' for all observations during 2020. 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. Precision summary results are available from the LAQM website.

Diffusion Tube Annualisation

The [LAQM.TG\(16\)](#) states that annualisation is required for any site which has a data capture of less than 75%, but greater than 25%. Diffusion tube site SW165 recorded 58.3% data capture in 2021, therefore required annualisation. Annualisation was completed using version 1.2 of the 'Diffusion Tube Data Processing Tool'. Three continuous background monitoring locations were used, the three locations within a 50 mile radius selected to annualise the data are:

- London Westminster;
- Rochester Stoke; and

- London Bloomsbury

These continuous background monitoring sites were applicable to use as they all had >85% data capture and therefore could be used for annualisation. Table C.2 presents the annualisation summary, taken from the 'Diffusion Tube Data Processing Tool'.

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2021 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.TG16 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.

Swale Borough Council have applied a local bias adjustment factor of 0.77 to the 2021 monitoring data. A summary of bias adjustment factors used by Swale Borough Council over the past five years is presented in Table C.1.

Two triplicate co-location studies were used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO₂ continuous analysers, Newington 3 (ZW6) was not used in this co-location study due to being decommissioned in 2021, with a data capture of 26.4%. Within Swale each of the automatic analysers are collocated with diffusion tubes in triplicate:

Site Name	Site Code	Diffusion Tube Triplicate ID
Swale Ospringe Roadside	ZW3	SW30
St Paul's Street	ZW8	SW89

Local bias adjustment factor calculations is present in Table C.1.

Table C.1 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2021	Local	-	0.77
2020	Local	-	0.77

2019	Local	-	0.78
2018	National	03/18	0.77
2017	National	03/17 v2	0.77

NO₂ Fall-off with Distance from the Road

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

No diffusion tube NO₂ monitoring locations within Swale Borough Council required distance correction during 2021.

QA/QC of Automatic Monitoring

In 2021 the QA/QC of the automatic data were managed by Air Quality Data Management¹¹. The instrumentation was calibrated every two weeks.

Live and historic data are now available through the Kent Air Website: <https://kentair.org.uk/>

PM₁₀ and PM_{2.5} Monitoring Adjustment

The adjustments applied to the PM measurements are shown in the following table:

Site ID	Site	Pollutant	Instrument	Factor Applied
ZW8	St Paul's Street	PM ₁₀	TEOM	VCM Model
ZW8	St Paul's Street	PM ₁₀	BAM	A slope correction factor of 0.9662 is applied
ZW8	St Paul's Street	PM _{2.5}	BAM	Non Required
ZW3	Ospringe Roadside	PM ₁₀	TEOM	VCM Model

¹¹ <https://www.ukairquality.net/home/map>

Automatic Monitoring Annualisation

The LAQM.TG(16) states that annualisation is required for any site which has a data capture of less than 75%, but greater than 25%. Automatic monitoring site ZW10 recorded below the acceptable data capture in 2021 for NO₂, PM₁₀ and PM_{2.5}, therefore required annualisation. Annualisation was carried out for the annual mean NO₂ due having a data capture of 73.1% (ZW10). ZW10 was also annualised for PM₁₀ and PM_{2.5} due to low data capture of 71.1% (PM₁₀) and 66.7% (PM_{2.5}). Three continuous background monitoring locations were used, the six locations within a 50 mile radius were selected to annualise the data:

- Canterbury (NO₂);
- Southend on Sea (PM₁₀ and PM_{2.5});
- London Westminster (NO₂);
- Rochester Stoke (NO₂, PM₁₀ and PM_{2.5});
- London Bloomsbury (PM₁₀); and
- Eastbourne (PM_{2.5}).

These continuous background monitoring sites were applicable to use as they all had >85% data capture and therefore could be used for annualisation. Table C.2, Table C.3 and Table C.4 presents the annualisation summary.

NO₂ Fall-off with Distance from the Road

As no automatic NO₂ monitoring locations within Swale Borough Council measured a NO₂ concentration greater than 36 µg m³ no distance correction during 2021 was required.

