



**2023 Air Quality Annual Status  
Report (ASR)**

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

**Date: June, 2023**

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## Executive Summary: Air Quality in Our Area

### Air Quality in Swale

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

The mortality burden of air pollution within the UK is equivalent to 29,000 to 343,000 deaths at typical ages<sup>2</sup>, with a total estimated healthcare cost to the NHS and social care of £157 million in 2017<sup>3</sup>.

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. We have developed actions and measures which can be categorised under the following topics:

- Air Quality standards within new Local Plan and Guidance;
- Encourage alternative modes to car use to reduce congestion and pollution;
- Initiatives that inform and protect local residents;
- Promoting Low Emission Transport;
- Anti-idling enforcement;
- Local LEV car-club; and
- Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles and EV recharging.

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

<sup>2</sup> Defra. Air quality appraisal: damage cost guidance, January 2023

<sup>3</sup> Public Health England. Estimation of costs to the NHS and social care due to the health impacts of air pollution: summary report, May 2018

To improve air quality across the whole borough, as well as in our six air quality management areas (AQMAs) various actions have continued through 2022. Stage 1 of the Local Cycling and Walking Infrastructure Plan (LCWIP) for the district has been completed. Stage 2 to 4 is to be completed during 2023/24. The Kentair website currently has 2,600 registered users and continues to promote events such as Clean Air Day and Kentair week to raise public awareness about air pollution. This includes joint working through the Kent and Medway Partnership Air Quality communications subgroup. Other actions include the Anti-idling campaign; promoting Defra funded 'Pollution Patrol' digital resource, aimed at children aged 5-11 (and their parents) to educate, raise awareness about air pollution and promote behaviour change; engagement with schools through Swale's Green School Forum; Faversham Car Club launch; and promoting Kent Revs Scheme for local businesses to trial EV vans to encourage EV uptake. Further information on actions is explained in section 2.2. and table 2.2.

There are current challenges in reducing car use within the Borough through improving public transport service and infrastructure. Swale Borough Council had thought further support would be provided through the Better Bus Strategy, however there were limitations on how much funding could be provided.

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

Effective partnership working with Kent County Council is essential for delivering mitigation measures. There remains some uncertainty over the level of commitment, both financial and staffing for some projects by KCC. Swale Borough Council is committed in continuing to liaise with our county partner to improve and bridge the gap in responsibility for solutions to poor air quality, as this should be shared across local government.

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

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 located where the levels of air pollution, specifically nitrogen dioxide (NO<sub>2</sub>), 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 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 centre.

Swale Borough Council has an extensive monitoring network for NO<sub>2</sub> and particulate matter (PM). Throughout 2022, this included measurements by automatic analysers at three locations and passive monitoring tubes at 76 locations with a total of 86 tubes deployed. Triplicate passive monitoring sites at four locations are positioned strategically to increase the accuracy of our monitoring data, as well as one set of triplicate tubes at different heights to see if a change in concentration exists. Within 2022, 2 new passive monitoring sites were deployed, these were Western Link, Faversham (SW168) and Lower Road Sheppey (SW166). These sites were chosen as they have been identified as congestion sensitive locations through previous onsite and Local Plan transport observations. Two sites were closed, these were 12-14 High St Sheerness (SW134) and Opposite Fruit Street, A2 Bapchild (SW118). These sites had been monitored for three years and consistently below 30µg/m<sup>3</sup>. Tube deployments are in line with the Defra Calendar.

NO<sub>2</sub> concentrations measured by three automatic monitoring stations remain below annual Air Quality Standard (AQS) objective mean concentration in 2022. ZW8 (St Paul's Street) decreased by less than 1%, ZW3 (Ospringle) increased by 5% and ZW10 (Newington) increased by 3% since 2021. Research on behalf of Defra identified that exceedances of the NO<sub>2</sub> 1-hour mean are unlikely to occur where the annual mean is below 60µg/m<sup>3</sup>. Further to this, there were no exceedances of the hourly mean AQS objective at the three sites in 2022.

During 2022, most non-automatic monitoring sites recorded concentrations below the NO<sub>2</sub> annual mean AQS objective of 40µg/m<sup>3</sup>. The highest concentrations were observed at Keycol Hill AQMA, with SW130 site exceeding and three other sites being within 10% of the AQS objective (SW124, SW131 and SW154). Two monitoring (SW42.3 and SW42.1) tubes at the same site location in Newington were within 10% of the AQS objective as shown in table A. 4.

There is an overall decrease in NO<sub>2</sub> concentrations since 2018, however since 2021, 58 sites reported a slight increase in NO<sub>2</sub> and 21 sites reporting a slight decrease. Other sites either showed no change or only had 1 year of data. The decreased change could be

influenced by changes in driving habits from the COVID-19 pandemic, whereby travel and working from home likely resulted in reduced concentrations in 2020 and 2021. Therefore, the 2022 reporting year is subject to pre-pandemic traffic volumes, which may explain the slight increase of NO<sub>2</sub> in 2022. In addition, relative to the recorded concentrations there are no sites likely to be at risk of exceeding the 1-hour mean AQS objective.

No exceedances were reported for the PM<sub>10</sub> annual mean AQS objective for all three automatic sites, ZW3 in Ospringe AQMA (2/3), ZW8 in St Paul's Street AQMA (4) and ZW10 in Newington AQMA (1). However, ZW8 for the last two years has been within 10% of the AQS objective at 37.1 µg/m<sup>3</sup> and 37.5 µg/m<sup>3</sup> retrospectively in 2021 and 2022.

Since 2018 site ZW8, the number of 24 – Hour exceedances has increased continuously with 62 exceedances during 2022. This is significantly more than the AQS objective of the 35 exceedances. ZW8 has been non-compliant to the 24 – Hour PM<sub>10</sub> AQS objective for four years. ZW3 has shown a decreasing trend in the daily number of exceedances of the 24-hour mean greater than 50µg/m<sup>3</sup> and reported 11 exceedances during 2022, below the AQS objective. Five exceedances were reported for ZW10.

There have been no exceedances of the annual AQS objective for PM<sub>2.5</sub> observed at ZW10 or ZW8, although there has been a slight increase over 2021 levels.

Regarding AQMAs, there has been compliance of the annual mean NO<sub>2</sub> concentrations being lower than 36µg/m<sup>3</sup> (i.e., lower than 10% of the annual mean NO<sub>2</sub> objective) at St Paul's Street AQMA (4) in the past three consecutive years, and four consecutive years at East Street (AQMA 3) with one of those years being within 10% of the annual mean NO<sub>2</sub> objective. Teynham (AQMA 5) has been compliance in the past five consecutive years with one of those years being within 10% of the annual mean NO<sub>2</sub> objective (shown in table A4 and A3).

Following on from Defra recommendations AQMAs 3 and 5 will be revoked as soon as possible as they have been compliant for four and five consecutive years respectively. As Defra advises the revocation of an AQMA should be considered following three consecutive years of compliance with the relevant objective as evidenced through monitoring. Where there have been no exceedances for the past five years, local authorities must proceed with plans to revoke the AQMA. The LAQM Technical Guidance 2022 is clear in this respect:

*"There should not be any declared AQMAs for which compliance with the relevant objective has been achieved for a consecutive five-year period." (Point 3.57, page 50)".*

AQMAs should identify areas where air quality objectives are not being met or are likely to be at risk of not meeting them. Keeping AQMAs in place longer than required risks diluting their meaning and impacting public trust in Local Air Quality Management.

Swale Borough Council have agreed to review data for another year for the compliant AQMA 4. If 2023 monitoring results for the AQMA is below  $36\mu\text{g}/\text{m}^3$  we will need to revoke following next year's ASR. This will provide better confidence in the data, as well as, considering national trends in emissions and local factors that may affect the AQMAs and including measures introduced as part of our Air Quality Action Plan update (2023 – 2028).

AQMAs 1 and 2/6 have also been compliant for three consecutive years thus they can also be considered for revocation, however the council remains vigilant of these areas close to exceeding the annual  $\text{NO}_2$  AQO within these AQMAs, particularly near sites SW42 (within AQMA 1) and SW28 (within AQMA 2/6) as they reported concentrations within 10% of the annual  $\text{NO}_2$  AQO. Should these AQMAs continue to remain compliant they should be revoked following next year's ASR.

Should this happen, then the Council will require a local Air Quality Strategy to ensure air quality remains a high-profile issue and to ensure it is able to respond quickly should there be any deterioration in condition, this can include continuing with air quality monitoring at strategic or sensitive sites and link to other key policies and strategies for air quality.

The update of Swale Borough Council's Air Quality Action Plan (AQAP) 2018 – 2022 will be completed during 2023 providing a new plan for the next five years (2023 to 2028). During 2022 Swale Borough Council assessed the current measures and consider new measures in the update. These were presented to Environment Committee in November 2022 and approved for public consultation. The public consultation was between the November 2022 to January 2023. The updated action plan will be reported on in the 2024 ASR.

In developing the Air Quality Action Plan, the Council followed the relevant Technical Guidance and Policy Guidance from DEFRA (TG22 and PG22, and previously TG16 and PG16, and have set up a steering group of relevant stakeholders to develop a list of actions. The Steering Group is composed of Swale and KCC officers from key service areas that can influence and impact air quality improvements.

The Steering group will meet quarterly throughout the lifetime of the action plan. Task and finish sub-groups, responsible for implementing and delivering specific measures, will meet more regularly and report back to the steering group.

## Actions to Improve Air Quality

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

The Environmental Improvement Plan<sup>4</sup> sets out actions that will drive continued improvements to air quality and to meet the new national interim and long-term PM<sub>2.5</sub> targets. The National Air Quality Strategy, due to be published in 2023, will provide more information on local authorities' responsibilities to work towards these new targets and reduce PM<sub>2.5</sub> in their areas. The Road to Zero<sup>5</sup> details the approach to reduce exhaust emissions from road transport through a number of mechanisms; this is extremely important given that the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

The main source of air pollution within Swale Borough Council is from road traffic emissions, relating to both NO<sub>2</sub> 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 2018, considers measures strategically, as well as measures specific to individual AQMAs. The Air Quality Action Plan (AQAP) concluded December 2022, and the Council is required to propose a new plan for the next five years (2023 to 2028). The Council has assessed the current measures and considered new measures in the update. These were presented to Committee on the November 2022 and approved for public consultation which will be between December 2022 and January 2023. Feedback on this will be reported in the 2024 ASR.

In developing the Air Quality Action Plan, the Council has followed the relevant Technical and Policy Guidance from DEFRA (TG22 and PG22, and previously TG16 and PG16), and have set up a steering group of relevant stakeholders to develop a list of actions. The Steering Group is composed of Swale and KCC officers from key service areas that can influence and impact air quality improvements.

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<sup>4</sup> Defra. Environmental Improvement Plan 2023, January 2023

<sup>5</sup> DfT. The Road to Zero: Next steps towards cleaner road transport and delivering our Industrial Strategy, July 2018



The Steering Group reviewed the viability of measures relative to delivery, cost and air quality outcomes and further prioritised (using cost benefit analysis) measures relative to the cost effectiveness of air quality and non- air quality benefits. The steering group agreed provisional timescales for the implementation of the proposed measures, performance indicators and monitoring standards. Moving forward a series of 'Task & Finish' groups will be responsible for setting milestones and undertaking detailed work on the measures which will be reported on through ASRs.

It is important to also utilise other documents in place within the Council to introduce mutually beneficial measures as mechanisms to reduce pollution emissions from road transport. This includes continuous development of air quality standards and guidance within the Local Plan Review and the Air Quality Planning and Technical Guidance, which was last reviewed in 2021 and will be regularly updated as a live document. In 2022, the Clean Air Zone (CAZ) Feasibility study options were given thorough consideration between Swale and relevant services in KCC. The non – charging CAZ option without enforcement, was not supported by the highway's authority. KCC felt such schemes, without enforcement inevitably fail to deliver the good intention they seek to achieve. However, they were supportive of some individual measures, which have been taken forward as a package that can be supported and incorporated in the AQAP 2023 update. These measures will aim to improve active travel, reduce car use, improve traffic flow and improve the vehicle fleet along the A2.

The anti-idling campaign continued through 2022 with more idling hotspot locations being identified and additional signage being installed. SBC are reviewing options to include enforcement patrols through external contactors to further raise awareness in drivers and reduce pollution at the idling hotspot locations.

In 2022 the Council has also supported low emission vehicle usage through; Faversham Car Club launched by Faversham Town Council; Kent REVS Up for Cleaner Air scheme (30+ businesses took part in Swale); Swale's Electric Vehicle Strategy (adopted June 2022) and 10 double EV charge points were installed in Council car parks. More information on these can be found in section 2.2 and table 2.2.

Newington's 20's Plenty campaign along the A2, led by the Ward Councillor and Parish Council was implemented in 2022, and will be closely monitored for any significant air quality improvements during 2023 and reported on in the next ASR (2024).

Engagement has continued with schools through the Green School Forum set up by the Council to engage with schools on range of schemes related to air quality, ecological and

climate action. In addition, funded by the Defra Air Quality Grant, 'Pollution Patrol' which is a digital resource for schools was set up and rolled out in April 2022 aimed at children aged 5-11 (and their parents). The aim being to educate, raise awareness and promote behaviour change.

MidKent Partnership applied for funding via Defra AQ Grant for a 5-year project to develop a digital training resource for Health Care Practitioners across Kent and Medway to enable practitioners to advise patients with cardio-vascular disease or respiratory diseases on how to reduce their exposure to air pollution. An up on this can be provide in the 2024 ASR.

There is an ongoing partnership working between Swale Borough Council departments and KCC to achieve delivery of actions throughout 2022 and to provide information to the public with the aim raise awareness and to improve air quality across Swale. The Kent and Medway Air Quality Partnership also continue to meet to discuss air quality issues and provide a co-ordinated approach for dealing with air quality across the County.

## **Conclusions and Priorities**

Apart from Keycol Hill exceeding against the NO<sub>2</sub> annual AQS objective, and with Ospringe and Newington sites being within 10% of the ASQ objective, all other monitoring sites within the district reported compliance against the NO<sub>2</sub> AQS objectives during 2022.

The general trend for most sites showed a slight increase from 2021 and 2020, however the over-all long-term trend over the last five years is one of improving air quality in the AQMAs.

This does need cautious interpretation, given the potential pandemic impact on traffic movements during 2020 due to the impact COVID – 19 had on traffic volumes, whereby in 2020 there was a significant decrease in road and vehicle use nationally, especially in urban areas. The year 2021 may have also been affected due a behaviour changes in response to the pandemic, for example, more people working from home and shopping online.

The St Paul's Street area is still an area of concern, with the automatic monitoring station recording an increase in exceedances over the last four years and reporting the highest 24-Hour exceedance at 62 exceedances during 2022. This is significantly more than the AQS objective of the 35 exceedances.

The Swale Borough Council's Air Quality Action Plan (AQAP) 2018 – 2022 will be updated during 2022 for a new plan for the next five years (2023 to 2028). Key themes will be included in the Action Plan and integrated into the actionable measures which aim to deliver compliance with Air Quality Objectives (AQO) within the AQMAs and improve air quality within the district as whole. During 2022 Swale Borough Council will assess current AQAP measures and consider new measures in the update. These will be presented to Committee and approved for public consultation. The approved AQAP will be reported on in the next ASR in 2024.

## Local Engagement and How to get Involved

Swale Borough Council cannot achieve air quality improvements alone. There was a continuation of work with all stakeholders throughout 2022, to provide information to the general public. The following provides 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](mailto: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.
  - Sign up <https://pollutionpatrol.org.uk/> - 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.
- Sign up to the Green Schools Forum at [climate@swale.gov.uk](mailto:climate@swale.gov.uk)
  - The forum provides a platform for primary and secondary schools to discuss issues and projects such as air quality, tree planting and other ecological initiatives. The forum also 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.

- Take action - Walk, wheel, or use public transport to reduce your exposure and contribution to air pollution. Check out Clean Air Day [resources](#) to celebrate Clean Air Day.

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

- SBC have continued to engage with schools, parish councils and members regarding anti idling hotspots 27 signs were installed in 2022.
- 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 can be used by many people for the purposes outlined below:
  - For use by local authority 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.
  - For Swale residents Kentair website can be used for 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.

## **Local Responsibilities and Commitment**

This ASR was prepared by the Environmental Health Department of Swale Borough Council with the support and agreement of the following officers and departments:

SBC Mid Kent GIS

SBC Mid Kent Environmental Health Team

SBC Development Management Team

SBC Economic Development Team

SBC Planning Policy Team

SBC Active Travel and Climate Officers

This ASR has been approved by:

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 been sent to Kent County Council Public Health for approval.

If you have any comments on this ASR please send them to the Environmental Health Team at:

Address: Swale Borough Council Swale House East, Street Sittingbourne Kent ME10 3HT

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Table of Contents

<b>Executive Summary: Air Quality in Our Area</b> .....	<b>i</b>
Air Quality in Swale .....	i
Actions to Improve Air Quality .....	vi
Conclusions and Priorities .....	viii
Local Engagement and How to get Involved.....	ix
Local Responsibilities and Commitment .....	xi
<b>1 Local Air Quality Management</b> .....	<b>1</b>
<b>2 Actions to Improve Air Quality</b> .....	<b>2</b>
Air Quality Management Areas .....	2
Progress and Impact of Measures to address Air Quality in Swale Borough Council .....	7
PM <sub>2.5</sub> – Local Authority Approach to Reducing Emissions and/or Concentrations .....	14
<b>3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance</b> .....	<b>15</b>
Summary of Monitoring Undertaken .....	15
3.1.1 Automatic Monitoring Sites .....	15
3.1.2 Non-Automatic Monitoring Sites .....	15
Individual Pollutants .....	16
3.1.3 Nitrogen Dioxide (NO <sub>2</sub> ) .....	16
3.1.4 Particulate Matter (PM <sub>10</sub> ) .....	18
3.1.5 Particulate Matter (PM <sub>2.5</sub> ).....	18
<b>Appendix A: Monitoring Results</b> .....	<b>20</b>
<b>Appendix B: Full Monthly Diffusion Tube Results for 2022</b> .....	<b>53</b>
<b>Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC</b> .....	<b>60</b>
New or Changed Sources Identified Within Swale Borough Council During 2022.....	60
Additional Air Quality Works Undertaken by Swale Borough Council During 2022 .....	60
QA/QC of Diffusion Tube Monitoring .....	60
Diffusion Tube Annualisation .....	61
Diffusion Tube Bias Adjustment Factors .....	61
NO <sub>2</sub> Fall-off with Distance from the Road.....	63
QA/QC of Automatic Monitoring .....	63
PM <sub>10</sub> and PM <sub>2.5</sub> Monitoring Adjustment .....	63
Automatic Monitoring Annualisation .....	64
NO <sub>2</sub> Fall-off with Distance from the Road.....	64
<b>Appendix D: Map(s) of Monitoring Locations and AQMAs</b> .....	<b>65</b>
<b>Appendix E: Summary of Air Quality Objectives in England</b> .....	<b>72</b>
<b>Glossary of Terms</b> .....	<b>73</b>
<b>References</b> .....	<b>74</b>

Figures

Figure A.1- Trends in Annual Mean NO <sub>2</sub> Concentrations at automatic monitoring sites ....	36
Figure A.2- Trends in Annual Mean NO <sub>2</sub> Concentrations within AQMA No. 1 Newington .	37
Figure A.3- Trends in Annual Mean NO <sub>2</sub> Concentrations within AQMA No. 2/6 Ospringe.	38
Figure A.4– Trends in Annual Mean NO <sub>2</sub> Concentrations within AQMA No. 3 East Street	39
Figure A.5 – Trends in Annual Mean NO <sub>2</sub> Concentrations within AQMA No. 4 St Paul’s Street .....	40
Figure A.6 – Trends in Annual Mean NO <sub>2</sub> Concentrations within AQMA No. 5 Teynham .	41
Figure A.7 – Trends in Annual Mean NO <sub>2</sub> Concentrations within AQMA No. 7 Keycol Hill	42
Figure A.8– Trends in Annual Mean NO <sub>2</sub> Concentrations within Isle of Sheppey .....	43
Figure A.9 – Trends in Annual Mean NO <sub>2</sub> Concentrations within Sittingbourne .....	44
Figure A.10 – Trends in Annual Mean NO <sub>2</sub> Concentrations within Faversham.....	45
Figure A.11– Trends in Annual Mean PM <sub>10</sub> Concentrations .....	48
Figure A.12 – Trends in Number of 24-Hour Mean PM <sub>10</sub> Results > 50µg/m <sup>3</sup> .....	50
Figure A.13 – Trends in Annual Mean PM <sub>2.5</sub> Concentrations .....	52

