



Swansea Council

Annual Progress Report 2020/2021

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Swansea City and County Council Combined 2020 - 2021 Air Quality Progress Report

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

Date: (April, 2023)

| | |
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| Date | April 2023 |

Executive Summary: Air Quality in Our Area

Air Quality in Swansea

This report contains the latest air quality monitoring results within the City and County of Swansea. The conclusions reached are that the objectives for benzene, lead and sulphur dioxide will be met and that there is no requirement to proceed further with these pollutants.

During 2020 all passive NO₂ monitoring locations except one location recorded a decrease in annual mean concentrations from 2019, with an average decrease of 6.8 µg/m³ across all monitoring sites. This is believed to be due to the impacts of the COVID-19 pandemic in 2020, whereby the Welsh Government enforced lockdowns and advised home working where possible. As such, as traffic levels decreased, NO₂ concentrations have fallen.

During 2019 all passive NO₂ monitoring remained stable from 2018 with an average decrease of 0.4% across all sites monitoring sites.

Swansea Council currently have one declared AQMA (Swansea AQMA 2010). Details of the AQMA can be found on the UKAir website and the Welsh Government Website. The AQMA have been declared due to exceedances of the NO₂ annual mean Air Quality Strategy (AQS) objective. All AQMA boundaries are either close to, or have busy roads within them, recognising the influence vehicle emissions have upon local air quality. To ensure that continual compliance is achieved, the Council do not intend to revoke this AQMA at this moment in time. If concentrations continue to remain stable, then the Council may carry out the revocation process.

No diffusion tube monitoring sites reported an annual mean NO₂ concentration greater than 60 µg/m³, therefore in accordance with LAQM.TG(22), it is not believed that there have been any exceedances of the 1-hour NO₂ AQS objective in these areas. Additionally, the automatic monitoring stations located in Swansea all reported concentrations below the 1-hour NO₂ AQS objective of 200 µg/m³.

All automatic monitoring stations reports PM₁₀ and PM_{2.5} compliance, with both the annual and 24-hour AQS objectives continuing to be maintained.

Ozone is monitored at four sites within Swansea. Compliance with the 8-hour mean UK objective (not set in regulation) has been observed during 2020 and 2019 at all sites.

Actions to Improve Air Quality

Swansea Council takes an active role within the Welsh Air Quality Forum <https://airquality.gov.wales/> and is taking part in collaborative discussions with Swansea University to work together towards carrying out research into areas of 'public health interest' for all parties.

Collaborative works have led to Swansea Council being involved in a research project looking at the digital environment in the City Centre; focusing on the collection of Air Quality, Noise and Parking data.

Local Priorities and Challenges

Swansea Council will continue to undertake monitoring at the fixed locations for pollutants reported upon in this report. The assessment of locations for NO₂ diffusion tube monitoring will continue to be carried out and sites returning low concentrations will be closed down in order to allow new sites to be created to enable Swansea Council to enhance their quantitative data.

Swansea Council is working towards publicly consulting upon their draft action plan in 2020 and facing the challenges of working with all interested parties to implement schemes/works to achieve Welsh Government's aims to maintain compliance and further reduce public health exposure.

How to Get Involved

Swansea Council publishes its real-time monitoring data on their website <http://swansea.airqualitydata.com/> and data can be downloaded from this site; a review of this site is scheduled.

Also, Swansea Council's data can be viewed and downloaded via the Welsh Air Quality Forum website <https://airquality.gov.wales/>

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1 Actions to Improve Air Quality

1.1 Previous Work in Relation to Air Quality

The local authority review and assessment process is multi-staged. This Authority carried out its first stage review in 1999. The conclusion reached was to progress to a second and third stage review for Benzene, Particulate Matter (PM₁₀), Sulphur Dioxide (SO₂) and Nitrogen Dioxide (NO₂).

In between these stages the authority had to deal with and resolve a burning, disused coal spoil tip at the former Brynlliw Colliery site. This absorbed most resources available between 1999 and 2000.

Section 83(1) of the Environment Act 1995 requires the Authority to designate Air Quality Management Areas (AQMAs) in areas where it is likely that the standards for any of the identified pollutants would be exceeded. As a result of the detailed work carried out in the authorities' third stage review and assessment it was found that areas of the Hafod were likely to fail the NO₂ annual mean objective of 40µg/m³ by the compliance date of 31st December 2005.

On the 12th September 2001 the Authority declared The Hafod Air Quality Management Area (NO₂), cited as the City & County of Swansea (Hafod Air Quality Management Area (NO₂)) Order 2001. The Order came into force on the 14th September 2001. Appendix D contains a map indicating the AQMA area.