Table C.2 – Annualisation Summary (concentrations presented in $\mu\text{g}/\text{m}^3$) for Annual Mean NO_2

Site ID	Annualisation Factor London Westminster	Annualisation Factor Rochester Stoke	Annualisation Factor London Bloomsbury	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
SW165	0.9662	1.0184	0.9731	0.9859	23.2	22.8	

Site ID	Annualisation Factor Canterbury	Annualisation Factor Rochester Stoke	Annualisation Factor London Westminster	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
ZW10	1.0505	1.0591	1.0532	1.0543	21.5	22.6	

Table C.3 – Annualisation Summary (concentrations presented in $\mu\text{g}/\text{m}^3$) for Annual Mean PM_{10}

Site ID	Annualisation Factor Southend on Sea	Annualisation Factor Rochester Stoke	Annualisation Factor London Bloomsbury	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
ZW10	1.0502	1.0316	1.0258	1.0359	16.5	17.1	

Table C.4 – Annualisation Summary (concentrations presented in $\mu\text{g}/\text{m}^3$) for Annual Mean $\text{PM}_{2.5}$

Site ID	Annualisation Factor Southend on Sea	Annualisation Factor Rochester Stoke	Annualisation Factor Eastbourne	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
ZW10	1.0656	1.0464	1.0878	1.0666	11.1	11.8	

Table C.5 – Local Bias Adjustment Calculation

	Local Bias Adjustment Input 1	Local Bias Adjustment Input 2
Periods used to calculate bias	11	11
Bias Factor A	0.74 (0.7 - 0.79)	0.79 (0.71 - 0.9)
Diffusion Tube Bias Factor B	35% (27% - 43%)	26% (11% - 41%)
Diffusion Tube Mean ($\mu\text{g}/\text{m}^3$)	41.7	30.8
Mean CV (Precision)	5.0%	5.6%
Automatic Mean ($\mu\text{g}/\text{m}^3$)	30.8	24.5
Data Capture	96%	98%
Adjusted Tube Mean ($\mu\text{g}/\text{m}^3$)	31 (29 - 33)	24 (22 - 28)

Notes:

A combined local bias adjustment factor of 0.77 has been used to bias adjust the 2021 diffusion tube results.