Tables

Table 2.1 – Declared Air Quality Management Areas .....	5
Table 2.2 – Progress on Measures to Improve Air Quality.....	11
Table A.1 – Details of Automatic Monitoring Sites .....	20
Table A.2 – Details of Non-Automatic Monitoring Sites .....	21
Table A.3 – Annual Mean NO <sub>2</sub> Monitoring Results: Automatic Monitoring (µg/m <sup>3</sup> ) .....	31
Table A.4 – Annual Mean NO <sub>2</sub> Monitoring Results: Non-Automatic Monitoring (µg/m <sup>3</sup> ) ....	32
Table A.5 – 1-Hour Mean NO <sub>2</sub> Monitoring Results, Number of 1-Hour Means > 200µg/m <sup>3</sup> .....	46
Table A.6– Annual Mean PM <sub>10</sub> Monitoring Results (µg/m <sup>3</sup> ) .....	47
Table A.7 – 24-Hour Mean PM <sub>10</sub> Monitoring Results, Number of PM <sub>10</sub> 24-Hour Means > 50µg/m <sup>3</sup> .....	49
Table A.8 – Annual Mean PM <sub>2.5</sub> Monitoring Results (µg/m <sup>3</sup> ).....	51
Table B.1 – NO <sub>2</sub> 2022 Diffusion Tube Results (µg/m <sup>3</sup> ) .....	53

Table C.1 – Annualisation Summary (concentrations presented in $\mu\text{g}/\text{m}^3$ ).....	61
Table C.2 – Bias Adjustment Factor .....	62
Table C.3 – Local Bias Adjustment Calculation .....	62
Table C.4 – NO <sub>2</sub> Fall off With Distance Calculations (concentrations presented in $\mu\text{g}/\text{m}^3$ )	63
Table E.1 – Air Quality Objectives in England .....	72





# 1 Local Air Quality Management

This report provides an overview of air quality in Swale Borough Council during 2022. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995), as amended by the Environment Act (2021), and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in order to achieve and maintain the objectives and the dates by which each measure will be carried out. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by 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**

### **Air Quality Management Areas**

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

A summary of AQMAs declared by Swale Borough Council can be found in

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

- NO<sub>2</sub> annual mean; and
- PM<sub>10</sub> 24-hour mean

Table A4 (non-automatic) and Table A3 (automatic monitoring) provides a review of the Annual Mean NO<sub>2</sub> Monitoring Results between years 2018 to 2022. It shows there has been compliance of the annual mean NO<sub>2</sub> concentrations being lower than 36µg/m<sup>3</sup> (i.e., lower than 10% of the annual mean NO<sub>2</sub> objective) at St Paul's Street (AQMA 4) in the past three consecutive years, and four consecutive years at East Street (AQMA 3) with one of those years being within 10% of the annual mean NO<sub>2</sub> objective. Teynham (AQMA 5) has been compliant for the past five consecutive years with one of those years being within 10% of the annual mean NO<sub>2</sub> objective (shown in table A4 and A3). AQMAs 1 and 2/6 have been compliant for three consecutive years thus they can also be considered for revocation, however the Council remains vigilant of these areas close to exceeding the annual NO<sub>2</sub> AQO within these AQMAs, particularly near sites SW42 (within AQMA 1) and SW28 (within AQMA 2/6) as they reported concentrations within 10% of the annual NO<sub>2</sub> AQO.

AQMAs 3 and 5 will be revoked as soon as possible as they have been compliant for four and five consecutive years respectively. AQMAs 1, 2/6 and 4 will be reviewed in the next year's ASR and if they continue to remain compliant, they should be revoked following next year's ASR in 2024.

Should this happen, the Council will require a local Air Quality Strategy to be embedded in their Air Quality Action Plan to ensure air quality remains a high-profile issue and to ensure it is able to respond quickly should there be any deterioration in condition, this can include continuing with air quality monitoring at strategic or sensitive sites and link to other key policies and strategies for air quality. AQMA 4 located St Paul's Street will continue for PM<sub>10</sub> exceedances declaration.

Defra has stressed that AQMAs should identify areas where air quality objectives are not being met or are likely to be at risk of not meeting them. Keeping AQMAs in place longer

than required risks diluting their meaning and impacting public trust in Local Air Quality Management.

AQMA 4 at St Paul's Street continues to exceed the 24 – Hour PM<sub>10</sub> AQS objective with 62 exceedances reported during 2022. This is significantly more than the AQS objective of the 35 exceedances. AQMA 4 has been non-compliant to the 24 – Hour PM<sub>10</sub> AQS objective for four years. A source apportionment assessment completed in 2021 suggested that the elevated levels of PM<sub>10</sub> measured within the AQMA may not be due to road transport emissions in isolation but may be due to emissions from other sources. The report noted an interesting anomaly with the air quality readings. The normal correlation between vehicle sourced emissions for NO<sub>2</sub> and PM<sub>10</sub> did not occur. In other words, the normal fluctuations of peaks in NO<sub>2</sub> should roughly be followed by peaks in PM<sub>10</sub>. Instead, PM<sub>10</sub> showed high readings even when NO<sub>2</sub> were low. The consultant recommended the council to undertake additional real time measurements in other locations within the AQMA to better understand the spatial extent of the particulate emissions. Swale Borough Council plan to complete this work during 2023. The report also recommended mitigation measures, such as incentivising electric vehicle charging and ownership, the creation of a distribution hub and effective traffic management to positively impact the AQMA. These will be reviewed as part of the AQAP 2023 update.

In 2021 the Council also commissioned a project to assess fugitive emissions from industry to help to identify PM<sub>10</sub> sources at St Paul's Street (2021). The research project, using the R OpenAir package, aimed to identify if a relationship exists over time between wind direction and frequent exceedances of the 24-hour objective for particulate matter (PM<sub>10</sub>) at St Paul's Street. As it was possible the results could identify a dominant wind direction and location of source (s) relative to the trends. However, the project was unable to determine with any certainty which sources of PM<sub>10</sub> are leading to exceedances of the daily mean objective. The above findings may indicate other sources of particulate from non-exhaust emissions (NEE). NEE from road traffic refers to particles released into the air from brake wear, tyre wear, road surface wear and resuspension of road dust during on-road vehicle usage. These emissions arise regardless of the type of vehicle and can contribute to the total ambient particulate matter.

**Advice from the Air Quality Expert Group for reducing NEE:**

The most effective mitigation strategies for NEE are to reduce the overall volume of traffic, lower the speed where traffic is free-flowing (e.g., trunk roads and motorways), and

promote driving behaviour that reduces braking and higher-speed cornering.

Resuspension of particles from the road surface can be lowered by reducing the material that is tracked onto public road surfaces by vehicle movements in and out of construction, waste-management, and similar sites.

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance : Declaration	Level of Exceedance : Current Year	Number of Years Compliant with Air Quality Objective	Name and Date of AQAP Publication	Web Link to AQAP
AQMA 1: Newington	Declared 2009	NO2 Annual Mean	An area encompassing A2 and Newington High Street	No	50µg/m <sup>3</sup>	36µg/m <sup>3</sup>	Three	Strategic AQAP 2019	<a href="https://services.swale.gov.uk/assets/Air-Quality/AQAP_SwaleBC_2018_final.pdf">https://services.swale.gov.uk/assets/Air-Quality/AQAP_SwaleBC_2018_final.pdf</a>
AQMA 2/6: Ospringe Street	Declared as AQMA 2 in 2011, extended in 2016, consolidated As AQMA 6 in 2017	NO2 Annual Mean	Area incorporating all of Ospringe Street near Faversham (A2/Ospringe).	No	48µg/m <sup>3</sup>	38µg/m <sup>3</sup>	Three	Strategic AQAP 2019	<a href="https://services.swale.gov.uk/assets/Air-Quality/AQAP_SwaleBC_2018_final.pdf">https://services.swale.gov.uk/assets/Air-Quality/AQAP_SwaleBC_2018_final.pdf</a>
AQMA 3: East Street, Sittingbourne	Declared 2013	NO2 Annual Mean	Area incorporating East Street, Sittingbourne (A2/Canterbury Road).	No	41µg/m <sup>3</sup>	31µg/m <sup>3</sup>	Four	Strategic AQAP 2019	<a href="https://services.swale.gov.uk/assets/Air-Quality/AQAP_SwaleBC_2018_final.pdf">https://services.swale.gov.uk/assets/Air-Quality/AQAP_SwaleBC_2018_final.pdf</a>

Swale Borough Council

AQMA 4: St Paul's Street, Milton, Sittingbourne	NO2 Declared 2013 PM10 declared 2020	NO2 Annual Mean	Area incorporating St Paul's Street, Sittingbourne (B2006).	No	62µg/m <sup>3</sup>	33µg/m <sup>3</sup>	Three	Strategic AQAP 2019	<a href="https://services.swale.gov.uk/assets/Air-Quality/AQAP_SwaleBC_2018_final.pdf">https://services.swale.gov.uk/assets/Air-Quality/AQAP_SwaleBC_2018_final.pdf</a>
AQMA 4: St Paul's Street, Milton, Sittingbourne		PM10 24 Hour Mean			42 Exceedances of 50µg/m <sup>3</sup>	62 Exceedances of 50µg/m <sup>3</sup>	Zero	Strategic AQAP update 2023	<a href="https://swale.gov.uk/aqap">swale.gov.uk/aqap</a>
AQMA 5: Teynham	Declared 2015	NO2 Annual Mean	Area incorporating Teynham (A2/ London Road)	No	39µg/m <sup>3</sup>	28µg/m <sup>3</sup>	Five	Strategic AQAP 2019	<a href="https://services.swale.gov.uk/assets/Air-Quality/AQAP_SwaleBC_2018_final.pdf">https://services.swale.gov.uk/assets/Air-Quality/AQAP_SwaleBC_2018_final.pdf</a>
AQMA No7: Keycol Hill	Declared 2020	NO2 Annual Mean	Area incorporating Keycol Hill, Sittingbourne (A2)	No	36µg/m <sup>3</sup>	41 µg/m <sup>3</sup>	Zero	Strategic AQAP 2023	<a href="https://swale.gov.uk/aqap">swale.gov.uk/aqap</a>

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.



## 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:

- *It is appreciated and welcomed that the Council responded to and addressed the comments raised in last year's appraisal, this is encouraged, and it is hoped that the Council will continue to do this in future years.*
- *Swale Borough Council included the D01 indicator within their report, and provided a comparison to England and the Southeast. However, for future years, Swale Borough Council should get their ASR approved by the relevant Public Health Body.*
- *QA/QC procedures are appropriate and justified clearly, including calculation of the local bias adjustment factor which has been used and annualisation steps have been provided.*
- *The trends presented in Appendix A are clear and easy to read with consistent formatting, and it is helpful that the figures have been grouped by location to allow for ease of comparison and understanding. The Council also provide a good discussion of trends of pollutants within the district.*
- *It is encouraging to see that the Council have reviewed their monitoring programme and have introduced new monitoring locations. The Council should continue to review the monitoring programme on a regular basis, to ensure that monitoring takes place at any sites of potential exceedance with relevant exposure.*
- *The Council have proposed to revoke AQMA 5: Teynham. Therefore, it is expected that an update will be provided in the 2023 ASR on the progress of this.*
- *There are some mistakes in reporting of data within the report, creating some confusion. The executive summary states that there are 73 passive monitoring locations, however Table A.2 lists 82 locations of which 5 have been decommissioned, taking the total to 77 locations. Clarification is therefore required on this.*

Swale Borough Council has taken forward a number of direct measures during the current reporting year of 2022 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. Sixteen 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 2022. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2. More detail on these measures can be found in the respective Action Plans.

**Key completed measures are:**

- Anti-idling campaign – SBC continues work on the campaign, assessing new hot spot locations within the district, preparing installation of new signs and additional enforcement patrols at hotspot locations, whilst liaising with schools where hotspot areas have been identified.
- In 2022 ‘Pollution Patrol’ was launched. This 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.
- MidKent Partnership applied for funding via Defra Air Quality Grant for a 5-year project to develop a digital training resource for Health Care Practitioners across Kent and Medway to enable practitioners to advise patients with cardio-vascular disease or respiratory diseases on how to reduce their exposure to air pollution.
- Clean Air Zone Feasibility study - Options for this was given thorough consideration. The non – charging CAZ option without enforcement, was not supported by the highway’s authority. Kent County Council felt such schemes, without enforcement inevitably fail to deliver the good intention they seek to achieve. They were however supportive of priority measures that will be included in the AQAP (2023 – 2028) update. These measures aim to improve active travel, reduce car use, improve traffic flow and improve the vehicle fleet along the A2.
- Further engagement with schools through Swale's Green School Forum providing holistic engagement on both air quality, ecological and climate actions.
- Local Cycling and Walking Infrastructure Plans (LCWIP) - Stage 1 completed.

- Faversham Car Club was launched successfully. This can encourage alternative and more sustainable travel options and continues to be well supported by the local community.
- Promoting Kent Revs Scheme for local businesses to trial EV vans to encourage EV uptake.
- Joint working through the Kent and Medway Air Quality Partnership communications subgroup to promote KentAir week and Clean Air Day. Continue to discuss air quality issues and provide a co-ordinated approach for dealing with air quality across the County.
- The Council set up a Sustainable Transport show in Sittingbourne High Street with EV car dealers, Car clubs, Southeastern Railway and Canterbury Bike Project. Members of the public engaged with all the displays along the high street.
- Raleigh bikes lent the Council a cargo bike for a month to engage local businesses and promote using cargo bikes.
- 10 Electric Vehicle charge points were installed in SBC car parks

**Swale Borough Council expects the following measures to be completed over the course of the next reporting year:**

- Anti-idling campaign – install new signs and provide additional enforcement patrols at hotspot locations. Liaise with schools and promote the campaign.
- Progress stages 2 and 3 of the Local Cycling and Walking Infrastructure Plan (LCWIP) for the district.
- Explore AQMA specific traffic management options with KCC.
- Launch car club in Sittingbourne or Isle Sheppey.
- Explore opportunities for EV charge points at AQMA's.
- Work in partnership with Medway Council and KCC to agree mitigation and mechanism to manage transboundary impacts from development on air quality between Newington and Rainham.
- If the Defra AQ Grant to develop a digital training resource for Health Care Practitioners is successful, the project will then be actioned during 2023.

## Swale Borough Council

- Continue to promote and raise awareness of KentAir alert messaging, air quality impacts and solutions through KentAir week, Clean Air Day and the Green Schools Forum.
- Continue to improve and develop the EV infrastructure within the district.

Swale Borough Council's priorities for the coming year are the measures outlined above and to provide an updated Air Quality Action Plan for the year 2023 to 2028.

Swale Borough Council worked to implement the above measures in partnership with the following stakeholders during 2022:

- Neighbouring local authorities through the Kent and Medway Air Quality Partnership
- Kent County Council (KCC)

The principal challenges and barriers to implementation that Swale Borough Council anticipates facing are funding measures and the level of support provided by KCC due to difference in priorities.

Progress on the following measures has been slower than expected due to:

- Pollution Patrol digital resource – engagement from schools using the resource. In March 2023 we will be offering schools the opportunity to win £100 towards school supplies if they sign up to Pollution Patrol.
- Swale's Green School Forum – funding opportunities to support school projects
- Local Cycling and Walking Infrastructure Plan (LCWIP) for the district – funding to complete Stages 3 & 4 could delay completion.
- Continue to improve and develop the EV infrastructure within the district - Difference in strategy between SBC & KCC could be a barrier. Distribution Network Operator (DNO) costs and grid capacity also is a barrier.

Swale Borough Council anticipates that the measures stated above and in Table 2.2 will achieve compliance in East Street and Teynham AQMAs.

Whilst the measures stated above and in Table 2.2 will help to contribute towards compliance, Swale Borough Council anticipates that further additional measures not yet prescribed will be required in subsequent years to achieve compliance and enable the revocation of Keycol Hill, Ospringe, Newington and St Paul's Street AQMAs.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
<b>Strategic Measures</b>															
1	HGV "Clear Air Corridor"	Promoting Low Emission Transport	Clean Air Zone (CAZ)	2020	2022	KCC / SBC	Joint bids with KCC and Staff costs	No	No funding source at present	> £10m	Aborted	Lower NOx and PM10 emissions	Reduction in pre-Euro VI HGV	Clean Air Zone feasibility study and options appraisal completed.	Options for this was given thorough consideration. The non – charging CAZ option without enforcement, was not supported by the highway's authority. A package of priority measures is supported and will be incorporated in the AQAP 2023 -2028 update.
2	Air Quality and Low Emission Strategy	Policy Guidance and Development Control	Low Emissions Strategy	2022	Ongoing	SBC	Joint bids with KCC and Staff costs	No	No funding source at present	NA	Aborted	Lower NOx and PM10 emissions	Development of LES	EV Strategy approved in 2022.	Local Plan Transport Strategy is still in draft
3	Develop't of Air Quality standards within new Local Plan	Policy Guidance and Develop't Control	Low Emissions Strategy	2020	Ongoing	SBC	Staff costs and potential S106 contributions	No	Funded	< £10k/£10k	Completed – ongoing	Unquantifiable	Air Quality standards to reduce district-wide emissions	New AQ Policy included in Regulation 19/Pre-Submission Local Plan Review Document. Under review.	i.e., Standards for low emissions boilers to new homes/developments, parking standards policy, mitigation measures and use of s106.
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	No	NA	< £50k	Aborted	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	Staff costs	No	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. Some delay has occurred due to stretched resources.
6	Swale Freight Management Plan (2016)	Freight and Delivery Management	Delivery and Service plans	2016	On going	KCC	S106 contributions, joint bids with KCC and Staff costs	No	NA	NA	Aborted	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	Fully funded	< £20k	Implementation phase	Lower NOx and PM10 emissions	Number of (vulnerable) people using the alert service in Swale	2022 stats: 2,600 unique users. 16,000 page views. 9,100 of those were the home page, the rest spread over other pages. Positively, a lot of views on the education sections.	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.  MidKent Partnership applied for funding via Defra AQ Grant for a 5-year project to develop a digital training resource for Health Care Practitioners across Kent and Medway to enable practitioners to advise patients with cardio-vascular disease or respiratory diseases on how to reduce their exposure to air pollution.
8	EcoStars	Vehicle Fleet Efficiency	Driver training and ECO driving aids	2019	2019	SBC	SBC budget	No	Not currently funded	< £10k/£10k	Completed - Aborted	No direct measure available.	Number of HGV and LGV drivers taken through scheme.	Programme is no longer live.	Continued in 2019 but at present the Emissions Toolkit which is planned to measure the direct improvement on air quality from members implementing improvement

Measure No.	Measure	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
															measures is still not available. As a result, SBC continue to not finance the recruitment of additional members.
<b>Local AQMA Measures</b>															
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	Funded	< £10k/£10k	Implementation phase	Lower NOx and PM10 emissions	% Participant in Kent smarter travel challenge recorded by KCC	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. Pollution Patrol promoted to schools via the Swale Green School's Forum set up in 2022	Continued collaborative engagement with SBC Climate Action team to re-engage with schools after pandemic through the Green Schools Forum being set up. The Defra funded digital education package aimed at children aged 5-11 (and their parents) about air pollution is available to all schools. The aim being to educate, raise awareness and promote behaviour change.
10	Pinch-point parking alternatives (red-route)	Traffic Management	Parking Enforcement on highway	2019	2022	KCC	Combination of the S106 contributions	No	Not currently funded	Unknown	Aborted	Lower NOx and PM10 emissions	A2 parking space reduction	Ongoing	No further actions have occurred for this measure. This measure will be reviewed with KCC as part of the AQAP update.
11	"20 is plenty" zones	Traffic Management	Reduction of speed limits, 20mph zones	NA	On-going	KCC	KCC/ Department for Transport's Emergency Active Travel Fund	No	Part funded	Unknown	Not currently active in all AQMAs	Lower NOx and PM10 emissions	Smoothing Traffic flow to reduce emissions	On-going. Newington AQMA is being monitored to see if the change in speed over time has impacted air pollution concentrations	Faversham town centre and Newington now has 20 mph speed limits. This was led by Town and Parish Councils and Kent County Council.
12	Quiet delivery zones	Freight and delivery management	Quiet & out of hours delivery	2021	2022	KCC	Combination of the S106 contributions	No	Not currently funded	Unknown	Aborted	Lower NOx and PM10 emissions	Reducing 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	No	Funded	<£50k/£50k	Completed	Lower NOx and PM10 emissions	LEV car club vehicle no. and booking level	Three ULEV cars are located around Faversham town centre by Hiya-car. Usage levels will be monitored over the 3-year trial - the car club should be self-sustaining after this point.	Marketing and information will be key to success. SBC are pursuing expansion of the car club through developer contributions or installation at development sites.
<b>Additional measures</b>															

Measure No.	Measure	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
14	Anti-idling Campaign targeting hotspot areas within the district	Traffic Management	Anti-idling enforcement	2021	Ongoing	SBC	SBC budget and Staff costs	No	Funded	< £10k/£10k	Completed and on going	Lower NOx and PM10 emissions	Sustainable business, cleaner greener Swale. Monitoring no cars and assessing improvements via complaints and visits to hotspot locations.	Ongoing - As part of the anti-idling campaign launch Environmental Response Team have visited idling hotspot areas around schools during 2022.	SBC have contacted schools that have previously taken part of the 'Clean Air For Schools' scheme and those who have idling hotspot locations identified to see if they would like to take part in the anti-idling campaign.  Schools have received materials such as anti-idling toolkits supplied by Global Action to take part in the campaign. Prior to the launch SBC communications team issued press releases and fed into Facebook and Twitter. Taxi drivers and bus operators are regularly reminded via newsletters.  Further funding will be required for future patrols and signage
15	Clean-air walking and cycle ways	Promote travel alternatives	Intensive active travel campaign & infrastructure	2019	2022	SBC/ KCC	Developers & highway infrastructure funding	No	LCWIP Funded. Partially Funded for future measures	£10k-£20k plus additional cost for future measures	Multiple phases being completed	NA	Completion of improved walking and cycle routes	Managed by the Active Travel Co-ordinator. The plan has completed Stage 1, with Stage 2 to 4 still to be completed  10 EV charge points installed in SBC car parks	Resources to complete Stages 3 & 4 could delay completion
16	Air Quality Policy	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2020	2023	SBC	Staff costs	No	Funded	NA	Implementation phase	Unquantifiable	Improve air quality through location, linkage, layout, land-use, landscaping and building design; plus, passive and active mitigation measures.	Regulation 19 Local Plan Review and policy due to be adopted 2023.	The emerging Local Plan will include a policy on Air Quality. Air Quality policy (DM 33)



## **PM<sub>2.5</sub> – Local Authority Approach to Reducing Emissions and/or Concentrations**

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

The [Public Health Outcomes Framework data tool](#)<sup>6</sup> compiled by Public Health England show the fraction of mortality attributable to particulate air pollution (new method) 2021 in Swale is 5.1% and 5.5% nationally.