The Stage 4 review required under Section 84(1) of the Environment Act 1995 confirmed the earlier findings and that the declaration of the Hafod AQMA was justified as several locations were projected to fail the nitrogen dioxide (NO₂) annual mean objective in 2005.

Section 84 of the Environment Act 1995 requires the formulation of a written plan in pursuit of the achievement of air quality standards and objectives within the designated AQMA and has become known as the "Action Plan". The City and County of Swansea have undertaken a considerable amount of feasibility and infrastructure work in formulating its Action Plan taking a few years to produce the completed Action Plan in December 2004.

In 2004, the authority commenced works on the second round of review and assessment. In accordance with the policy and technical guidance documents, the second round of review and assessment was carried out in two stages;

- An Updating and Screening Assessment (USA) - intended to identify aspects that have changed since the first round of review and assessment (from 1999 in Swansea's case) and identify those that require further assessment; namely
- A Detailed Assessment of those pollutants that have been identified as requiring further work and investigation

Swansea Council currently has one active AQAP (The City and County of Swansea (Hafod Air Quality Management Area (NO₂))Order 2001). This is currently outdated and Swansea council are currently in the process of updating the AQAP.

A summary of the reports produced on air quality by Swansea Council to date are accessible on the Swansea government website (<https://swansea.gov.uk/laqmreports?lang=en>), via previous Annual Progress Reports (APRs), which summarise previous year air quality reports.

Annual Progress Report 2018 Summary

The 2018 APR reported no exceedances of the annual mean AQS objective for NO₂. The exceedances at Site 340 was deemed not appropriate for the annual mean exposure and is not in exceedance of the hourly mean objective concentration. Four passive monitoring sites within 10% of the NO₂ AQS objective were located within Swansea AQMA. Swansea Council will closely monitor these locations and the sites will be addressed within the Action Plan.

1.2 Air Quality Management Areas

Air Quality Management Areas (AQMA) are declared when air quality is close to or above an acceptable level of pollution (known as the air quality objective (Please see Appendix A)). After declaring an AQMA the authority must prepare an Air Quality Action Plan (AQAP) within 18 months setting out measures it intends to put in place to improve air quality to at least the air quality objectives, if not even better. AQMA(s) are seen by local authorities as the focal points to channel resources into the most pressing areas of pollution as a priority.

A summary of AQMA declared by Swansea Council can be found in Table 1.1. Further information related to declared or revoked AQMA, including maps of AQMA boundaries are available online on the [UKAir](#) website.

Table 1.1 – Declared Air Quality Management Areas

| AQMA | Relevant Air Quality Objective(s) | Comments on Air Quality Trend | City / Town | Description | Action Plan |
|-------------------|-----------------------------------|---|-------------|--|---|
| Swansea AQMA 2010 | NO ₂ annual mean | The 2020 monitoring results indicates decreases in concentrations at all sites. | Swansea | Elevated annual mean NO ₂ concentrations at residential properties alongside main arterial routes, which located within Hafod, Sketty and Fforestfach area. | https://swansea.gov.uk/media/4052/Air-Quality-Action-Plan/pdf/Air_Quality_Action_Plan.pdf?m=1635522507237 |

AQMA boundary maps within Swansea Council can be viewed at [UKAir AQMA Interactive Map](#) and the [DEFRA LAQM](#) website and are included in Appendix D.

1.3 Implementation of Action Plans

Swansea Council has taken forward a number of measures during 2021 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 1.2. More detail on these measures can be found in the Air Quality Action Plan relating to any designated AQMAs.

Air Quality Action Plans are continuously reviewed and updated whenever deemed necessary, but no less frequently than once every five years. Such updates are completed in close consultation with local communities.