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

Figure D.1 – Map of AQMAs in Swale

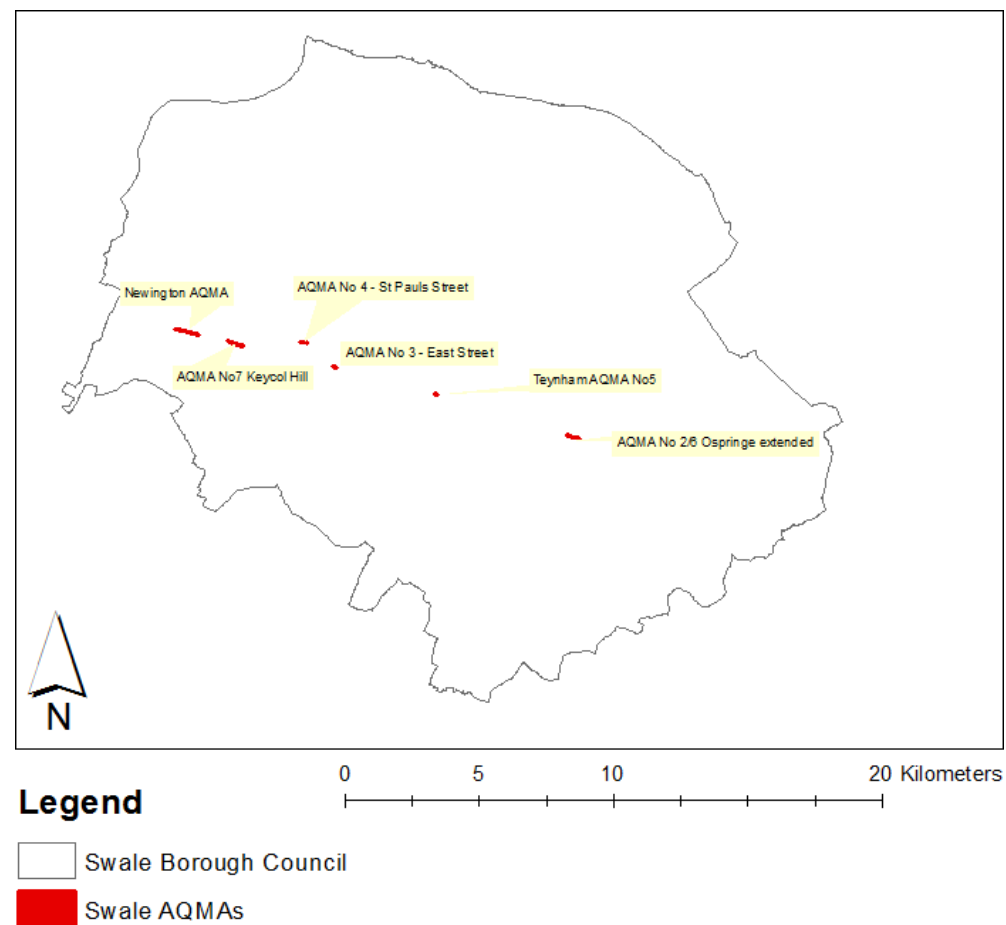


Figure D.2 – Map of Non-Automatic Monitoring Site across Swale