Although there are no specific measures to address PM<sub>2.5</sub> concentrations in place at present, it is recognised that measures to reduce NO<sub>2</sub> and PM<sub>10</sub> should also have a beneficial effect on PM<sub>2.5</sub> concentrations. The following is a list of measures Swale Borough Council is undertaking to reduce PM<sub>10</sub> and NO<sub>x</sub> which should have a beneficial impact on PM<sub>2.5</sub>:

- 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

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<sup>6</sup> <https://fingertips.phe.org.uk/profile/public-health-outcomes-framework>



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

This section sets out the monitoring undertaken within 2022 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 2018 and 2022 to allow monitoring trends to be identified and discussed.

### Summary of Monitoring Undertaken

#### 3.1.1 Automatic Monitoring Sites

Swale Borough Council undertook automatic (continuous) monitoring at ZW3, ZW8 and ZW10 sites during 2022. Table A.1 in Appendix A shows the details of the automatic monitoring sites<sup>7</sup>. The [Kentair](#) website 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 NO<sub>2</sub> at 76 site locations during 2022. A total of 86 tubes deployed (inclusive of triplicates for co-location or height studies). Table A.2 in Appendix A presents the details of the non-automatic sites. Two new sites in 2022 were Western Link, Faversham (SW168) and Lower Road Sheppey (SW166). Sites 12-14 High St Sheerness (SW134) and Opposite Fruit Street, A2 Bapchild (SW118) was decommissioned in 2022.

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<sup>7</sup> 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

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

## Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for bias, annualisation (where the annual mean data capture is below 75% and greater than 25%), and distance correction. Further details on adjustments are provided in Appendix C.

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

Table A.3 and Table A.4 in Appendix A compare the ratified and adjusted monitored NO<sub>2</sub> annual mean concentrations for the past five years with the air quality objective of 40µg/m<sup>3</sup>. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e., the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the full 2022 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 includes distance corrected values, only where relevant.

Table A.5 in Appendix A compares the ratified continuous monitored NO<sub>2</sub> hourly mean concentrations for the past five years with the air quality objective of 200µg/m<sup>3</sup>, not to be exceeded more than 18 times per year.

There are tubes at 76 locations with a total of 86 tubes deployed. Triplicate passive monitoring sites at four locations are positioned strategically to increase the accuracy of our monitoring data, as well as one triplicate set with different heights.

During 2022, site SW130 within the Keycol Hill AQMA exceeded the annual mean Air Quality Objective (AQO) of 40µg/ m<sup>3</sup>, with a concentration of 40.9 µg/ m<sup>3</sup>. Three other sites, SW124 (39.1 µg/ m<sup>3</sup>), SW131 (39.6 µg/ m<sup>3</sup>) and SW154 (36.5 µg/ m<sup>3</sup>) were within 10% of the AQO. No other sites within the district or in other AQMAs recorded exceedances of the NO<sub>2</sub> annual mean. Majority of passive monitoring sites recorded

concentrations well under the objective. Newington site SW42.1 recorded an increase since 2021 reporting at  $36.2 \mu\text{g}/\text{m}^3$  which is 10% of the AQS Objective.

There is an overall decrease in  $\text{NO}_2$  concentrations since 2018, however since 2021, 51 sites reported a slight increase in  $\text{NO}_2$  and 20 tubes reporting a slight decrease. Other sites either showed no change or only had 1 year of data or were part of the triplicates.

The slight increase since 2021 is likely influenced by changes in driving habits from the COVID-19 pandemic, whereby travel and working from home likely resulted in reduced concentrations in 2020 and tailing off through 2021. Therefore, the 2022 reporting year could be subject to pre-pandemic traffic volumes, which may explain the slight increase of  $\text{NO}_2$  in 2022.

There are no passive monitoring sites where the  $\text{NO}_2$  annual mean is greater than  $60\mu\text{g}/\text{m}^3$ , therefore in accordance with Defra LAQM.TG(22) there are no sites likely to be at risk of exceeding the 1-hour mean AQS objective.

The two new deployed sites Western Link, Faversham (SW168) and Lower Road Sheppey (SW166) reported well below the AQS in the first year of monitoring.

Regarding the AQMAs, with the exception of an exceedance at Keycol Hill (SW130) there has been compliance of the Annual Mean  $\text{NO}_2$  Concentrations at all Automatic Monitoring Stations and diffusion tube sites for the past three years. However, the following AQMAs are still within 10% ( $36\mu\text{g}/\text{m}^3$ ) of the annual mean  $\text{NO}_2$  objective: Newington, AQMA 1 and Ospringe, AQMA 2/3 report diffusion tubes sites (SW28, SW42.1 and SW42.3) within 10% of the annual mean  $\text{NO}_2$  objective. Keycol Hill, AQMA 7 has shown exceedances in 2019 and 2022 with no exceedances in 2020 or 2021.

St Paul's Street, AQMA 4 and East Street, AQMA 3 has been compliant following three consecutive years of annual mean  $\text{NO}_2$  concentrations being lower than  $36\mu\text{g}/\text{m}^3$  (i.e., within 10% of the annual mean  $\text{NO}_2$  objective) and Teynham, AQMA 5 has been compliant the last four years.

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

**Error! Reference source not found.** in Appendix A: Monitoring Results compares the ratified and adjusted monitored PM<sub>10</sub> annual mean concentrations for the past five years with the air quality objective of 40µg/m<sup>3</sup>.

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

During 2022 three automatic monitoring sites recorded PM<sub>10</sub> concentrations: ZW3 (Ospringle), ZW8 (ST Paul's Street) and ZW10 (Newington). All sites showed a slight increase since 2021, with ZW8 within 10% of the annual mean PM<sub>10</sub> AQS objective (40µg/m<sup>3</sup>) for the last two years and currently recording at 37.5 µg/m<sup>3</sup>. ZW10, has reported compliance with the PM<sub>10</sub> AQS objective for the last two years with slight in the annual mean reported at 17.1 µg/m<sup>3</sup>. ZW3 has reported compliance with the PM<sub>10</sub> AQS objective over the last five years reported 24.4 µg/m<sup>3</sup> in 2022.

Since 2019 ZW3 (Ospringle) has shown a decreasing trend in the daily number of exceedances of the 24-hour mean greater the 50µg/m<sup>3</sup> and reported 11 exceedances during 2022. Since 2018 ZW8 (St Paul's Street) in AQMA No.4 the number of exceedances has increased continuously with 62 exceedances during 2022. This is significantly more than the AQS objective of the 35 exceedances. ZW8 has been non-compliant to the 24 – Hour PM<sub>10</sub> AQS objective for four years. As discussed in Section 2.1 work is ongoing to understand better the reasons for these exceedances. ZW10 has reported compliance with the 24 – Hour PM<sub>10</sub> AQS objective but has increase with five exceedance in 2022 compared to zero in 2021.

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

Table A.8 in Appendix A presents the ratified and adjusted monitored PM<sub>2.5</sub> annual mean concentrations for the past three years.

Monitoring for PM<sub>2.5</sub> was undertaken at existing site ZW8 (St Paul's Street) and new site ZW10 (Newington) started in 2021. Sites ZW8 (11.5µg/m<sup>3</sup>) and ZW10 (12.4µg/m<sup>3</sup>) have slightly increased since 2021 but do not exceed 20 µg/m<sup>3</sup> annual objective for PM<sub>2.5</sub>.



## 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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Inlet Height (m)
ZM3	Swale Ospringe Roadside	Roadside	600360	160869	NO <sub>2</sub> , PM <sub>10</sub>	Y – AQMA: No.2/6	Chemiluminescent, TEOM	0.5	1.7	2
ZM8	St Paul's Street	Roadside	590264	164396	NO <sub>2</sub> , PM <sub>10</sub> , PM <sub>2.5</sub>	Y – AQMA No.4	Chemiluminescent BAM x 2	9	2.5	3.2
ZM10	Newington	Roadside	585970	164787	NO <sub>2</sub> , PM <sub>10</sub> , PM <sub>2.5</sub>	Y – AQMA No.1	Chemiluminescent BAM x 2	2.6	3.3	2.1

### Notes:

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

(2) N/A if not applicable

Table A.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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
<b>Isle of Sheppey</b>										
SW85	Sheerness College 2, Bridge Road, Sheerness	Roadside	591752	175012	NO2	NO		2.4	No	2.2
SW86	Swale Foyer, Bridge Road, Sheerness	Roadside	591726	175018	NO2	NO		2.4	No	2.1
SW127	Lamp post o/s 14 Halfway, Halfway	Roadside	593151	172962	NO2	NO	9.0	2.5	No	2.1
SW128	Lamp post o/s 12a Queenborough Road, Halfway	Roadside	593092	172870	NO2	NO	3.0	1.5	No	2.1
SW133	159/161 High Street, Sheerness	Roadside	592208	174596	NO2	NO	0.5	1.5	No	2.0
SW164	Lamp post o/s 45 Minster Road, Halfway	Roadside	593292	172897	NO2	NO	4.0	1.1	No	1.9
SW165	Lamp Post o/s Post Office, Main Road, Queenborough	Kerbside	591396	172070	NO2	NO	10.0	0.4	No	2.1
SW166	Lower Road, Minster Nr Barton Hill Roundabout	Roadside	594021	171626	NO2	NO	20.0	1.5	No	2.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
<b>Newington</b>										
SW19	5 High Street, Newington	Roadside	585904	164794	NO2	YES - AQMA 1	0.0		No	2.1
SW37	A2 Newington O/S 32/34 High Street, Newington	Roadside	585868	164803	NO2	YES - AQMA 1	4.0	1.9	No	2.1
SW42.1	A2 Newington opposite Church Lane	Roadside	585935	164787	NO2	YES - AQMA 1	0.0	1.3	No	2.2
SW42.2	A2 Newington opposite Church Lane	Roadside	585935	164787	NO2	YES - AQMA 1	0.0	1.3	No	2.2
SW42.3	A2 Newington opposite Church Lane	Roadside	585935	164787	NO2	YES - AQMA 1	0.0	1.3	No	2.2
SW45	64/66 High Street, Newington	Roadside	585989	164774	NO2	YES - AQMA 1	2.9	1.2	No	2.3
SW66	A2 Newington O/S 94 High Street, Newington	Roadside	586080	164746	NO2	YES - AQMA 1	0.0	1.1	No	1.9
SW78	55-57 High Street, Newington	Roadside	585951	164792	NO2	YES - AQMA 1	0.0	2.2	No	2.0
SW167.1	Newington Air Quality Station	Roadside	585970	164788	NO2	YES - AQMA 1	4.0	3.2	Yes	1.8
SW167.2	Newington Air Quality Station	Roadside	585970	164788	NO2	YES - AQMA 1	4.0	3.2	Yes	1.8



Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
SW167.3	Newington Air Quality Station	Roadside	585970	164788	NO2	YES - AQMA 1	4.0	3.2	Yes	1.8
<b>St Paul's Street and Sittingbourne</b>										
SW51	O/S 14/16 St Pauls Street, Sittingbourne	Roadside	590236	164408	NO2	YES - AQMA 4	0.5	2.0	No	2.2
SW71	O/S 8 Staple Close, Staplehurst Road, Sittingbourne	Roadside	590098	164455	NO2	NO	4.4	3.3	No	2.3
SW89.1	St Pauls AQ Station, St Pauls Street, Milton	Roadside	590252	164397	NO2	YES - AQMA 4	11.1	1.9	Yes	2.0
SW89.2	St Pauls AQ Station, St Pauls Street, Milton	Roadside	590252	164397	NO2	YES - AQMA 4	11.1	1.9	Yes	2.0
SW89.3	St Pauls AQ Station, St Pauls Street, Milton	Roadside	590252	164397	NO2	YES - AQMA 4	11.1	1.9	Yes	2.0
SW140	Lamp post 36/38 Chalkwell Road, Sittingbourne	Roadside	590079	164367	NO2	NO	0.0	1.1	No	2.1
SW141	Drainpipe 37/39 Chalkwell Road, Sittingbourne	Roadside	590071	164375	NO2	NO	0.0	1.6	No	2.1
SW142	Lamp post opp Stumble Inn, St Paul's Street, Sittingbourne	Roadside	590139	164406	NO2	NO	20.0	1.6	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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
SW162	Lamp post 1 Staplehurst Road, Sittingbourne B2006 Staplehurst Link Road	Roadside	590093	164438	NO2	NO	7.0	1.5	No	2.0
SW62	Lampost 13 Key Street, Sittingbourne	Roadside	588178	164236	NO2	NO	15.0	1.9	No	2.4
SW112	56 Key Street, Sittingbourne	Roadside	588329	164188	NO2	NO	5.5	2.1	No	2.1
SW121	Squirrel Cottage, Keycol Hill façade	Roadside	587936	164267	NO2	YES - AQMA 7	0.0	9.3	No	1.9
SW122	13 Keystreet, Sittingbourne façade	Roadside	588184	164250	NO2	NO	0.0	18.0	No	1.2
SW123	12 Keystreet, Sittingbourne	Roadside	588153	164227	NO2	NO	0.0	3.7	No	1.8
<b>Keycol Hill and Sittingbourne</b>										
SW124	31/33 Keycol Hill, Sittingbourne Highest Point	Roadside	587775	164320	NO2	YES - AQMA 7	0.0	1.5	No	2.0
SW130	31/33 Keycol Hill, Sittingbourne Mid Point	Roadside	587775	164320	NO2	YES - AQMA 7	0.0	1.5	No	1.4
SW131	31/33 Keycol Hill, Sittingbourne Lowest Point	Roadside	587775	164320	NO2	YES - AQMA 7	0.0	1.5	No	0.8

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
SW143	Lamp post 49 Key Street, Sittingbourne	Roadside	588383	164190	NO2	NO	5.0	2.0	No	2.0
SW144	3/5 Keycol Hill, Sittingbourne	Roadside	587917	164277	NO2	YES - AQMA 7	0.0	4.8	No	1.9
SW145	Lamp post 40 Keycol Hill, Sittingbourne	Roadside	587694	164355	NO2	YES - AQMA 7	40.0	1.5	No	2.1
SW146	Fox Cottage, Chestnut Street, Borden	Roadside	587513	163885	NO2	NO	7.0	1.8	No	2.2
SW154	Bus stop o/s 9/11 Keycol Hill, Sittingbourne	Roadside	587874	164292	NO2	YES - AQMA 7	9.0	1.5	No	2.1
SW155	Grovehurst Road, Iwade Bound side between roundabout & Iwade Village	Roadside	590292	166977	NO2	NO	-	2.9	No	2.0
SW156	Lamp post o/s 96 Grovehurst Road, Sittingbourne	Roadside	590525	166298	NO2	NO	3.0	0.4	No	2.0
SW157	Lamp post o/s 139 Grovehurst Road, Sittingbourne	Roadside	590428	166438	NO2	NO	7.0	2.9	No	2.0
SW158	Lamp post o/s Sanctuary Homes (Milton Pipes) Site Mill Way, Sittingbourne	Roadside	590494	164416	NO2	NO	12.0	2.9	No	2.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
SW159	Lamp post jct Gas Road & Mill Way, Sittingbourne	Roadside	590567	164439	NO2	NO	40.0	1.8	No	1.9
SW160	Lamp post o/s 41/43 Saffron Way, Sittingbourne B2005	Roadside	590904	165192	NO2	NO	10.0	1.5	No	2.0
SW161	Lamp post Garnet House Flats, B2006 Staplehurst Link Road	Roadside	589167	164747	NO2	NO	8.0	8.0	No	2.1
SW163	Lamp post Opp Regent Park, Eurolink Way, Sittingbourne	Roadside	590850	163852	NO2	NO	30.0	2.2	No	2.0
SW132	Fountain Street, Sittingbourne	Roadside	590508	163850	NO2	NO	5.0	3.0	No	2.1
SW77	Kemsley Fields, Swale Way, Kemsley, Sittingbourne	Roadside	591040	166519	NO2	NO	13.6	6.0	No	2.0
SW147	Flats 1-20 St Michaels Road, Sittingbourne	Kerbside	590370	163877	NO2	NO	1.0	0.4	No	2.1
SW148	158/160 London Road, Sittingbourne	Roadside	589163	164011	NO2	NO	4.0	1.5	No	2.1
SW149	Balmoral Terrace/Kings Head, London Road, Sittingbourne	Roadside	589799	163856	NO2	NO	10.0	1.9	No	2.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
<b>East Street, Sittingbourne and Bapchild</b>										
SW56	126 East Street, Sittingbourne	Roadside	591453	163465	NO2	YES - AQMA 3	0.0	3.1	No	1.8
SW76	155 Canterbury Road, Sittingbourne	Roadside	592209	163302	NO2	NO	3.5	1.7	No	2.0
SW151	Lamp post outside Beatrice Lodge, London Road, Sittingbourne	Roadside	591515	163451	NO2	NO	6.0	1.6	No	2.0
SW152	Lamp post o/s 157/159 East Street, Sittingbourne	Roadside	591423	163484	NO2	YES - AQMA 3	4.0	1.8	No	2.0
SW125	Fox & Goose, The Street, Bapchild	Roadside	592837	163150	NO2	NO	0.0	1.6	No	2.0
SW126	16/18 The Street, Bapchild	Roadside	592867	163131	NO2	NO	1.0	1.0	No	2.1
<b>Teynham</b>										
SW80	LTR Supplies, 107, London Road, Teynham	Roadside	595155	162472	NO2	YES - AQMA 5	0.6	1.5	No	1.8
SW91	Adj to 72 London Road, Teynham	Roadside	595150	162461	NO2	YES - AQMA 5	0.0	2.4	No	1.8
SW92	F J Williams London Road, Teynham	Roadside	595195	162446	NO2	YES - AQMA 5	1.0	3.4	No	1.9

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
SW153	Lamp post o/s 190/192 London Road, Teynham	Roadside	594748	162602	NO2	NO	1.5	1.5	No	2.1
<b>Ospringe and Faversham</b>										
SW28	Mayors Arms, Ospringe Street, Faversham	Roadside	600225	160887	NO2	YES - AQMA 2/6	0.0	1.5	No	2.4
SW29	43 Ospringe Street, Faversham	Roadside	600286	160868	NO2	YES - AQMA 2/6	0.0	2.4	No	2.1
SW30.1	Ospringe AQ Station	Roadside	600363	160869	NO2	YES - AQMA 2/6	1.7	2.5	Yes	1.8
SW30.2	Ospringe AQ Station	Roadside	600363	160869	NO2	YES - AQMA 2/6	1.7	2.5	Yes	1.8
SW30.3	Ospringe AQ Station	Roadside	600363	160869	NO2	YES - AQMA 2/6	1.7	2.5	Yes	1.8
SW31	4 Ospringe Street, Faversham	Roadside	600444	160848	NO2	YES - AQMA 2/6	0.0	1.5	No	2.3
SW32	11 Ospringe Street, Faversham	Roadside	600422	160843	NO2	YES - AQMA 2/6	0.0	2.0	No	2.3
SW96	Maison Dieu, Ospringe Street	Roadside	600358	160859	NO2	YES - AQMA 2/6	0.0	1.5	No	2.3
SW169	Ospringe Primary, Water Lane, Ospringe	Roadside	600262	160697	NO2	NO	10.0	2.0	No	2.0
SW119	Flats, The Mount, Ospringe	Roadside	600568	160819	NO2	YES - AQMA 2/6	0.0	8.0	No	2.3

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
SW120	1-3 Ospringe Street, Ospringe, Faversham	Roadside	600456	160836	NO2	YES - AQMA 2/6	0.0	1.4	No	1.9
SW135	Lamp post outside 31/33 Ospringe Street, Ospringe	Roadside	600326	160860	NO2	YES - AQMA 2/6	0.5	2.5	No	2.0
SW98	Canterbury Road Preston Faversham (Lavender Cottage)	Roadside	601818	160474	NO2	NO	2.0	0.4	No	2.0
SW117	Land adj to Orchard, Canterbury Road, Faversham	Roadside	601629	160525	NO2	NO	26.2	1.1	No	2.0
SW136	A2 Jct Preston Grove, Faversham	Roadside	601491	160570	NO2	NO	20.0	2.2	No	2.1
SW137	A251 Fire Station, Ashford Road	Roadside	601443	160486	NO2	NO	6.0	1.4	No	2.1
SW138	17 East Street, Faversham	Roadside	601739	161310	NO2	NO	0.0	1.3	No	2.1
SW139	14 Crescent Road, Faversham	Roadside	601706	161338	NO2	NO	10.0	1.1	No	2.2
SW168	Western Link Road - Davington Fields Roundabout	Roadside	600001	161622	NO2	NO	12.0	1.7	No	2.0
<b>Rural and Urban background</b>										
SW07	Capel Hill Farm, Harty	Rural	600758	169576	NO2	NO	5.0		No	1.7

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
SW34	Hernhill Village Hall, Hernhill	Rural	606624	161108	NO2	NO	0.0		No	1.9
SW88	Sonora Way, Sittingbourne	Urban Background	589318	165045	NO2	NO	5.8	1.8	No	2.1

**Notes:**

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

(2) N/A if not applicable.