Table 1.2 – Progress on Measures to Improve Air Quality 2020

| No. | Measure | Focus | Lead Authority | Planning Phase | Implementation Phase | Indicator | Target Annual Emission Reduction in the AQMA | Progress to Date | Progress in Last 12 Months | Estimated Completion Date | Comments Relating to Emission Reductions |
|-----|------------------------------------|--|--------------------|----------------|----------------------|-----------|--|--|---|-----------------------------|---|
| 1 | Nowcaster Model | Pollution reduction by prediction and behaviour change | Swansea Council | 2004 | 2017 | - | e.g. 27% Reduction in Road NOx required Neath Road | Model Complete | Due to resource restriction and the pandemic no further works have been able to be carried out | Unknown – funding dependant | Effects of Nowcaster Model to be verified with traffic flow data and NO ₂ Concentrations |
| 3 | Nowcaster Model Output Progression | Pollution reduction by prediction and behaviour change | Swansea Council | 2017 | 2018/19 | - | CHERISH-DE application accepted Awaiting next stage | Pilot study carried out – Data analysis carried out by Swansea University. | Collaborative working with Swansea University Psychology Department to look at behavioural change approach with messages. | March 2020 | - |
| 4 | Collaborative Research Studies | Pollution reduction by prediction and behaviour change | Swansea University | 2018 | - | - | - | Ongoing work stream – has not begun to date as funding applications have been unsuccessful | Application bids for funding with collaborative partners to undertake work looking at behavioural change at congested areas | - | - |
| 5 | Morfa Distributor Road | Infrastructure change | Swansea Council | | August 2017 | - | Road Complete | - | Effects on Traffic Flow to be assessed alongside NO ₂ concentration | 04/08/2017 | Pollutant Concentration reduced and AADT decreased |

| No. | Measure | Focus | Lead Authority | Planning Phase | Implementation Phase | Indicator | Target Annual Emission Reduction in the AQMA | Progress to Date | Progress in Last 12 Months | Estimated Completion Date | Comments Relating to Emission Reductions |
|-----|--|--|--|----------------|----------------------|-----------|--|--|--|---------------------------|--|
| 6 | Green infrastructure | Exposure reduction, enhancing greenery | Swansea Council | - | 2018-20 | - | - | Green Screen installed at the junction of Fabian Way and Port Tennant Road | Installed at the end of March 2020. Real Time data being captured for analysis at a later date | March 2020 | - |
| 7 | UK Prevention Research Partnership Bid | Collaborative Working | School of Management Bay Campus Swansea University Fabian Bay, Swansea | 2017 | 2018 | - | Expression of interest to apply submitted | Unsuccessful | - | - | - |
| 8 | LDP Policy RP | Policy | Swansea Council | - | 2018 | - | Creation of specific Air Pollution Policy within the LDP | Adopted | - | - | - |
| 9 | Highway Infrastructure Works | Infrastructure | Swansea Council | 2018 | - | - | - | Ongoing involvement when schemes required. | - | - | - |
| 10 | Council Vehicle Fleet | Reduced Emission | Swansea Council | - | - | - | - | Ongoing | Increase in electric vehicles and newer diesel vehicles within the council fleet | - | - |

| No. | Measure | Focus | Lead Authority | Planning Phase | Implementation Phase | Indicator | Target Annual Emission Reduction in the AQMA | Progress to Date | Progress in Last 12 Months | Estimated Completion Date | Comments Relating to Emission Reductions |
|-----|------------------------------------|--|--------------------|----------------|----------------------|-----------|--|--|---|-----------------------------|---|
| 1 | Nowcaster Model | Pollution reduction by prediction and behaviour change | Swansea Council | 2004 | 2017 | - | e.g. 27% Reduction in Road NOx required Neath Road | Model Complete | Due to resource restriction no further works have been able to be carried out | Unknown – funding dependant | Effects of Nowcaster Model to be verified with traffic flow data and NO ₂ Concentrations |
| 3 | Nowcaster Model Output Progression | Pollution reduction by prediction and behaviour change | Swansea Council | 2017 | 2018/19 | - | CHERISH-DE application accepted Awaiting next stage | Pilot study carried out – Data analysis carried out by Swansea University. | Collaborative working with Swansea University Psychology Department to look at behavioural change approach with messages. | March 2020 | - |
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| 5 | Morfa Distributor Road | Infrastructure change | Swansea Council | - | August 2017 | - | Road Complete | - | Effects on Traffic Flow to be assessed alongside NO ₂ concentration | 04/08/2017 | Pollutant Concentration reduced and AADT decreased |

| No. | Measure | Focus | Lead Authority | Planning Phase | Implementation Phase | Indicator | Target Annual Emission Reduction in the AQMA | Progress to Date | Progress in Last 12 Months | Estimated Completion Date | Comments Relating to Emission Reductions |
|-----|--|--|--|----------------|----------------------|-----------|--|---|--|---------------------------|--|
| 6 | Green infrastructure | Exposure reduction, enhancing greenery | Swansea Council | - | 2018-20 | | - | Green Screen installed at the junction of Fabian Way and Port Tennat Road | Installed at the end of March 2020. Real Time data being captured for analysis at a later date | March 2020 | - |
| 7 | UK Prevention Research Partnership Bid | Collaborative Working | School of Management Bay Campus Swansea University Fabian Bay, Swansea | 2017 | 2018 | - | Expression of interest to apply submitted | Unsuccessful | - | - | - |
| 8 | LDP Policy RP | Policy | Swansea Council | - | 2018 | - | Creation of specific Air Pollution Policy within the LDP | Adopted | - | - | - |
| 9 | Highway Infrastructure Works | Infrastructure | Swansea Council | 2018 | - | - | - | Ongoing involvement when schemes required. | - | - | - |
| 10 | Council Vehicle Fleet | Reduced Emission | Swansea Council | - | - | - | - | Ongoing | Increase in electric vehicles and newer diesel vehicles within the council fleet | - | - |