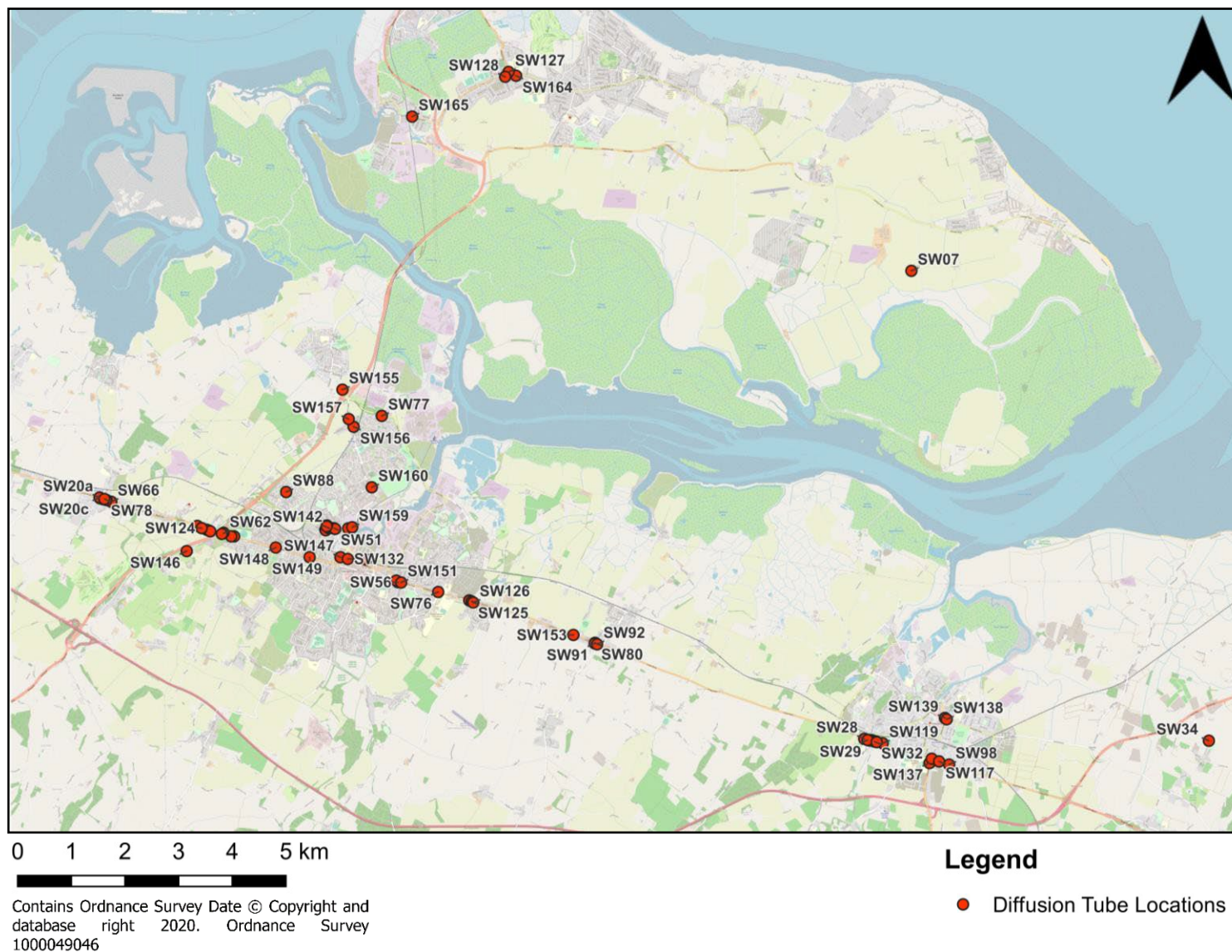


Figure D.3 – Maps of Automatic and Non-Automatic Monitoring Sites across Swale within and Nearby AQMAs