Two new sites in 2022 were Western Link, Faversham (SW168) and Lower Road Sheppey (SW166). These sites were chosen as they have been identified as congestion sensitive locations through previous onsite and Local Plan transport observations. Sites 12-14 High St Sheerness (SW134) and Opposite Fruit Street, A2 Bapchild (SW118) was decommissioned in 2022. Tube deployments are in line with the Defra Calendar.



Table A.3 – Annual Mean NO<sub>2</sub> Monitoring Results: Automatic Monitoring (µg/m<sup>3</sup>)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2022 (%) <sup>(2)</sup>	2018	2019	2020	2021	2022
ZW3	600360	160869	Roadside	95.7	95.7	31.6	31.4	25.1	23.5	24.8
ZW8	590264	164396	Roadside	98.5	98.5	39.7	39.1	31.6	30.6	30.4
ZW10	585970	164787	Roadside	99.6	99.6	-	-	-	22.6	21.9

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

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

#### Notes:

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

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

All means have been “annualised” as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

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

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

**Table A.4 – Annual Mean NO<sub>2</sub> Monitoring Results: Non-Automatic Monitoring (µg/m<sup>3</sup>)**

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%)	Valid Data Capture 2022 (%)	NO <sub>2</sub> Annual Mean Concentration (µg/m <sup>3</sup> )				
						2018	2019	2020	2021	2022
<b>Isle of Sheppey</b>										
SW85	591752	175012	Roadside	92.3	92.3	33.3	31.0	25.0	25.3	22.5
SW86	591726	175018	Roadside	100.0	100.0	30.3	28.3	21.5	23.1	24.0
SW127	593151	172962	Roadside	90.4	90.4	-	31.0	22.4	23.4	23.7
SW128	593092	172870	Roadside	100.0	100.0	-	37.4	27.0	27.4	25.2
SW133	592208	174596	Roadside	84.6	84.6	-	30.4	22.5	25.0	25.2
SW164	593292	172897	Roadside	100.0	100.0	-	-	-	21.6	19.2
SW165	591396	172070	Kerbside	69.2	69.2	-	-	-	17.5	17.8
SW166	594021	171626	Roadside	100.0	100.0	-	-	-	-	23.1
<b>Newington</b>										
SW19	585904	164794	Roadside	100.0	100.0	39.0	36.8	27.0	27.9	29.3
SW37	585868	164803	Roadside	100.0	100.0	33.7	32.6	23.1	24.3	25.2
SW42.1	585935	164787	Roadside	100.0	100.0	<b>47.8</b>	<b>43.9</b>	31.5	33.1	36.2
SW42.2	585935	164787	Roadside	100.0	100.0	<b>47.8</b>	<b>43.9</b>	31.5	33.1	34.8
SW42.3	585935	164787	Roadside	100.0	100.0	<b>47.8</b>	<b>43.9</b>	31.5	33.1	36.3
SW45	585989	164774	Roadside	100.0	100.0	39.7	31.8	27.4	28.6	32.2
SW66	586080	164746	Roadside	100.0	100.0	35.4	33.7	26.9	26.4	26.9
SW78	585951	164792	Roadside	100.0	100.0	36.9	34.1	25.4	26.9	30.1
SW167.1	585970	164788	Roadside	100.0	100.0	-	-	-	-	19.8
SW167.2	585970	164788	Roadside	100.0	100.0	-	-	-	-	19.8
SW167.3	585970	164788	Roadside	100.0	100.0	-	-	-	-	20.2
<b>St Paul's Street and Sittingbourne</b>										
SW51	590236	164408	Roadside	100.0	100.0	<b>45.2</b>	<b>40.5</b>	32.4	34.4	32.7
SW71	590098	164455	Roadside	92.3	92.3	37.0	36.1	27.6	28.9	29.4
SW89.1	590252	164397	Roadside	100.0	100.0	<b>43.2</b>	<b>40.1</b>	32.3	31.9	31.2
SW89.2	590252	164397	Roadside	100.0	100.0	<b>43.2</b>	<b>40.1</b>	32.3	31.9	31.8

Swale Borough Council

SW89.3	590252	164397	Roadside	100.0	100.0	<b>43.2</b>	<b>40.1</b>	32.3	31.9	32.3
SW140	590079	164367	Roadside	100.0	100.0	-	-	26.1	31.8	31.6
SW141	590071	164375	Roadside	92.3	92.3	-	-	27.0	27.9	29.9
SW142	590139	164406	Roadside	90.4	90.4	-	-	24.2	27.6	26.3
SW162	590093	164438	Roadside	100.0	100.0	-	-	-	29.4	27.1
SW62	588178	164236	Roadside	100.0	100.0	33.7	33.7	26.4	26.1	26.5
SW112	588329	164188	Roadside	100.0	100.0	35.4	33.4	25.8	26.0	27.5
SW122	588184	164250	Roadside	100.0	100.0	-	21.2	16.9	16.9	17.1
SW123	588153	164227	Roadside	100.0	100.0	-	27.3	21.8	22.7	23.8
<b>Keycol Hill and Sittingbourne</b>										
SW124	587775	164320	Roadside	100.0	100.0	-	<b>52.3</b>	34.8	36.9	39.1
SW121	587936	164267	Roadside	100.0	100.0	-	<b>42.7</b>	33.9	34.6	34.4
SW130	587775	164320	Roadside	100.0	100.0	-	<b>55.5</b>	35.8	34.8	<b>40.9</b>
SW131	587775	164320	Roadside	100.0	100.0	-	<b>55.0</b>	35.0	35.8	39.6
SW143	588383	164190	Roadside	92.3	92.3	-	-	20.7	22.4	22.1
SW144	587917	164277	Roadside	100.0	100.0	-	-	32.9	33.7	34.6
SW145	587694	164355	Roadside	92.3	92.3	-	-	22.3	24.1	24.6
SW146	587513	163885	Roadside	100.0	100.0	-	-	17.8	17.7	19.6
SW154	587874	164292	Roadside	100.0	100.0	-	-	34.0	34.7	36.5
SW155	590292	166977	Roadside	92.3	92.3	-	-	-	18.9	19.5
SW156	590525	166298	Roadside	100.0	100.0	-	-	-	19.5	19.5
SW157	590428	166438	Roadside	100.0	100.0	-	-	-	26.8	24.6
SW158	590494	164416	Roadside	100.0	100.0	-	-	-	33.8	34.1
SW159	590567	164439	Roadside	100.0	100.0	-	-	-	30.3	30.6
SW160	590904	165192	Roadside	92.3	92.3	-	-	-	23.7	23.1
SW161	589167	164747	Roadside	92.3	92.3	-	-	-	24.4	20.4
SW163	590850	163852	Roadside	100.0	100.0	-	-	-	27.1	26.7
SW132	590508	163850	Roadside	92.3	92.3	-	31.4	25.9	28.2	28.9
SW77	591040	166519	Roadside	100.0	100.0	32.9	29.6	24.6	26.0	24.7
SW147	590370	163877	Kerbside	92.3	92.3	-	-	26.4	27.7	26.8
SW148	589163	164011	Roadside	92.3	92.3	-	-	19.5	20.8	25.5
SW149	589799	163856	Roadside	76.9	76.9	-	-	25.0	27.3	21.7

East Street										
SW56	591453	163465	Roadside	90.4	90.4	<b>40.5</b>	37.7	27.6	30.0	30.8
SW76	592209	163302	Roadside	100.0	100.0	34.2	33.5	22.2	26.0	26.8
SW151	591515	163451	Roadside	75.0	75.0	-	-	19.0	20.9	23.9
SW152	591423	163484	Roadside	75.0	75.0	-	-	23.9	25.6	23.3
SW125	592837	163150	Roadside	90.4	90.4	-	23.7	16.7	17.0	18.0
SW126	592867	163131	Roadside	90.4	90.4	-	37.2	24.0	24.6	27.3
Teynham										
SW80	595155	162472	Roadside	82.7	82.7	39.3	32.8	26.1	25.3	26.7
SW91	595150	162461	Roadside	92.3	92.3	32.3	33.4	23.7	24.7	28.3
SW92	595195	162446	Roadside	92.3	92.3	32.1	31.9	23.5	22.6	24.7
SW153	594748	162602	Roadside	100.0	100.0	-	-	23.8	21.5	23.9
Ospringe and Faversham										
SW28	600225	160887	Roadside	100.0	100.0	<b>45.4</b>	<b>43.0</b>	34.0	34.3	38.1
SW29	600286	160868	Roadside	100.0	100.0	<b>41.1</b>	<b>40.9</b>	30.4	29.0	32.7
SW30.1	600363	160869	Roadside	100.0	100.0	36.3	31.1	22.3	23.0	26.3
SW30.2	600363	160869	Roadside	100.0	100.0	36.3	31.1	22.3	23.0	24.9
SW30.3	600363	160869	Roadside	100.0	100.0	36.3	31.1	22.3	23.0	25.8
SW31	600444	160848	Roadside	100.0	100.0	<b>42.6</b>	37.9	27.8	30.0	32.4
SW32	600422	160843	Roadside	100.0	100.0	36.8	36.9	25.0	24.5	29.2
SW96	600358	160859	Roadside	75.0	75.0	36.4	36.6	27.9	26.7	32.8
SW169	600262	160697	Roadside	100	76.9	-	-	-	-	9.5
SW119	600568	160819	Roadside	100	100.0	27.0	24.7	19.1	17.6	19.4
SW120	600456	160836	Roadside	100	100.0	<b>42.2</b>	39.9	29.9	29.4	32.8
SW135	600326	160860	Roadside	100	100.0	-	-	31.6	30.6	35.3
SW98	601818	160474	Roadside	92.3	92.3	33.0	33.5	23.4	22.7	24.7
SW117	601629	160525	Roadside	100.0	100.0	35.3	28.5	20.3	20.8	19.7
SW136	601491	160570	Roadside	25.0	25.0	-	-	26.4	27.3	28.4
SW137	601443	160486	Roadside	100.0	100.0	-	-	35.7	24.7	26.0
SW138	601739	161310	Roadside	82.7	82.7	-	-	24.9	25.8	24.0
SW139	601706	161338	Roadside	92.3	92.3	-	-	21.5	23.8	24.1
SW168	600001	161622	Roadside	100.0	100.0	-	-	-	-	23.7

Rural and Ruban back ground										
SW07	600758	169576	Rural	100.0	100.0	10.7	11.3	8.3	7.7	8.0
SW34	606624	161108	Rural	100.0	100.0	10.3	9.8	8.0	7.3	8.5
SW88	589318	165045	Urban Background	100.0	100.0	22.2	21.1	14.6	16.3	16.5

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

Diffusion tube data has been bias adjusted.

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

**Notes:**

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

Exceedances of the NO<sub>2</sub> annual mean objective of  $40\mu\text{g}/\text{m}^3$  are shown in **bold**.

NO<sub>2</sub> annual means exceeding  $60\mu\text{g}/\text{m}^3$ , indicating a potential exceedance of the NO<sub>2</sub> 1-hour mean objective are shown in **bold and underlined**.

Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

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

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

**Figure A.1- Trends in Annual Mean NO<sub>2</sub> Concentrations at automatic monitoring sites**

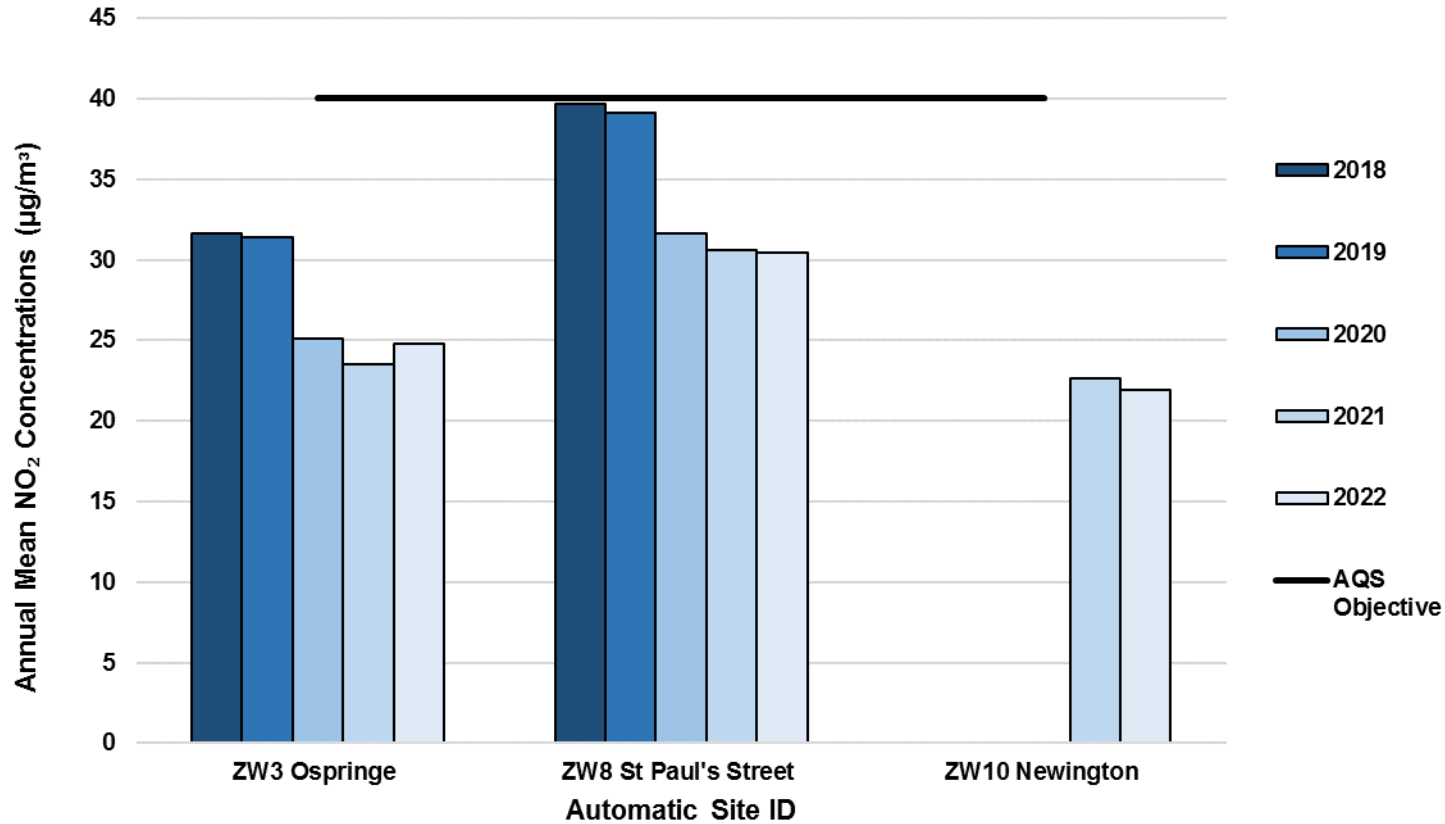


Figure A.1 presents NO<sub>2</sub> annual mean concentrations for sites ZW3, ZW8 and ZW10 between years 2018 to 2022. There are no exceedances of the annual mean objective in 2022 and there is a general trend of reduction experienced across the sites.

**Figure A.2- Trends in Annual Mean NO<sub>2</sub> Concentrations within AQMA No. 1 Newington**

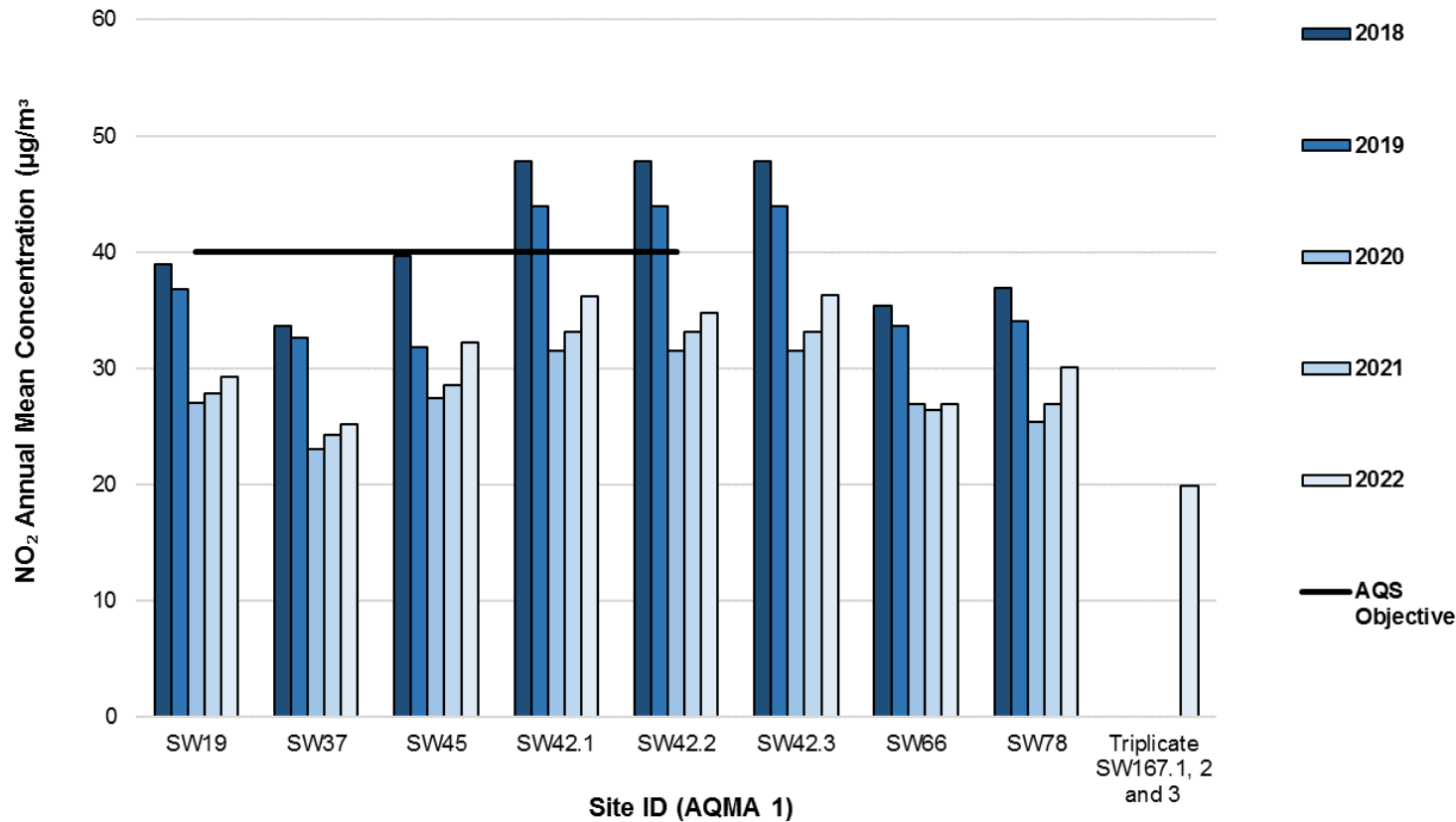


Figure A.2 presents NO<sub>2</sub> annual mean concentrations for sites SW19, SW37, SW45, SW42. 1, 2 and 3, SW66, SW78 and triplicates SW167.1, 2 and 3 in AQMA1 between years 2018 to 2022. There are no exceedances of the annual mean objective in 2022 and there is a general trend of reduction experienced across the sites from 2018 but slight increase from 2020 and 2021.