2 Air Quality Monitoring Data and Comparison with Air Quality Objectives

2.1 Summary of Monitoring Undertaken in 2020 and 2019

2.1.1 Automatic Monitoring Sites

This section sets out what monitoring has taken place and how results compare with the objectives.

Swansea Council undertook automatic (continuous) monitoring at 12 sites during 2020 and 2019. Table 2.1 presents the details of the sites. National monitoring results are available on the [UKAir](#) website.

Maps showing the location of the monitoring sites are provided in Figure 2.1. Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C.

2.1.2 Non-Automating Monitoring Sites

Swansea Council undertook non-automatic (passive) monitoring of NO₂ at 214 sites during 2020 and 219 sites during 2019. In 2019, nineteen new sites were deployed across the Swansea jurisdiction, with seven sites decommissioned in 2020 and two in 2019. Table 2.2 presents the details of the sites.

Maps showing the location of the monitoring sites are provided in Figure 2.2 - Figure 2.11. Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in Appendix C.

Table 2.1 – Details of Automatic Monitoring Sites

| Site ID | Site Name | Site Type | Associated with (Named) AQMA? | X OS Grid Reference | Y OS Grid Reference | Pollutants Monitored | Monitoring Technique | Inlet Height (m) | Distance from monitor to nearest relevant exposure (m) ⁽¹⁾ | Distance from Kerb to Nearest Relevant Exposure (m) | Distance from Kerb to Monitor (m) |
|---------|-----------------------------------|------------------|-------------------------------|------------------------------------|------------------------------------|--|--|------------------|---|---|-----------------------------------|
| CM1 | Swansea Roadside AURN | Roadside | Swansea AQMA 2010 | 265299 | 194470 | NO ₂ , PM ₁₀ , PM _{2.5} | Chemiluminescence and BAM1020 | 2.0 | 16.5 | 22 | 4.5 |
| CM2 | Morrison Groundhog | Roadside | Swansea AQMA 2010 | 267210 | 197674 | NO ₂ , PM ₁₀ and Ozone | Chemiluminescence, UV Absorption and BAM1020 | 2.0 | 22 | 27 | 5.0 |
| CM3 | Swansea Cwm Level Park | Urban Background | Swansea AQMA 2010 | 265912 | 195890 | NO ₂ and Ozone | Chemiluminescence, UV Absorption | 1.5 | - | - | 78 |
| CM4 | Swansea Hafod DOAS | Roadside | Swansea AQMA 2010 | Transmitter 265927 Receiver 265991 | Transmitter 194453 Receiver 194706 | NO ₂ , Ozone and Benzene | Differential Optical Absorption Spectrometry | 4.0 | 0 | 1.5 | 1.5 |
| CM5 | Swansea St Thomas DOAS | Roadside | - | 266199 | 193657 | NO ₂ , SO ₂ , Ozone and Benzene | Differential Optical Absorption Spectrometry | 4.0 | 7.5 | 0.2 | 7.3 |
| CM6 | Fforestfach Cross | Roadside | Swansea AQMA 2010 | 263236 | 195489 | PM ₁₀ | EBam | 3.0 | 22 | 25 | 3 |
| CM7 | Uplands Crescent | Roadside | - | 264078 | 192888 | PM ₁₀ | EBam | 3.0 | 13 | 14 | 1 |
| CM8 | Sketty Cross | Roadside | Swansea AQMA 2010 | 262681 | 192871 | PM ₁₀ | EBam | 3.0 | 15 | 16 | 1 |
| CM9 | Westway Quadrant Bus Station | Roadside | - | 265256 | 192731 | PM ₁₀ | EBam | 3.0 | 13 | 15 | 2 |
| CM11 | Swansea Station Court High Street | Roadside | Swansea AQMA 2010 | 265705 | 193686 | NO ₂ | Chemiluminescence | 1.5 | 3 | 5 | 2 |
| CM12 | Morfa Road | Roadside | Swansea AQMA 2010 | 265905 | 193733 | NO ₂ | Chemiluminescence | 1.5 | 0 | 6 | 6 |
| CM13 | Junction Port Tennant | Roadside | - | 266670 | 193179 | PM _{2.5} and NO ₂ | Chemiluminescence and BAM1020 | 1.5 | 9 | 12 | 3 |

Notes:

(1) 0m indicates that the sited monitor represents exposure and as such no distance calculation is required.