AQMA No.1 Newington



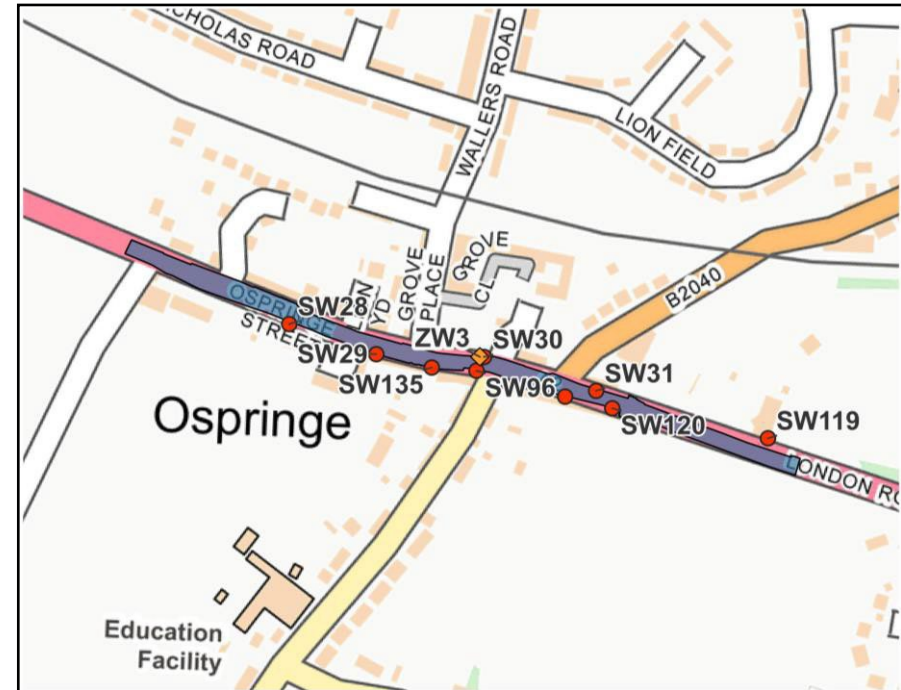
0 75 150 225 300 m

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1000049046

Legend

-  Diffusion Tube Locations
-  Automatic Monitoring Stations
-  AQMA Boundary




AQMA No.2/6 Ospringe Street, Faversham



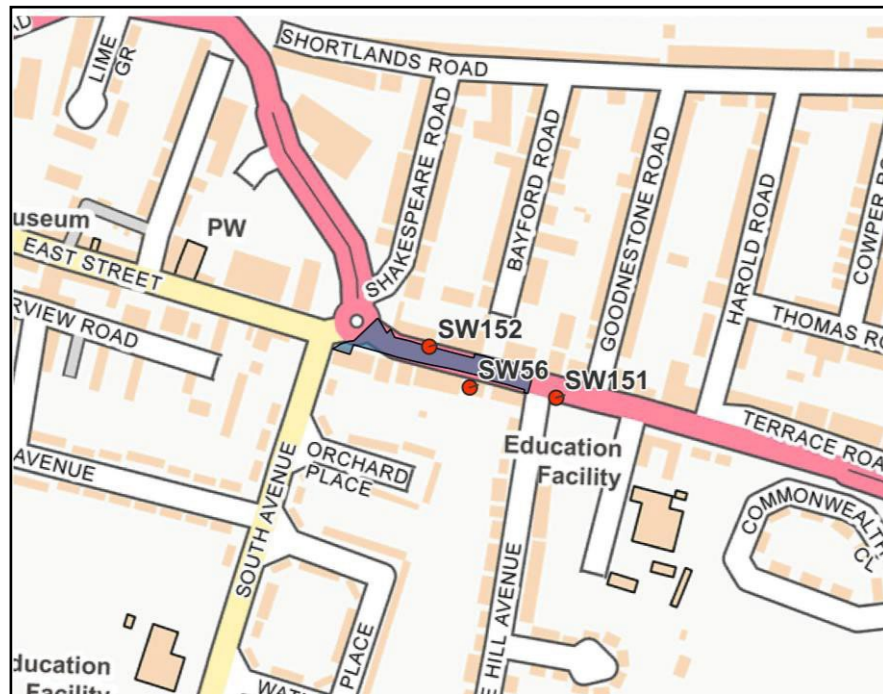
0 50 100 150 200 m

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1000049046

Legend