**Figure A.3- Trends in Annual Mean NO<sub>2</sub> Concentrations within AQMA No. 2/6 Ospringe**

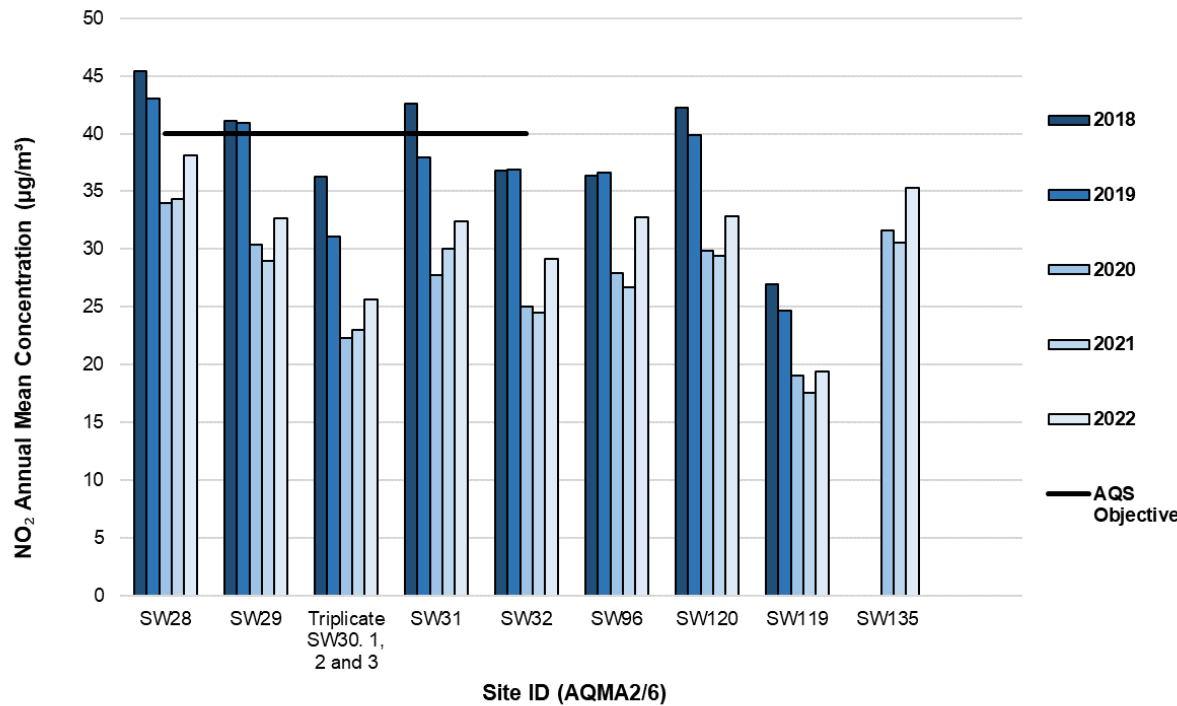


Figure A.3 presents NO<sub>2</sub> annual mean concentrations for sites SW28, SW29, triplicate SW30. 1, 2 and 3, SW31, SW32, SW96, SW120, SW119 and SW135 in AQMA2/6 between years 2018 to 2022. There are no exceedances of the annual mean objective in 2022 and there is a general trend of reduction experienced across the sites from 2018 but slight increase from 2020 and 2021.



**Figure A.4– Trends in Annual Mean NO<sub>2</sub> Concentrations within AQMA No. 3 East Street**

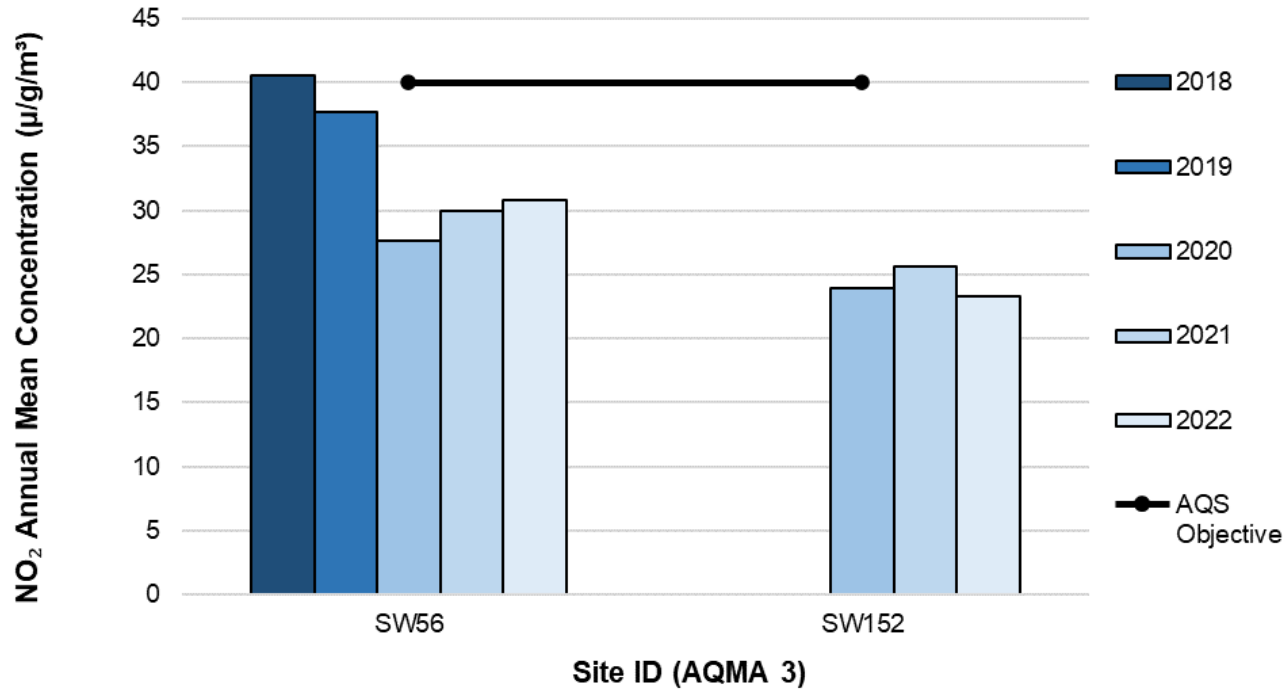


Figure A.4 presents NO<sub>2</sub> annual mean concentrations for sites SW56 and SW152 in AQMA 3 between years 2018 to 2022. There are no exceedances of the annual mean objective in 2022 and there is a general trend of reduction experienced at site SW56 with a slight increase since 2020 and slight decrease in site SW152 from 2021.

**Figure A.5 – Trends in Annual Mean NO<sub>2</sub> Concentrations within AQMA No. 4 St Paul’s Street**

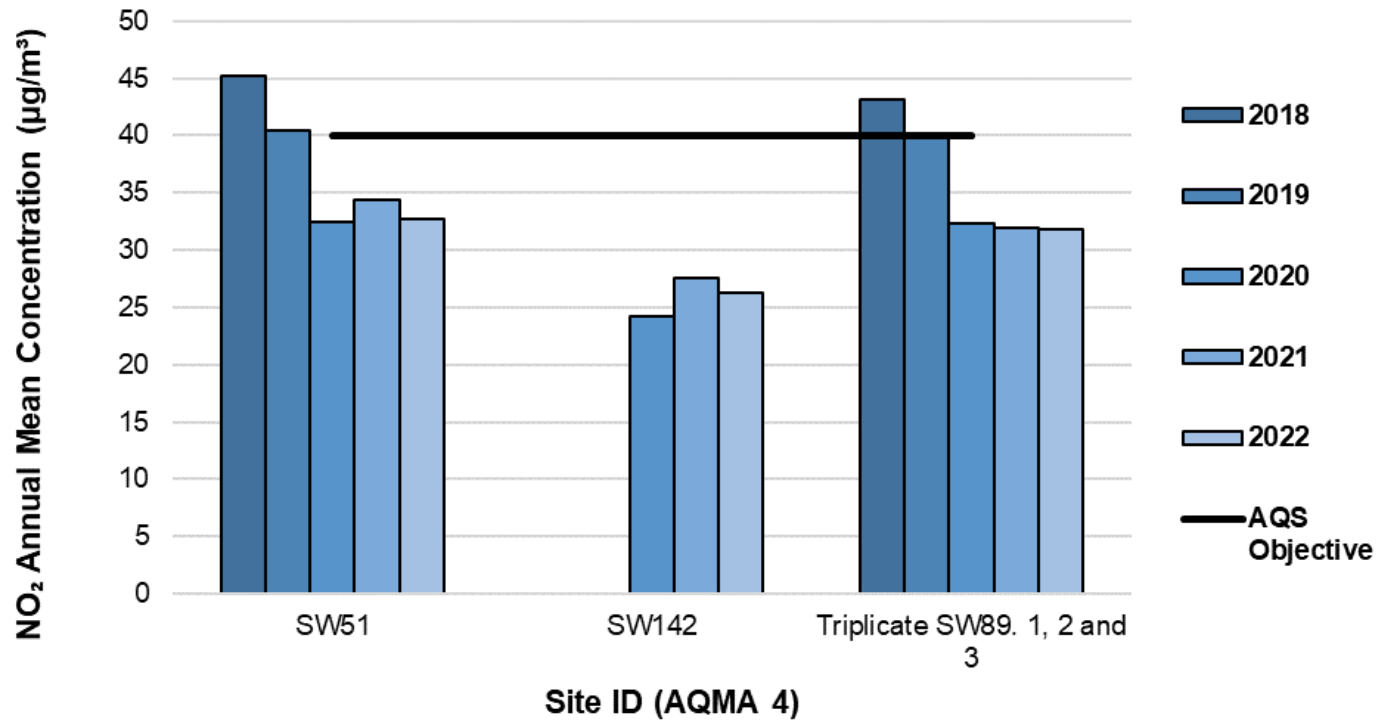


Figure A.5 presents NO<sub>2</sub> annual mean concentrations for sites SW51, SW142 and SW89 triplicate in AQMA 4 between years 2018 to 2022. There are no exceedances of the annual mean objective in 2022 and there is a general trend of reduction experienced across SW51 and triplicate SW89 sites since 2018. SW142 shows a slight decrease since 2021.

**Figure A.6 – Trends in Annual Mean NO<sub>2</sub> Concentrations within AQMA No. 5 Teynham**

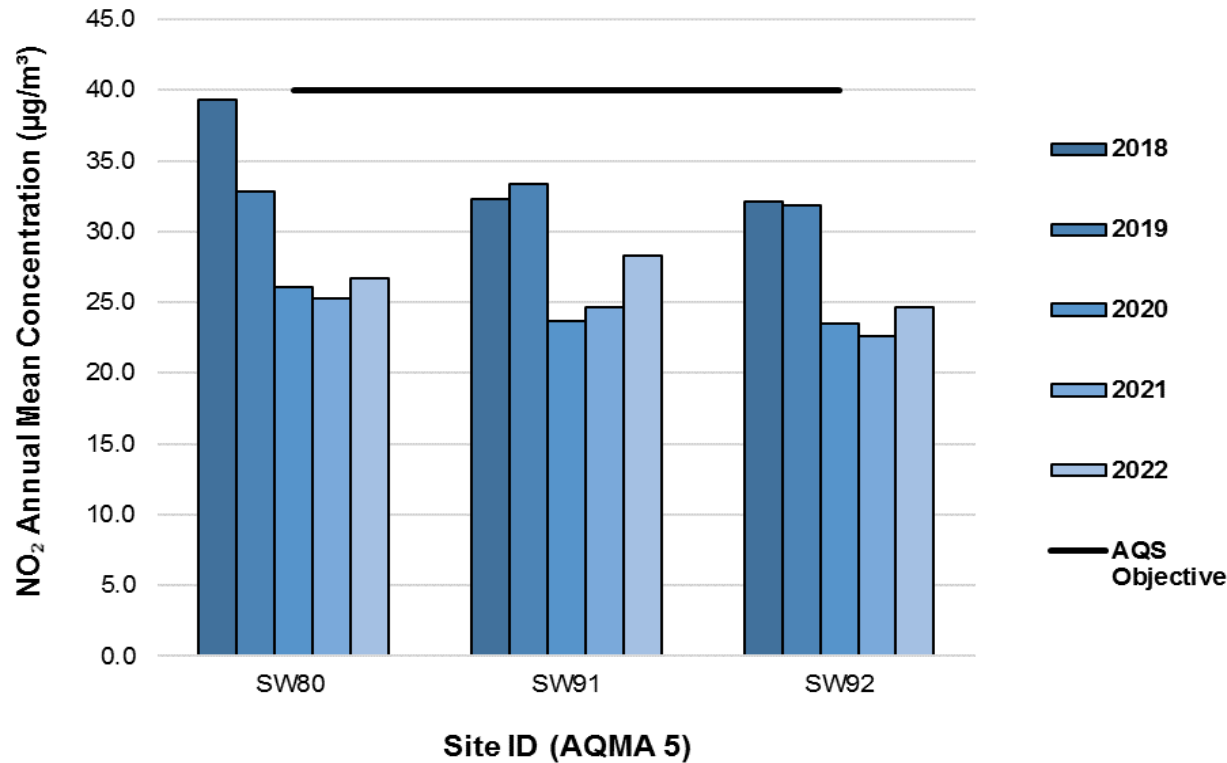


Figure A.6 presents NO<sub>2</sub> annual mean concentrations for sites SW80, SW91 and SW92 in AQMA 5 between years 2018 to 2022. There are no exceedances of the annual mean objective in 2022 and there is a general trend of reduction experienced across sites since 2018 with slight increase from 2021.

**Figure A.7 – Trends in Annual Mean NO<sub>2</sub> Concentrations within AQMA No. 7 Keycol Hill**

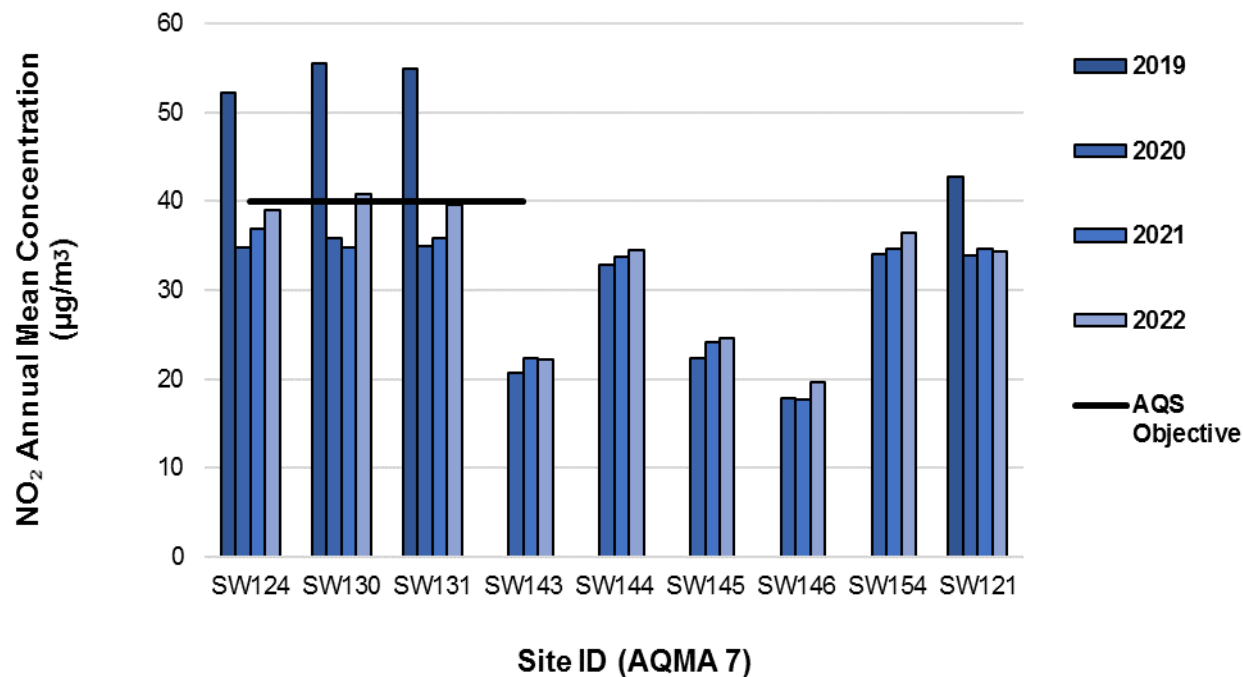


Figure A.7 presents NO<sub>2</sub> annual mean concentrations for sites SW124, SW130, SW131, SW143, SW144, SW145, SW146, SW154, SW121 in AQMA 7 between years 2018 to 2022. There is one exceedance at SW130 site. Sites SW124, SW131 and SW154 show no exceedance but are within 10% of the Air Quality Objective (AQO) of 40µg/m<sup>3</sup> Annual Mean in 2022. There are no exceedances of the annual mean objective in 2022 in sites SW143, SW144, SW145, SW146 and SW121 and there is a general trend of reduction experienced across sites since 2018 with slight increase at seven sites from 2020 and 2021. Three sites vary in high, for example, SW124 (highest point), SW130 (middle point), SW131 (lower point). No significant difference in concentrations has been recorded for the height experiment.