-  Diffusion Tube Locations
-  Automatic Monitoring Stations
-  AQMA Boundary

AQMA No.3 East Street, Sittingbourne

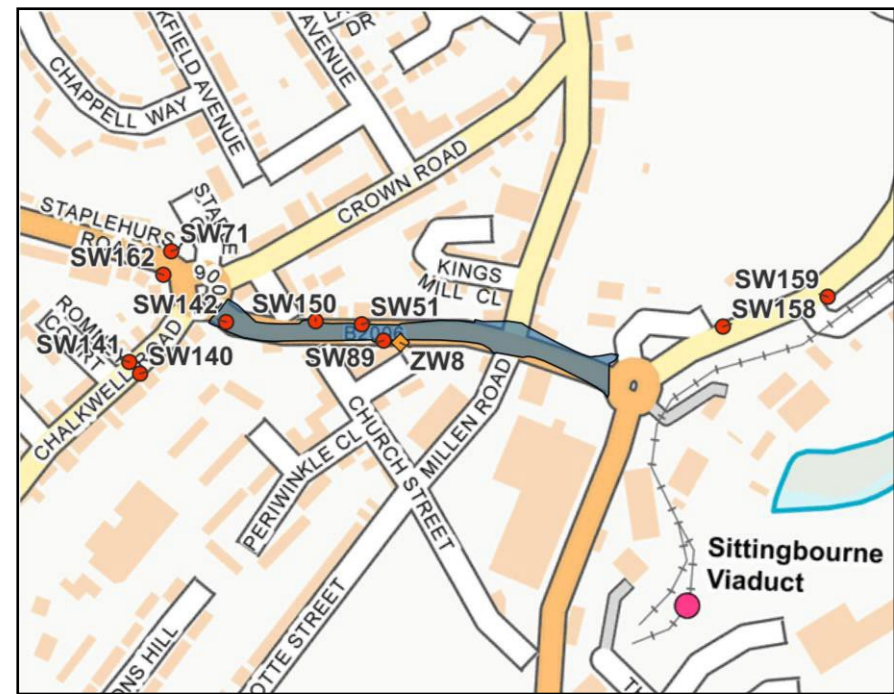


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Legend

- Diffusion Tube Locations
- AQMA Boundary

AQMA No.4 St Paul's Street

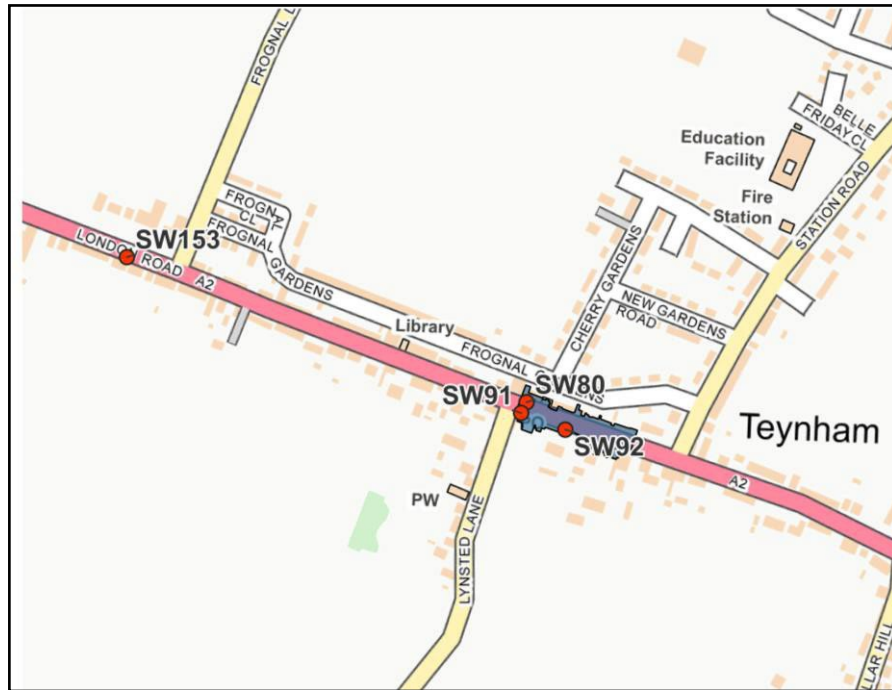


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Legend

- Diffusion Tube Locations
- ◆ Automatic Monitoring Stations
- AQMA Boundary

AQMA No.5 London Road Teynham



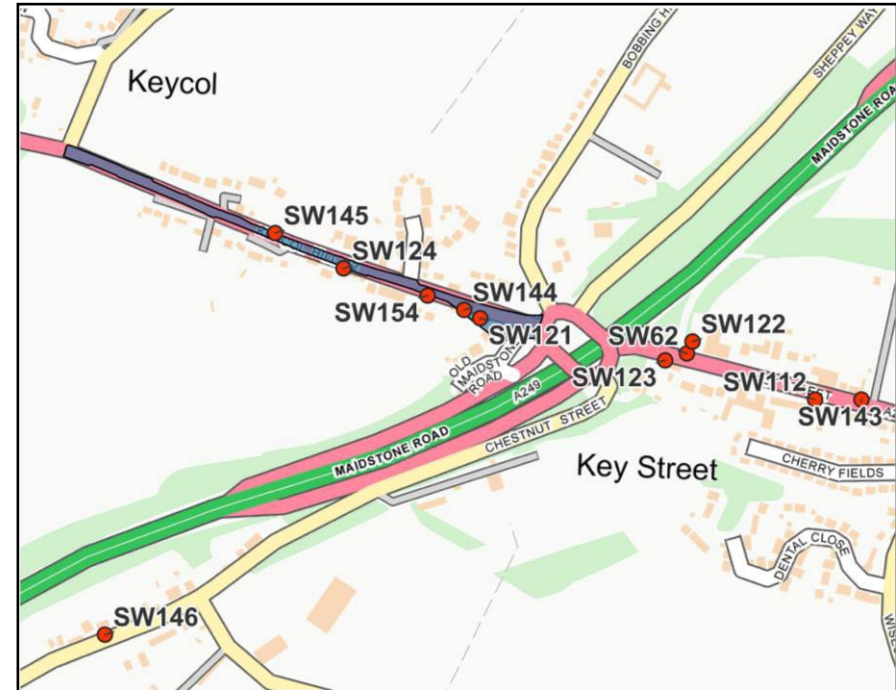
0 75 150 225 300 m

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Legend

- Diffusion Tube Locations
- AQMA Boundary

AQMA No.7 Keycol Hill, Sittingbourne



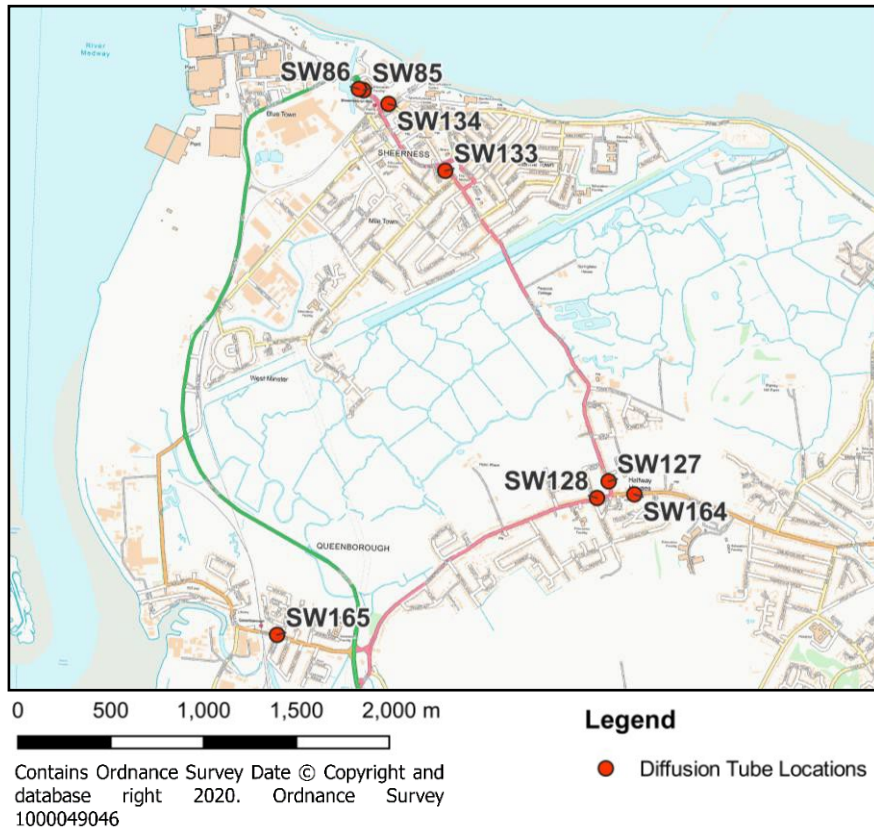
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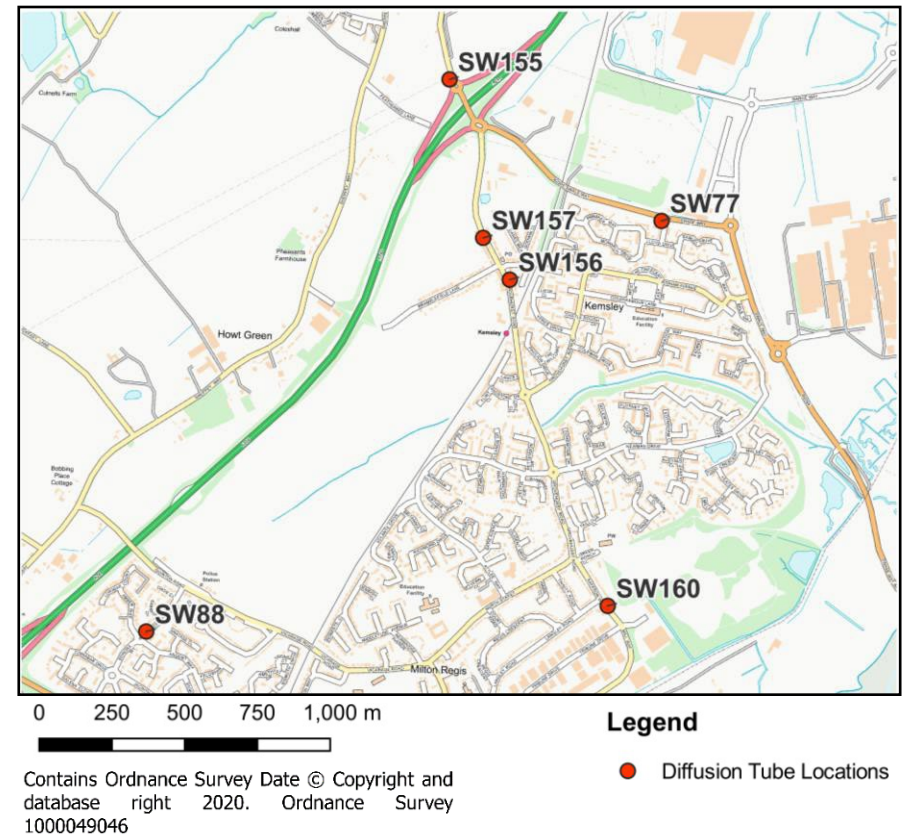
Legend