**Figure A.8– Trends in Annual Mean NO<sub>2</sub> Concentrations within Isle of Sheppey**

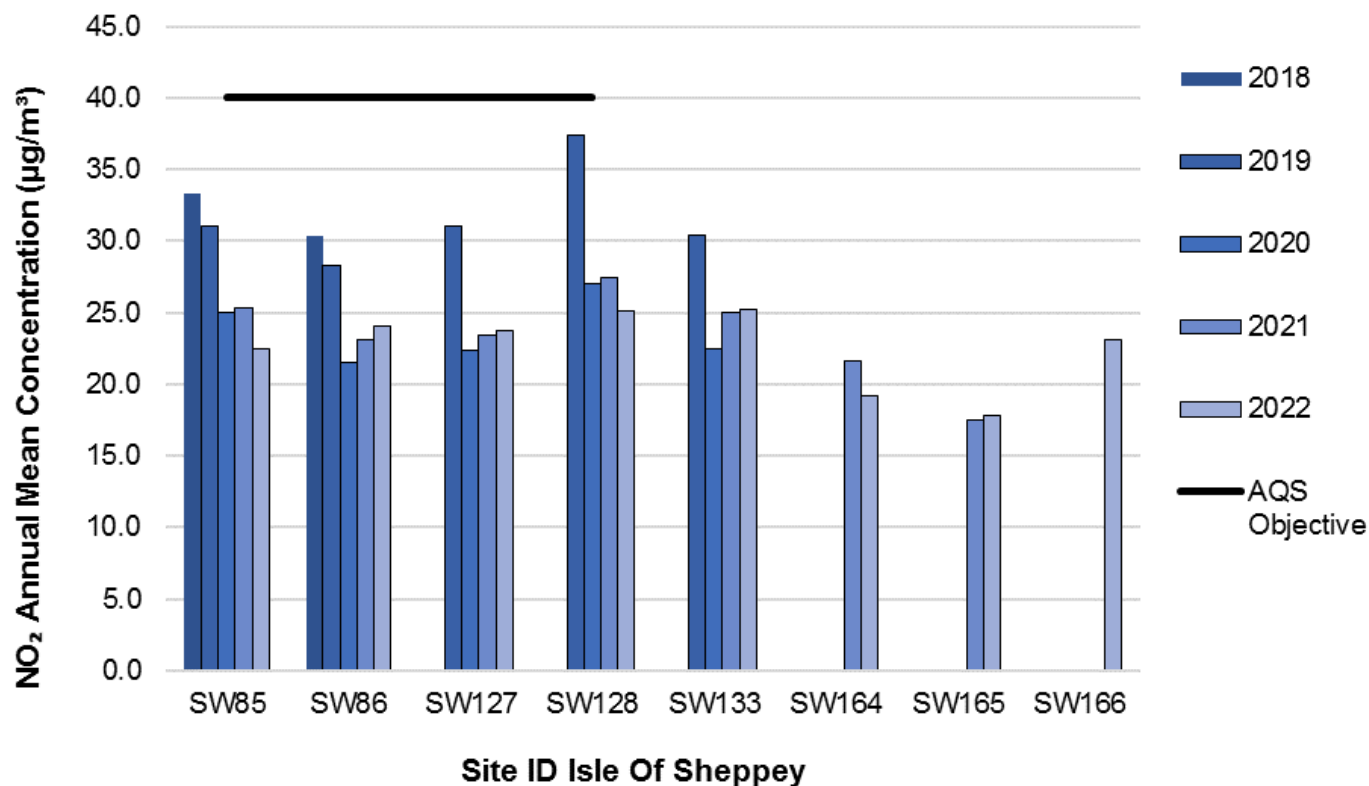


Figure A.8 presents NO<sub>2</sub> annual mean concentrations for sites SW85, SW86, SW127, SW128, SW133, SW164, SW165 and SW166 within Isle of Sheppey between years 2018 to 2022. There are no exceedances of the annual mean objective in 2022 and there is a general trend of reduction experienced across sites since 2018 with slight increase since 2020 and 2021.

**Figure A.9 – Trends in Annual Mean NO<sub>2</sub> Concentrations within Sittingbourne**

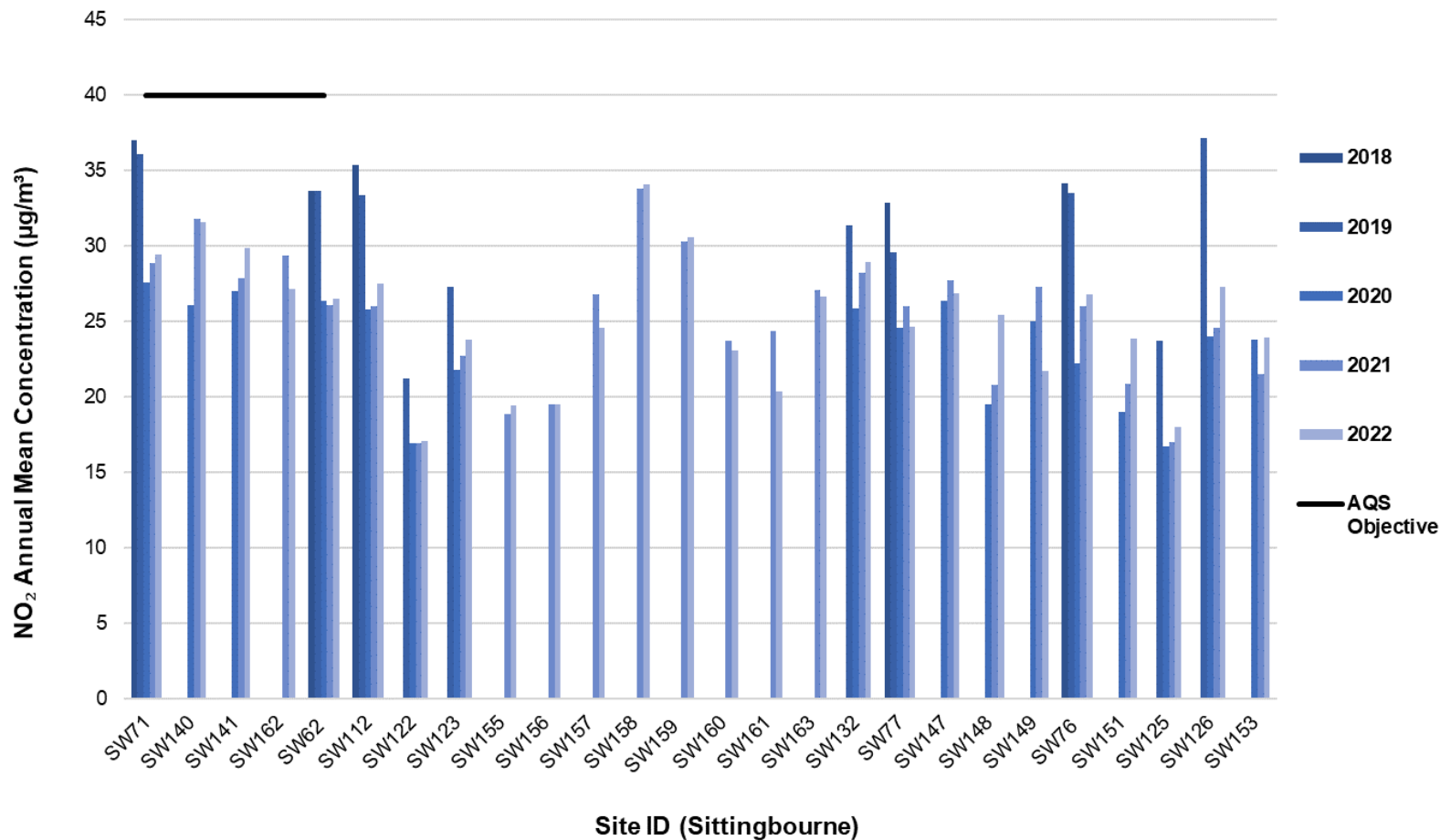


Figure A.9 presents NO<sub>2</sub> annual mean concentrations for Sittingbourne sites between years 2018 to 2022. There are no exceedances of the annual mean objective in 2022 and there is a general trend of reduction experienced across sites since 2018 and 2019 with slight increase in most sites since 2020 and 2021.

**Figure A.10 – Trends in Annual Mean NO<sub>2</sub> Concentrations within Faversham**

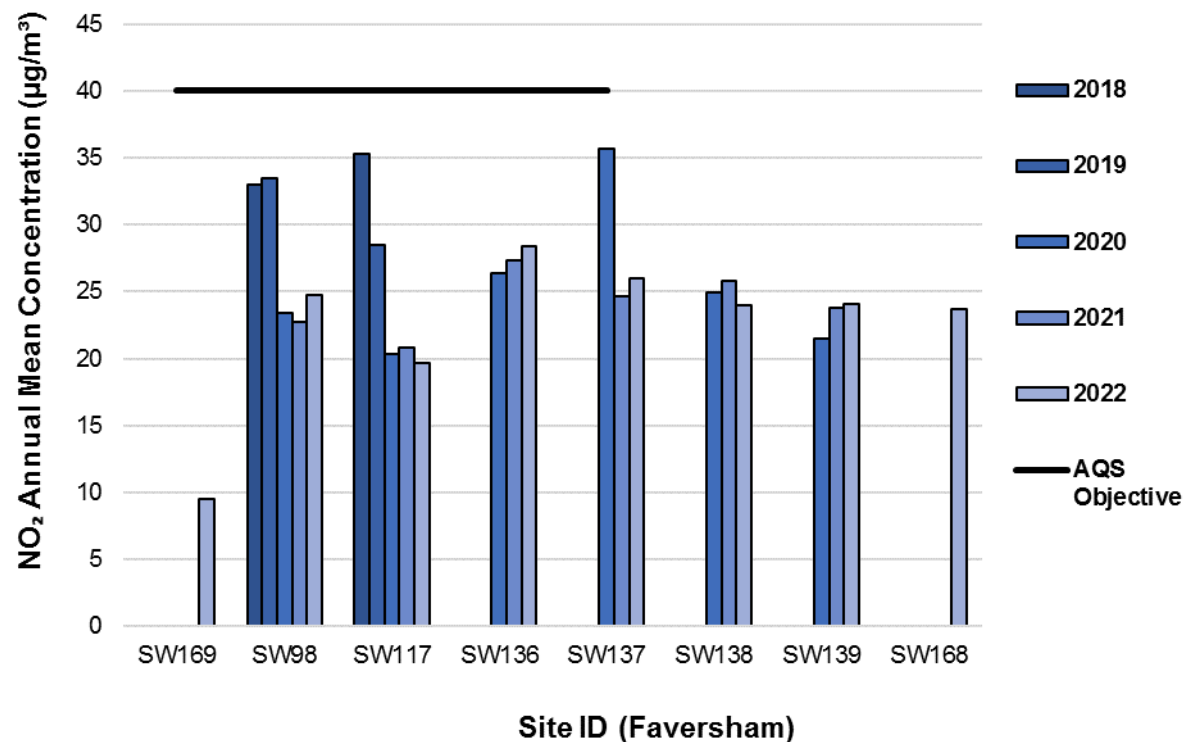


Figure A.10 presents NO<sub>2</sub> annual mean concentrations for sites Faversham sites (SW169, SW98, SW117, SW136, SW137, SW138, SW139 and SW168) between years 2018 to 2022. There are no exceedances of the annual mean objective in 2022 and there is a general trend of reduction experienced across sites since 2018 and 2019 with slight increase in four sites since 2021.

**Table A.5 – 1-Hour Mean NO<sub>2</sub> Monitoring Results, Number of 1-Hour Means > 200µg/m<sup>3</sup>**

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2022 (%) <sup>(2)</sup>	2018	2019	2020	2021	2022
ZW3	600360	160869	Roadside	95.7	95.7	0 (116.2)	0	0	1	0
ZW8	590264	164396	Roadside	98.5	98.5	1	0	0	0	0
ZW10	585970	164787	Roadside	99.6	99.6	-	-	-	0	0

**Notes:**

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

Exceedances of the NO<sub>2</sub> 1-hour mean objective (200µg/m<sup>3</sup> not to be exceeded more than 18 times/year) are shown in **bold**.

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

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

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



**Table A.6– Annual Mean PM<sub>10</sub> Monitoring Results (µg/m<sup>3</sup>)**

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2022 (%) <sup>(2)</sup>	2018	2019	2020	2021	2022
ZW3	600360	160869	Roadside	94.9	94.9	27.6	24.8	22.2	23.3	24.4
ZW8	590264	164396	Roadside	96.6	96.6	-	28.1	31.5	37.1	37.5
ZW10	585970	164787	Roadside	94.1	94.1	-	-	-	17.1	18.2

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

**Notes:**

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

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

All means have been “annualised” as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

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

**Figure A.11– Trends in Annual Mean PM<sub>10</sub> Concentrations**

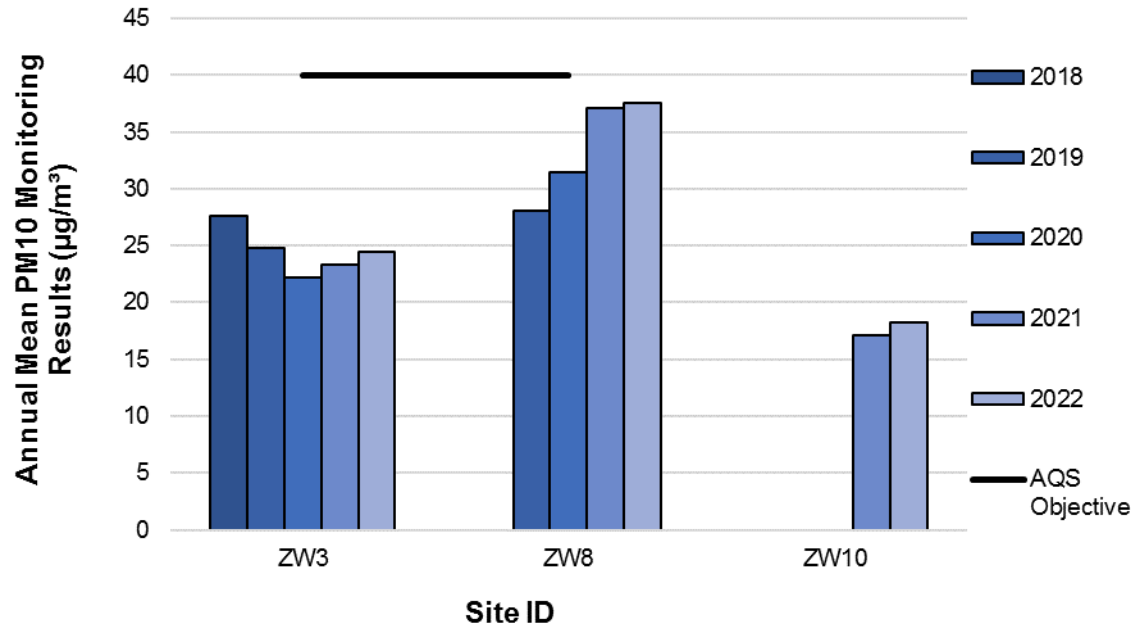


Figure A.11 presents PM<sub>10</sub> annual mean concentrations for sites ZW3, ZW8 and ZW10 between years 2018 to 2022. There are no exceedances of the annual mean objective in 2022. ZW3 shows a decrease since 2018 but slight increase from 2020. ZW8 shows a continuous increase from 2018. ZW10 site shows a slight increase between 2021 and 2022.

**Table A.7 – 24-Hour Mean PM<sub>10</sub> Monitoring Results, Number of PM<sub>10</sub> 24-Hour Means > 50µg/m<sup>3</sup>**

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2022 (%) <sup>(2)</sup>	2018	2019	2020	2021	2022
ZW3	600360	160869	Roadside	94.9	94.9	5	15	13	12	11
ZW8	590264	164396	Roadside	96.6	96.6	11	<b>42</b>	<b>59</b>	<b>59</b>	<b>62</b>
ZW10	585970	164787	Roadside	94.1	94.1	-	-	-	0	5

**Notes:**

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

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

If the period of valid data is less than 85%, the 90.4th percentile of 24-hour means is provided in brackets.

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

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

**Figure A.12 – Trends in Number of 24-Hour Mean PM<sub>10</sub> Results > 50µg/m<sup>3</sup>**

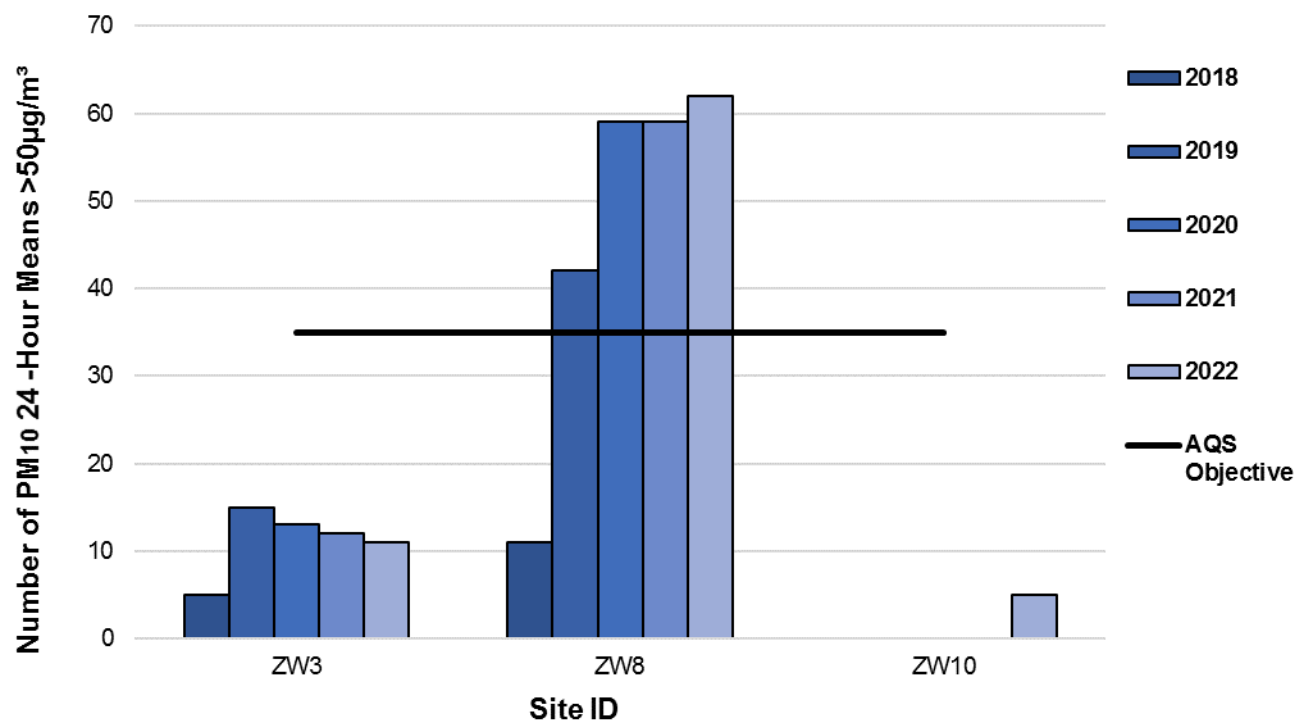


Figure A.12 presents the number of PM<sub>10</sub> 24-Hour Means above 50µg/m<sup>3</sup> for sites ZW3 (Ospringle), ZW8 (St Paul’s Street) and ZW10 (Newington) between years 2018 to 2022. Site ZW3 shows a decrease from 2019 with 11 exceedances in 2022. ZW8 shows an increase since 2018 with 62 exceedances in 2022. Site ZW10 shows an increase of exceedances with five exceedances in 2022. Exceedances of the PM<sub>10</sub> 24-hour mean objective is 50µg/m<sup>3</sup> not to be exceeded more than 35 times/year.

**Table A.8 – Annual Mean PM<sub>2.5</sub> Monitoring Results (µg/m<sup>3</sup>)**

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2022 (%) <sup>(2)</sup>	2018	2019	2020	2021	2022
ZW8	590264	164396	Roadside	97.2	97.2	-	-	13.1	11.3	11.5
ZW10	585970	164787	Roadside	96.1	96.1	-	-	-	11.8	12.4

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

**Notes:**

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

All means have been “annualised” as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

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

**Figure A.13 – Trends in Annual Mean PM<sub>2.5</sub> Concentrations**

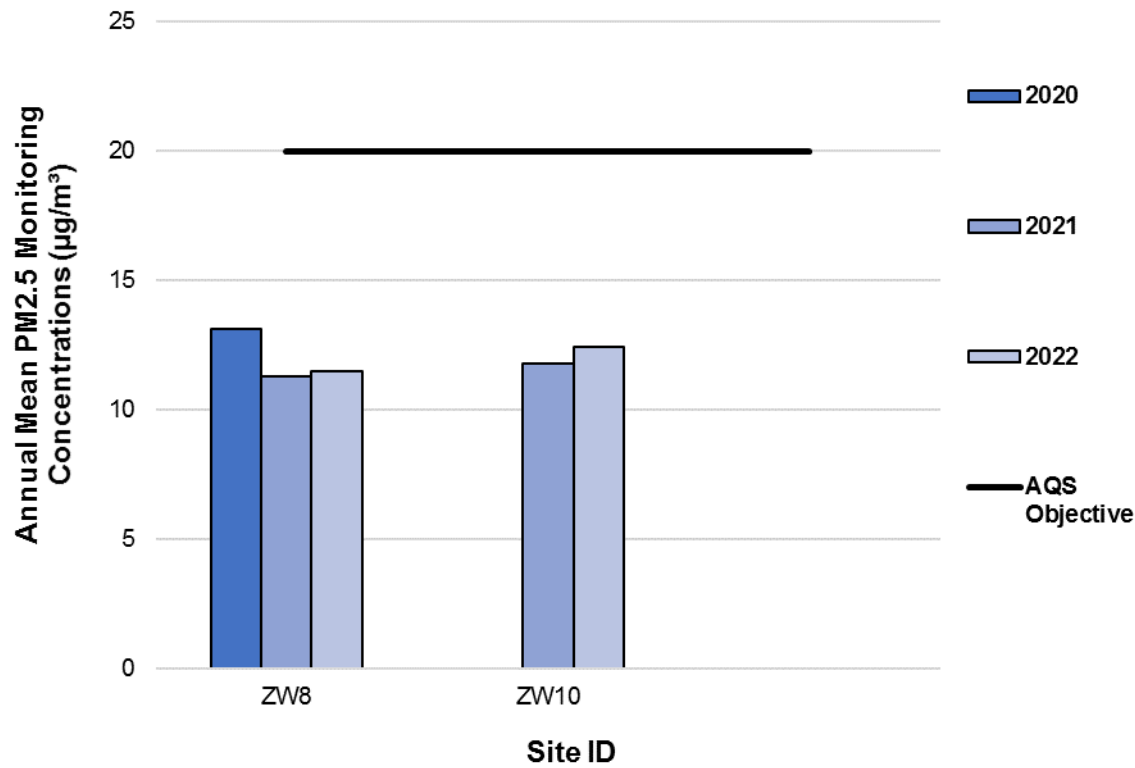


Figure A.13 presents the trends in the annual mean PM<sub>2.5</sub> concentrations for sites ZW8 (St Paul’s Street) and ZW10 (Newington) between years 2018 to 2022. Site ZW8 shows a decrease from 2020 and slight increase from 2021. ZW10 shows a slight increase from 2021.

## Appendix B: Full Monthly Diffusion Tube Results for 2022

Table B.1 – NO<sub>2</sub> 2022 Diffusion Tube Results (µg/m<sup>3</sup>)

- All erroneous data has been removed from the NO<sub>2</sub> diffusion tube dataset presented in Table B.1.
- Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.
- Local bias adjustment factor used (0.77).
- 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 2022 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.

**Notes:**

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

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

See Appendix C for details on bias adjustment and annualisation.

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
<b>Isle of Sheppey</b>																		
SW85	591752	175012	25.7	33.9	41.1	33.9	23.3	25.0	24.1	26.2		27.8	25.4	33.1	29.0	22.5		
SW86	591726	175018	25.9	30.7	45.0	31.4	29.9	25.3	32.9	33.9	32.6	28.4	22.2	34.6	31.1	24.0		
SW127	593151	172962	21.1	25.9	49.1		32.6	27.8	30.2	32.1	30.8	29.5	29.1	29.6	30.7	23.7		
SW128	593092	172870	26.5	27.6	48.3	40.0	28.5	25.9	32.3	37.7	35.2	22.9	28.3	37.2	32.5	25.2		
SW133	592208	174596	30.6	35.9	37.2	29.0	32.0		28.5	28.9		35.5	28.6	39.5	32.6	25.2		
SW164	593292	172897	25.3	29.9	26.4	22.7	27.7	24.2	22.2	23.6	23.0	26.4	14.2	32.5	24.8	19.2		
SW165	591396	172070				20.8	20.4	19.6	18.3	23.1	26.3	26.5		32.3	23.4	17.8		
SW166	594021	171626	23.5	33.3	32.7	27.4	25.3	28.4	28.6	28.9	29.0	28.7	32.9	39.8	29.9	23.1		
<b>Newington</b>																		
SW19	585904	164794	51.8	36.7	47.6	31.0	34.6	35.6	34.0	33.7	32.6	46.2	34.0	37.0	37.9	29.3		
SW37	585868	164803	49.3	25.2	47.2	30.0	28.0	23.3	28.9	32.0	28.1	31.4	29.5	38.9	32.7	25.2		
SW42.1	585935	164787	65.5	40.2	62.4	40.6	39.9	43.2	42.5	46.3	42.2	53.6	36.3	49.5	46.9	36.2		
SW42.2	585935	164787	59.3	39.9	48.4	37.7	43.8	40.1	40.4	38.5	41.1	51.3	49.8	50.1	45.0	34.8		



SW42.3	585935	164787	63.9	39.1	52.5	41.4	45.0	42.1	36.9	41.4	41.7	53.9	52.4	52.5	46.9	36.3		
SW45	585989	164774	59.3	38.2	52.7	33.3	39.8	36.9	34.0	38.0	37.4	45.1	34.1	50.9	41.6	32.2		
SW66	586080	164746	48.7	35.5	38.2	27.5	31.1	30.4	30.0	30.2	28.0	40.8	33.2	44.5	34.8	26.9		
SW78	585951	164792	52.6	26.8	48.8	39.5	33.7	29.2	32.3	38.0	38.7	39.4	39.9	48.2	38.9	30.1		
SW167.1	585970	164788	43.3	21.1	34.6	18.3	23.0	19.8	19.2	23.0	22.7	29.2	23.0	30.0	25.6	19.8		
SW167.2	585970	164788	34.0	24.0	33.0	22.0	24.8	20.1	21.2	21.7	21.8	28.1	25.4	30.9	25.6	19.8		
SW167.3	585970	164788	39.8	23.4	37.0	21.9	23.7	20.4	20.8	22.3	22.5	28.0	24.9	29.5	26.2	20.2		
<b>St Paul's Street and Sittingbourne</b>																		
SW51	590236	164408	51.8	34.8	49.8	50.4	41.7	33.8	41.8	46.8	40.2	37.5	33.9	45.4	42.3	32.7		
SW71	590098	164455		42.7	45.7	32.7	38.5	27.2	30.1	34.6	38.6	41.4	41.0	46.0	38.0	29.4		
SW89.1	590252	164397	44.4	37.7	56.2	42.4	40.9	33.9	40.7	37.5	38.6	41.0	31.4	39.4	40.3	31.2		
SW89.2	590252	164397	49.0	36.8	49.8	38.5	40.1	37.5	41.5	40.2	37.3	38.9	41.8	41.7	41.1	31.8		
SW89.3	590252	164397	49.9	32.4	56.3	42.5	42.3	36.5	40.4	39.5	37.9	41.7	43.2	38.7	41.8	32.3		
SW140	590079	164367	53.1	35.9	54.1	42.2	35.9	40.2	40.9	29.4	42.6	43.9	35.7	36.7	40.9	31.6		
SW141	590071	164375	56.3	35.6	42.9	37.6	33.6		34.9	31.9	36.1	35.5	36.3	44.0	38.6	29.9		
SW142	590139	164406	52.7	27.3	50.0		28.3	26.0	32.8	33.7	33.3	29.2	22.1	39.2	34.1	26.3		

SW162	590093	164438	53.7	24.1	50.7	37.1	33.6	29.1	29.9	36.9	29.7	34.1	27.3	34.8	35.1	27.1		
SW62	588178	164236	58.8	38.4	27.6	30.2	29.7	24.7	23.0	32.9	31.2	34.4	38.5	42.4	34.3	26.5		
SW112	588329	164188	58.0	33.3	46.0	34.2	31.4	28.5	26.6	32.9	32.8	32.3	30.1	41.1	35.6	27.5		
SW121	587936	164267	52.0	51.7	36.7	49.5	48.7	44.3	41.3	50.1	42.6	38.0	37.1	42.2	44.5	34.4		
SW122	588184	164250	37.3	22.5	25.7	21.2	21.1	16.3	14.5	22.6	21.8	19.9	18.4	23.5	22.1	17.1		
SW123	588153	164227	42.8	29.1	35.6	29.7	30.6	27.4	24.7	32.5	29.3	28.4	27.0	31.9	30.8	23.8		
<b>Keycol Hill and Sittingbourne</b>																		
SW124	587775	164320	72.7	47.4	56.3	40.2	49.9	50.6	45.1	49.6	43.4	52.2	52.3	47.0	50.6	39.1		
SW130	587775	164320	72.2	47.3	65.9	47.1	51.5	49.7	48.0	55.8	47.1	54.8	44.1	51.2	52.9	40.9		
SW131	587775	164320	65.5	42.5	64.3	42.8	50.0	48.2	44.8	55.4	46.1	51.4	51.3	52.5	51.2	39.6		
SW143	588383	164190		29.1	34.0	29.7	27.5	18.5	23.1	31.9	26.8	27.0	28.6	38.5	28.6	22.1		
SW144	587917	164277	52.0	32.9	49.2	43.8	49.3	49.8	41.4	55.0	37.0	48.1	35.7	42.2	44.7	34.6		
SW145	587694	164355		26.0	48.7	33.6	26.0	25.2	28.3	35.8	31.0	34.2	18.3	42.5	31.8	24.6		
SW146	587513	163885	42.5	18.6	30.1	25.4	21.0	20.8	20.3	23.4	22.2	24.1	22.6	32.5	25.3	19.6		
SW154	587874	164292	58.5	28.9	68.1	56.4	44.6	42.1	44.5	55.2	50.0	41.6	32.3	44.1	47.2	36.5	30.0	
SW155	590292	166977	30.1		44.3	23.0	19.9	20.4	25.7	21.0	26.1	21.0	16.1	29.2	25.2	19.5		

SW156	590525	166298	40.8	20.0	36.3	22.6	20.8	15.5	21.2	22.4	24.1	23.7	26.0	29.1	25.2	19.5		
SW157	590428	166438	54.7	31.1	42.8	30.4	26.0	23.1	29.6	28.9	31.1	30.9	25.8	27.0	31.8	24.6		
SW158	590494	164416	54.4	38.0	53.0	47.0	36.4	41.2	38.7	48.7	41.9	39.6	47.6	42.5	44.1	34.1		
SW159	590567	164439	51.7	39.1	51.3	41.5	35.2	32.4	31.0	37.7	37.7	38.9	38.3	39.6	39.5	30.6		
SW160	590904	165192	48.9	28.2	39.6	30.6	19.1	23.4		30.4	31.1	24.9	19.5	32.9	29.9	23.1		
SW161	589167	164747	43.7	25.5	37.7	23.3	21.3	19.3	21.2	23.2	24.4	25.0		25.6	26.4	20.4		
SW163	590850	163852	42.9	30.4	40.9	33.0	35.6	32.1	35.1	40.8	36.3	29.2	22.7	35.0	34.5	26.7		
SW132	590508	163850	51.2	38.8	44.1	37.7	35.5	27.1		37.4	33.8	33.6	30.0	42.4	37.4	28.9		
SW77	591040	166519	47.4	29.0	37.1	35.9	30.6	22.9	35.6	31.9	31.6	22.5	28.8	29.8	31.9	24.7		
SW147	590370	163877	49.9	38.5	40.9	30.8	31.5	29.2	37.0		32.7	41.5	16.5	33.3	34.7	26.8		
SW148	589163	164011	38.7	27.8	38.9	34.4	32.5	30.0	29.9	35.0	33.7	26.4		35.0	32.9	25.5		
SW149	589799	163856		23.5	30.3	27.7	22.8		19.0	25.9	27.3	37.2		39.2	28.1	21.7		
<b>East Street, Sittingbourne and Bapchild</b>																		
SW56	591453	163465	56.6	36.5	44.0	36.2		39.6	39.3	37.6	41.1	40.8	32.2	34.6	39.9	30.8		
SW76	592209	163302	59.6	37.7	28.9	26.9	31.7	31.0	30.0	29.8	34.9	36.0	34.6	35.1	34.7	26.8		
SW151	591515	163451	44.9	23.0	37.6	30.4		19.0	26.5	28.0		47.0		21.5	30.9	23.9		

SW152	591423	163484	44.3	23.3	43.7		27.5	2.7	33.2		36.0	28.1		32.0	30.1	23.3		
SW125	592837	163150	38.5	19.8	32.5	21.9	21.8	15.2	22.1	23.6	27.9		11.0	21.4	23.2	18.0		
SW126	592867	163131	53.1	33.9	39.6	26.8	33.5	29.6	31.1	29.5	37.7		36.3	37.1	35.3	27.3		
Teynham																		
SW80	595155	162472	38.2	26.5	50.2	39.4	34.7	26.0	35.9	40.2		33.1	21.0		34.5	26.7		
SW91	595150	162461	49.9	35.0	48.8	28.5	34.6	30.1	29.6	33.5	37.3	37.0		38.2	36.6	28.3		
SW92	595195	162446		35.7	32.1	25.9	36.3	28.5	29.8	29.7	31.1	30.9	36.0	35.4	31.9	24.7		
SW153	594748	162602	43.1	29.0	39.8	23.7	29.3	23.8	27.7	30.1	31.8	33.9	31.0	28.4	31.0	23.9		
Ospringe and Faversham																		
SW28	600225	160887	58.1	42.6	60.0	43.3	53.0	47.6	50.1	53.2	56.5	48.4	47.4	30.7	49.2	38.1		
SW29	600286	160868	56.2	42.9	49.2	31.0	39.4	35.1	41.3	40.6	44.7	43.0	47.6	36.0	42.3	32.7		
SW30.1	600363	160869	45.5	30.1	41.6	28.8	29.6	29.8	32.4	34.1	37.2	27.6	34.8	36.1	34.0	26.3		
SW30.2	600363	160869	46.7	30.1	34.3	29.0	37.1	27.8	32.5	31.1	35.9	30.0	22.1	30.0	32.2	24.9		
SW30.3	600363	160869	46.5	29.6	38.1	28.5	43.0	30.4	31.9	15.9	36.7	30.1	34.0	36.0	33.4	25.8		
SW31	600444	160848	51.1	29.0	49.5	43.8	44.1	39.6	41.9	45.4	47.6	32.7	35.8	42.0	41.9	32.4		
SW32	600422	160843	50.1	40.4	42.8	28.1	38.9	38.6	35.7	35.3	36.6	39.6	35.5	30.9	37.7	29.2		

SW96	600358	160859	51.5	46.2	37.6	28.8	44.9	44.5			40.4		44.8	42.8	42.4	32.8		
SW169	600262	160697				11.6	11.9	10.2	11.2	12.4	12.6	11.3	13.4	15.7	12.3	9.5		
SW119	600568	160819	25.0	26.7	21.1	16.8	27.3	26.3	24.3	24.8	25.5	31.1	26.2	26.6	25.1	19.4		
SW120	600456	160836	52.5	44.3	48.6	30.7	46.0	43.2	41.6	41.1	44.2	43.7	27.9	45.5	42.4	32.8		
SW135	600326	160860	59.3	47.1	48.0	31.0	42.1	42.9	43.6	41.5	45.6	48.6	53.6	44.6	45.7	35.3		
SW98	601818	160474	41.2		30.6	26.3	30.2	27.7	29.9	29.0	33.0	32.6	36.0	35.4	32.0	24.7		
SW117	601629	160525	39.2	13.0	26.9	23.5	21.7	20.1	25.7	25.8	29.0	23.3	25.8	31.2	25.4	19.7		
SW136	601491	160570								38.5	40.6	35.6			38.2	28.4		
SW137	601443	160486	40.4	26.2	41.8	30.9	21.7	32.2	36.8	37.4	39.6	34.2	24.4	38.1	33.6	26.0		
SW138	601739	161310	50.1	24.9		30.7		19.6	30.9	34.8	33.9	27.5	21.4	36.3	31.0	24.0		
SW139	601706	161338	41.5	31.2		26.3	27.1	24.0	29.5	29.5	36.0	29.4	31.6	37.1	31.2	24.1		
SW168	600001	161622	37.8	28.0	33.2	24.0	28.4	28.2	26.6	27.5	31.0	29.0	35.4	38.8	30.7	23.7		
Rural and Urban background																		
SW07	600758	169576	11.6	11.1	19.5	10.2	9.0	5.7	4.3	9.0	9.1	10.6	9.4	14.3	10.3	8.0		
SW34	606624	161108	20.1	9.5	18.2	8.4	8.9	6.9	8.6	8.3	10.0	9.9	9.3	13.8	11.0	8.5		
SW88	589318	165045	38.4	24.1	29.2	19.8	18.6	14.6	14.9	16.9	16.7	15.7	19.4	27.4	21.3	16.5		

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

### **New or Changed Sources Identified Within Swale Borough Council During 2022**

Swale Borough Council has not identified any new sources relating to air quality within the reporting year of 2022.

### **Additional Air Quality Works Undertaken by Swale Borough Council During 2022**

Swale Borough Council has not completed any additional works or projects within the reporting year of 2022.

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

The diffusion tubes for the year 2022 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 NO<sub>2</sub> diffusion tubes supplied by SOCOTEC have been classified as ‘good’ for all observations during 2022. 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

Annualisation is required for any site with data capture less than 75% but greater than 25%. Annualisation was required at sites SW165 and SW136 for any non-automatic monitoring sites.

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

Site ID	Annualisation Factor <Canterbury Military Road>	Annualisation Factor >Thurrock - London Road (Purfleet)>	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
SW165	0.9350	1.0310	0.9830	23.4	23.0
SW136	0.9330	0.9853	0.9591	38.2	36.7

### Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2022 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG22 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO<sub>x</sub>/NO<sub>2</sub> continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Swale Borough Council have applied a local bias adjustment factor of 0.77 to the 2022 monitoring data. The local bias adjustment factor is in line with the LAQM.TG(22) guidance. A summary of bias adjustment factors used by Swale Borough Council over the past five years is presented in

Local bias adjustment calculations are presented in Table C.2.

Table C.2. The national bias adjustment factor for comparison is 0.77.

Three 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<sub>2</sub>/NO<sub>x</sub> continuous analysers at ZW3 Ospringe, ZW8 St Paul's Street and ZW10 Newington. Within Swale each of the automatic analysers are collocated with diffusion tubes in triplicate:

Site name	Site code	Diffusion Tube, Triplicate ID
Ospringe	ZW3	SW30. 1, 2 and 3
St Paul's Street	ZW8	SW89. 1, 2 and 3
Newington	ZW10	SW167. 1, 2, and 3

Local bias adjustment calculations are presented in Table C.2.

**Table C.2 – Bias Adjustment Factor**

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2022	Local	-	0.77
2021	Local	-	0.77
2020	Local	-	0.77
2019	Local	-	0.78
2018	National	03/18	0.77

**Table C.3 – Local Bias Adjustment Calculation**

	Local Bias Adjustment Input 1	Local Bias Adjustment Input 2	Local Bias Adjustment Input 3
Periods used to calculate bias	12	12	9
Bias Factor A	0.86 (0.78 - 0.96)	0.75 (0.71 - 0.79)	0.73 (0.68 - 0.79)
Bias Factor B	17% (5% - 29%)	34% (27% - 41%)	37% (27% - 48%)
Diffusion Tube Mean (µg/m <sup>3</sup> )	25.8	41.1	34.1
Mean CV (Precision)	5.0%	5.4%	4.8%
Automatic Mean (µg/m <sup>3</sup> )	22.1	30.7	24.9
Data Capture	99%	98%	100%



	Local Bias Adjustment Input 1	Local Bias Adjustment Input 2	Local Bias Adjustment Input 3
Adjusted Tube Mean ( $\mu\text{g}/\text{m}^3$ )	22 (20 - 25)	31 (29 - 32)	25 (23 - 27)

**Notes:**

A combined local bias adjustment factor of 0.77 has been used to bias adjust the 2022 diffusion tube results.

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

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

Distance correction should be considered at any monitoring site where the annual mean concentration is greater than 36 $\mu\text{g}/\text{m}^3$  and the monitoring site is not located at a point of relevant exposure. SW154 required fall-off-with-distance calculation.

**Table C.4 – NO<sub>2</sub> Fall off With Distance Calculations (concentrations presented in  $\mu\text{g}/\text{m}^3$ )**

Site ID	Distance (m): Monitoring Site to Kerb	Distance (m): Receptor to Kerb	Monitored Concentration (Annualised and Bias Adjusted)	Background Concentration	Concentration Predicted at Receptor	Comments
SW154	1.5	10.5	36.5	21.3	30.0	

**QA/QC of Automatic Monitoring**

In 2022 the QA/QC of the automatic data were managed by Air Quality Management, Ricardo Energy & Environment.

The instrumentation was calibrated every two weeks. Live and historic data are available through the Kent Air Website: <https://kentair.org.uk/>

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

Site ID	Site	Pollutant	Instrument	Factor Applied
ZW8	St Paul's Street	PM10	BAM	Correction factor of 0.9662
ZW8	St Paul's Street	PN2.5	BAM	None Required
ZW3	Ospringe	PM10	TEOM	VCM Model
ZW10	Newington	PM10	BAM	Correction factor of 0.9662
ZW10	Newington	PN2.5	BAM	None Required

**Automatic Monitoring Annualisation**

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

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

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

As no automatic NO<sub>2</sub> monitoring locations within Swale Borough Council measured a NO<sub>2</sub> concentration greater than 36 µg m<sup>3</sup> no distance correction during 2022 was required.