- Diffusion Tube Locations
- AQMA Boundary

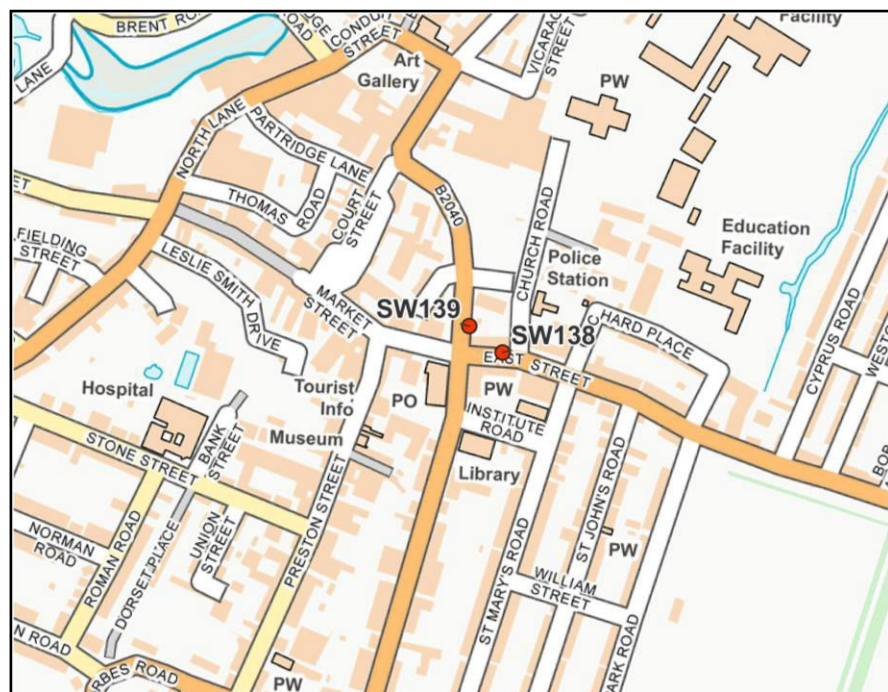
Sheerness, Isle of Sheppey



Kemsley, Kent



Faversham, Kent

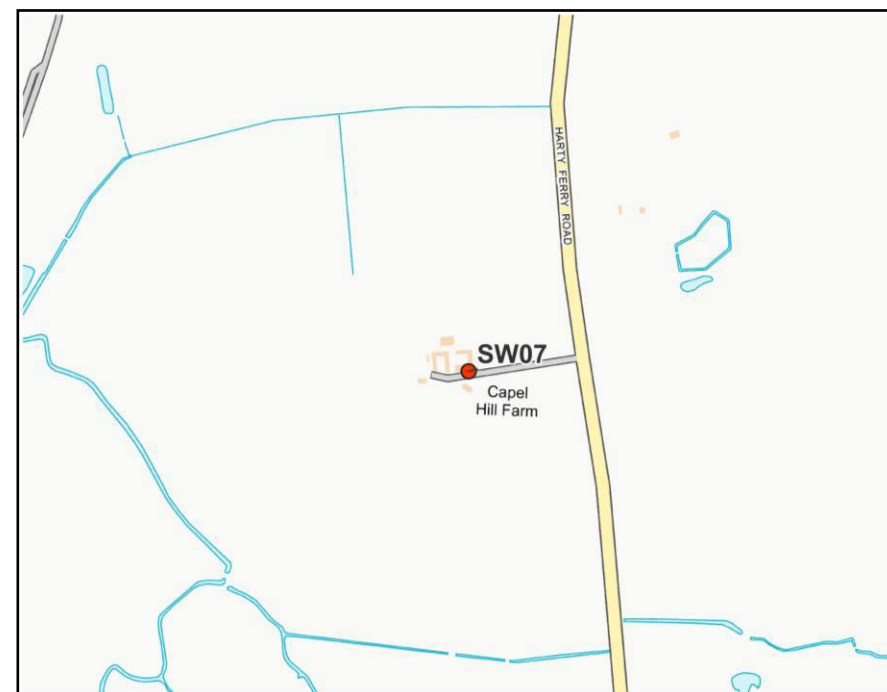


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Legend

● Diffusion Tube Locations

Rural: Capel Hill Farm, Kent

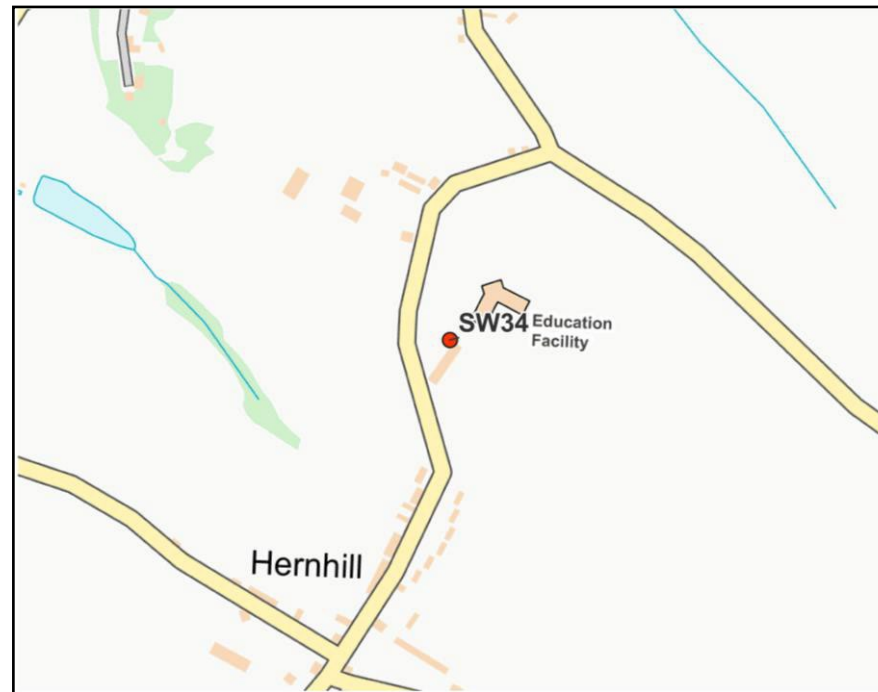


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Legend

● Diffusion Tube Locations

Rural: Hernhill, Kent



0 75 150 225 300 m

Legend

● Diffusion Tube Locations

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1000049046

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

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

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by National Highways
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
AQS	Air Quality Standard
SBC	Swale Borough Council
KCC	Kent City Council
EV	Electric Vehicle
ULEV	Ultra Low Emission Vehicle

References

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