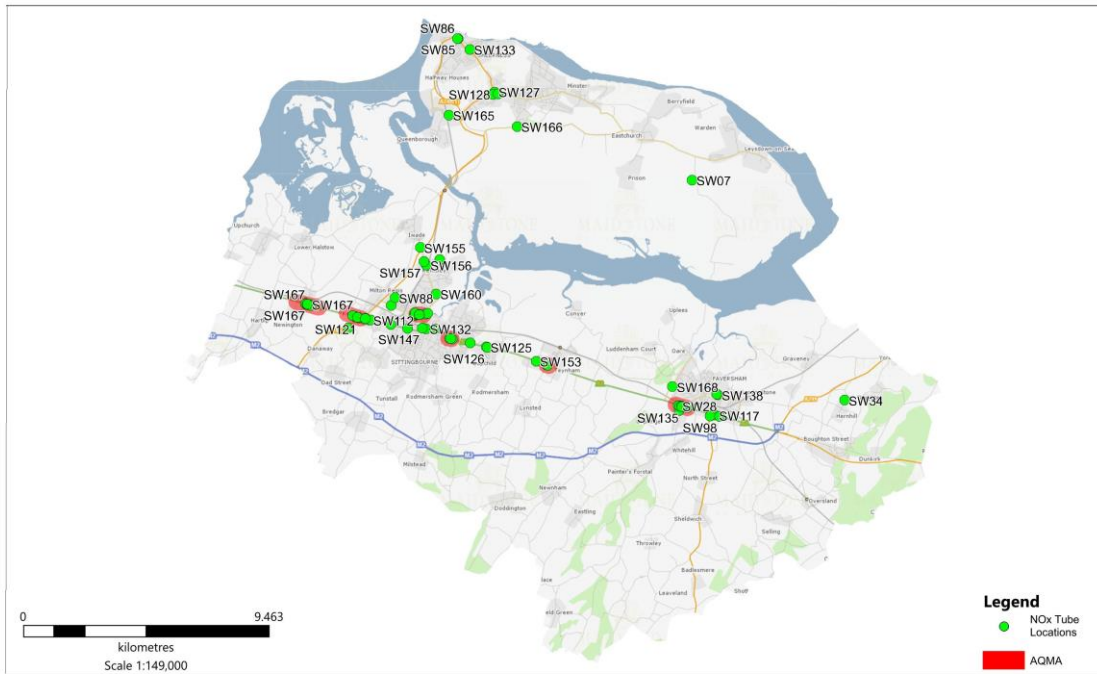
## Appendix D: Map(s) of Monitoring Locations and AQMAs

### Map of Non-Automatic Monitoring Sites and AQMAs



Map 1: NOx Tube Locations 2022

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## Map of Non-Automatic and Automatic Monitoring Sites in Newington AQMA



Map 35a: Newington AQMA 2022

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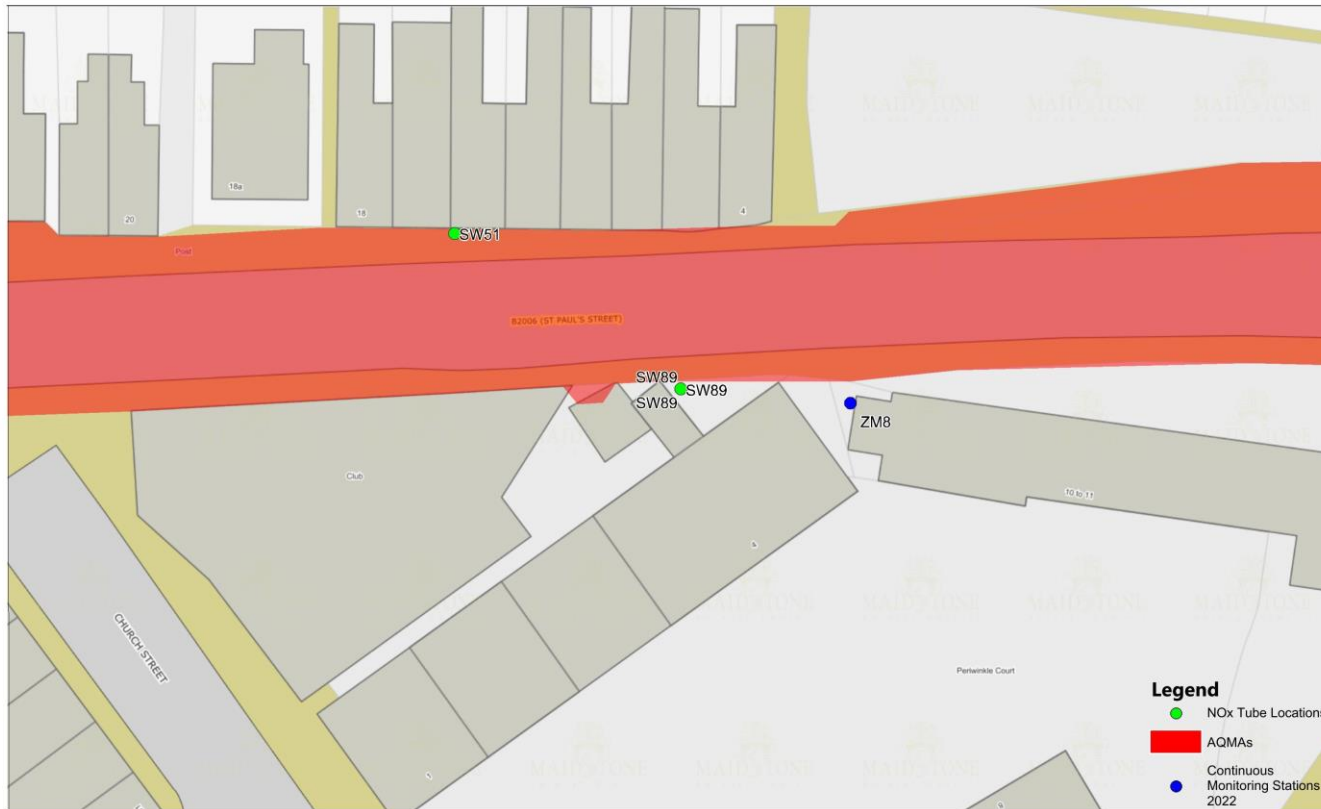


### Map of Non-Automatic and Automatic Monitoring Sites in St Paul's Street AQMA



Map 36a: St Pauls Street AQMA 2022

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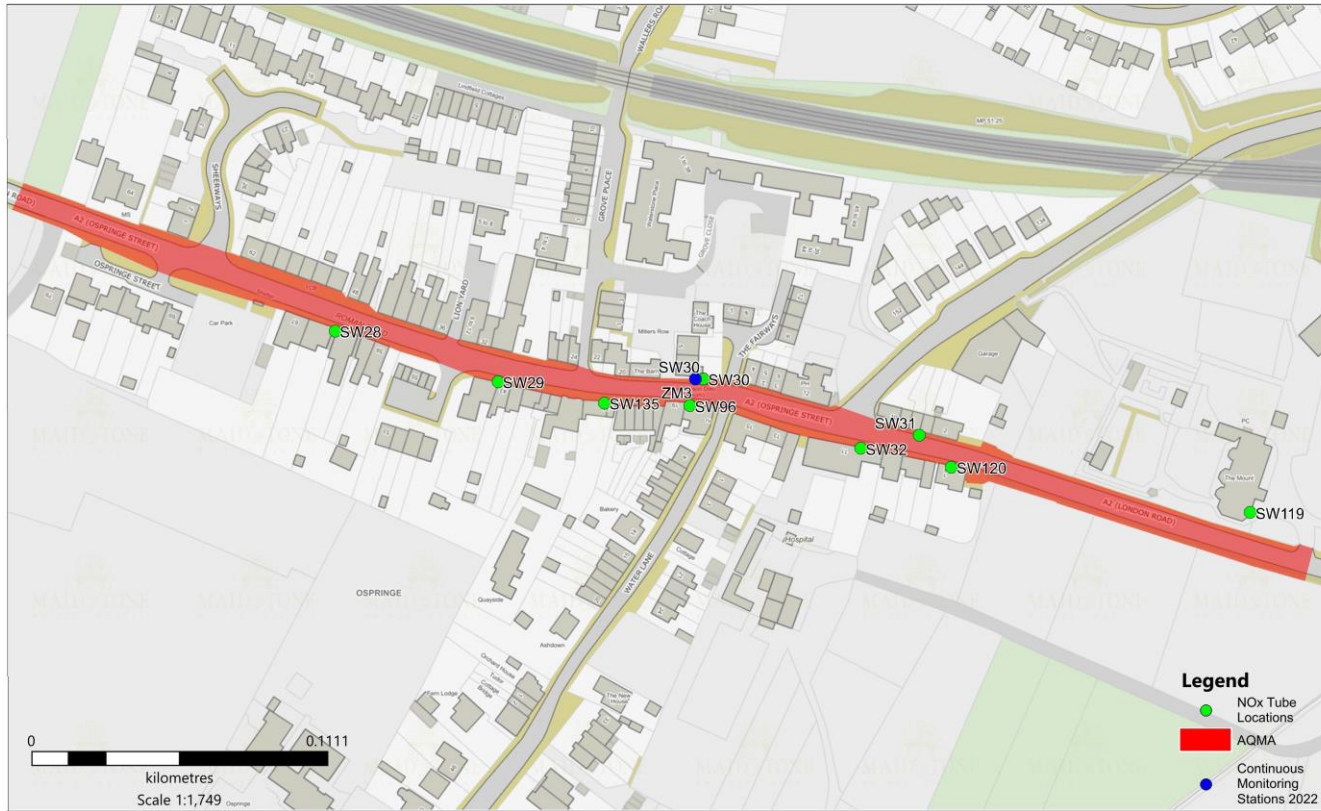


**Map of Non-Automatic and Automatic Monitoring Sites in Ospringe AQMA**



Map 39: Ospringe Street AQMA 2022

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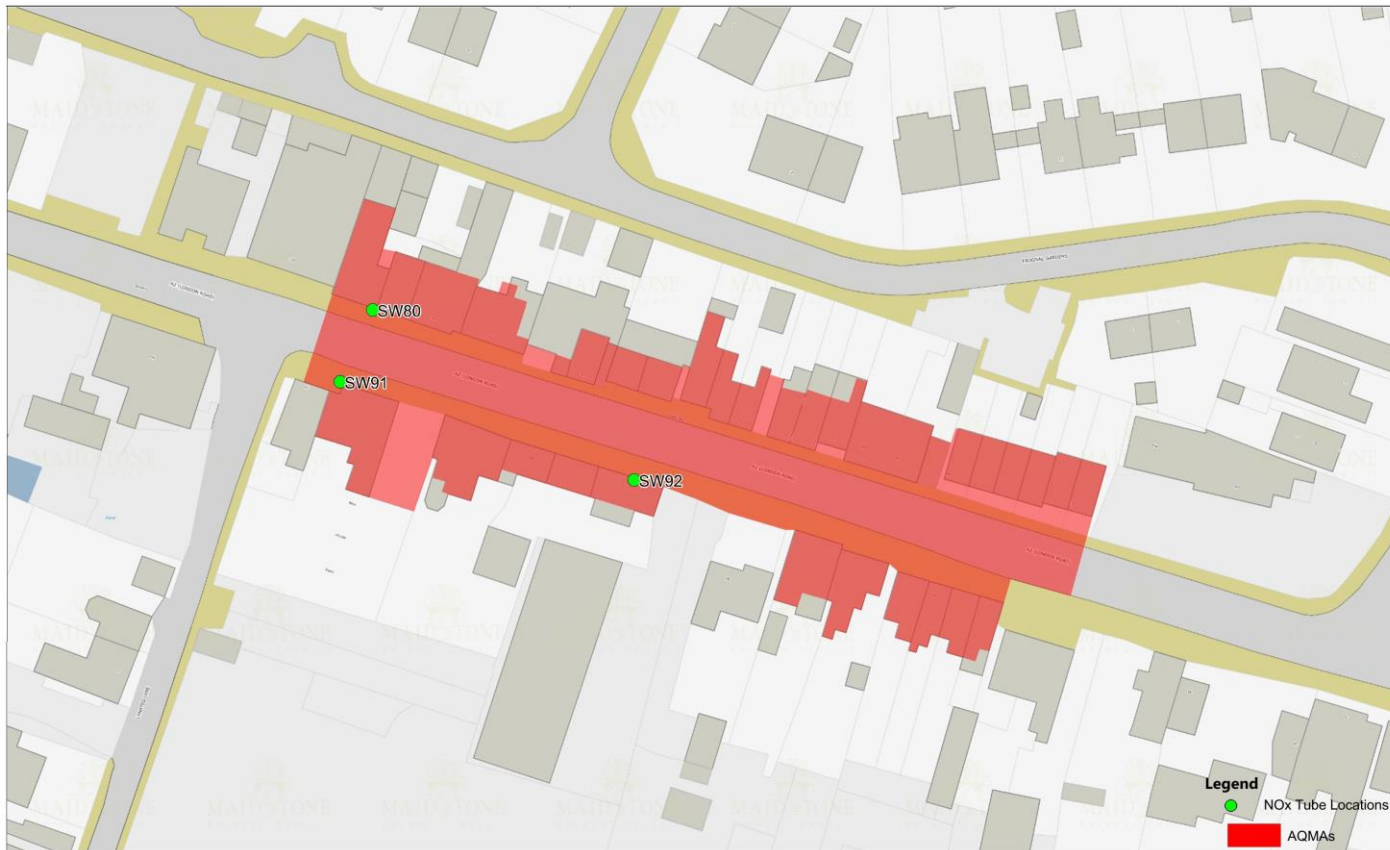


## Map of Non-Automatic Monitoring Sites in Teynham AQMA



Map 38: Teynham AQMA 2022

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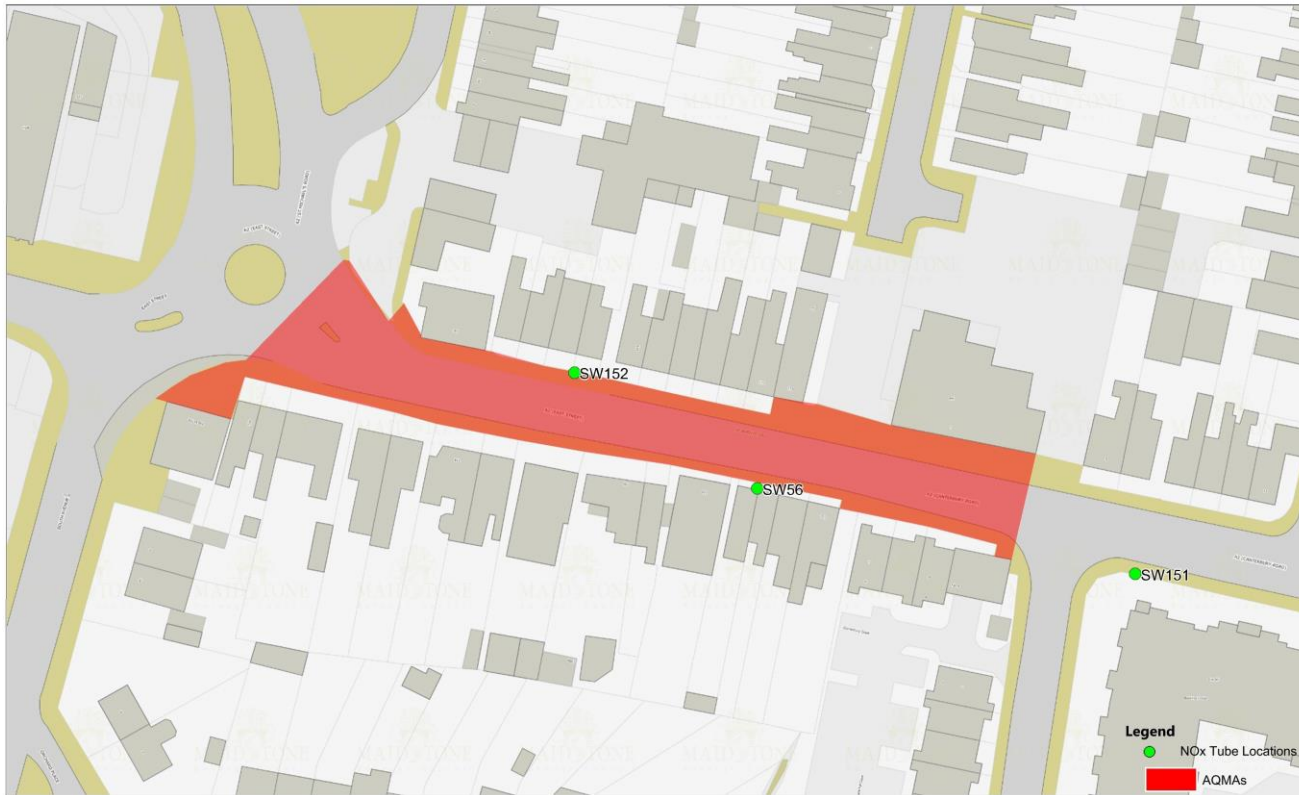


## Map of Non-Automatic Monitoring Sites in East Street AQMA



Map 37: East Street AQMA 2022

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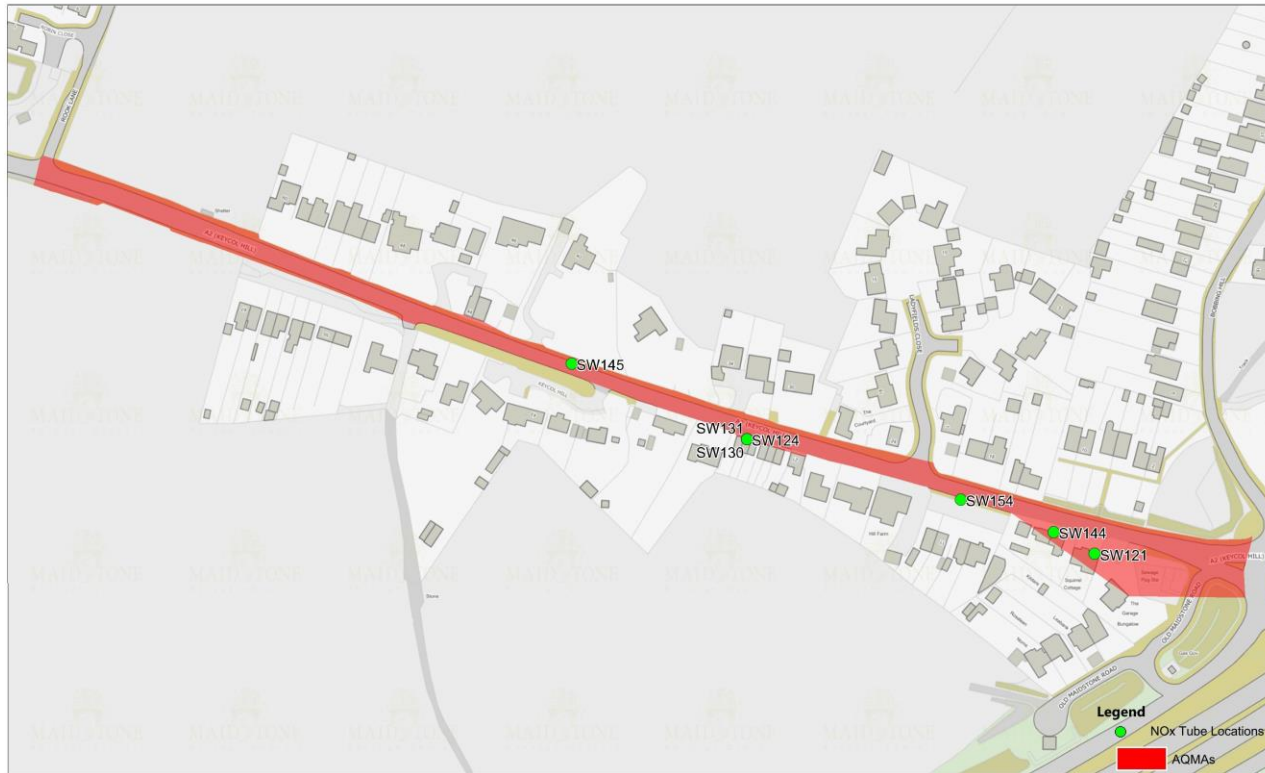


## Map of Non-Automatic Monitoring Sites in Keycol Hill AQMA



Map 40: Keycol Hill AQMA 2022

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

Table E.1 – Air Quality Objectives in England<sup>8</sup>

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

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<sup>8</sup> The units are in microgrammes of pollutant per cubic metre of air (µg/m<sup>3</sup>).

## 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 <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Nitrogen Oxides
PM <sub>10</sub>	Airborne particulate matter with an aerodynamic diameter of 10µm or less
PM <sub>2.5</sub>	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO <sub>2</sub>	Sulphur Dioxide

## References

- Local Air Quality Management Technical Guidance LAQM.TG22. August 2022.  
Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Local Air Quality Management Policy Guidance LAQM.PG22. August 2022.  
Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.