Figure 2.1 – Map(s) of Automatic Monitoring Sites

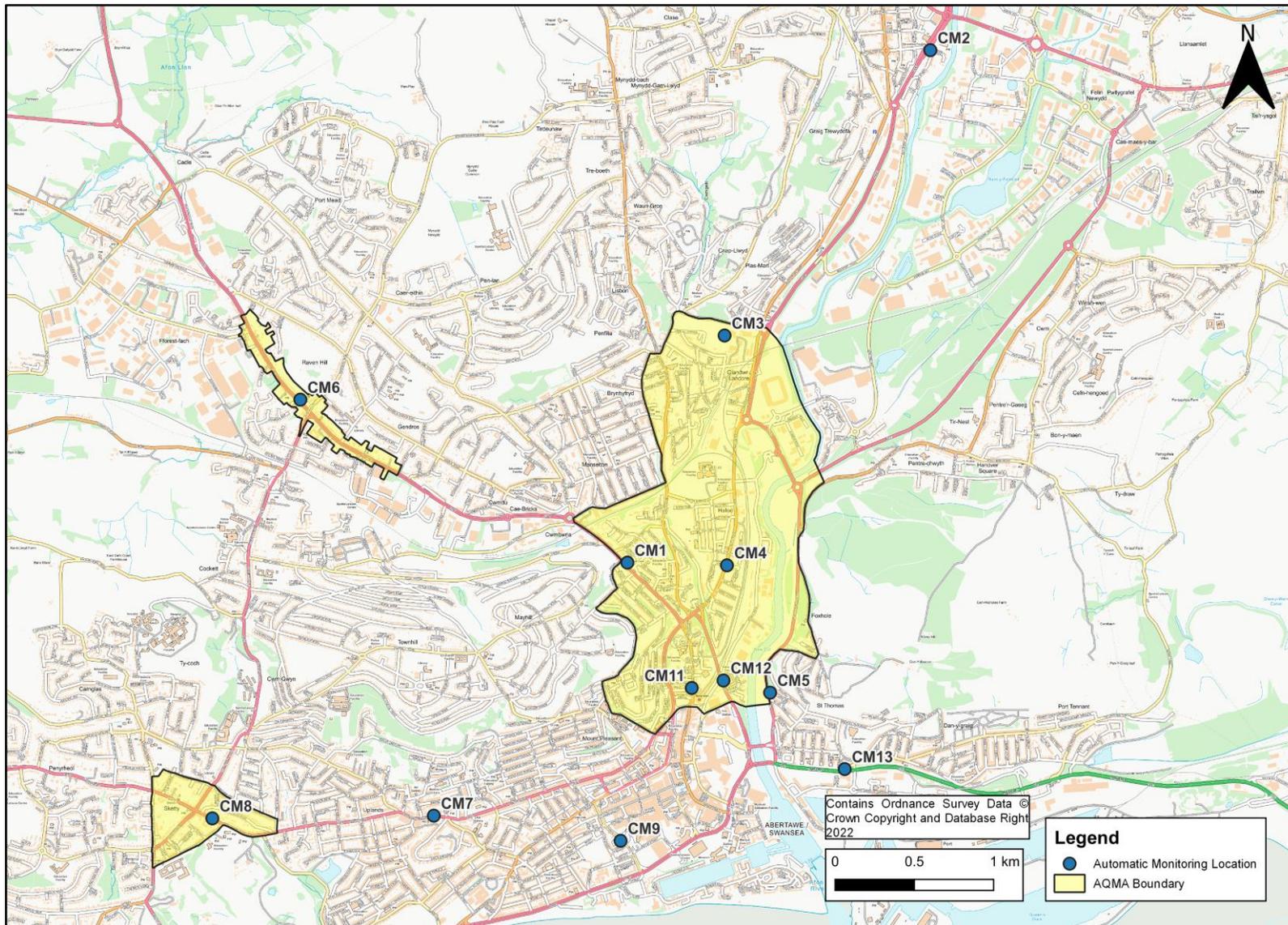


Table 2.2 – Details of Non-Automatic Monitoring Sites

| Site ID | Site Name | Site Type | Associated with Named AQMA? | X OS Grid Reference | Y OS Grid Reference | Site Height (m) | Collocated with a Continuous Analyser? | Distance from monitor to nearest relevant exposure (m) ⁽¹⁾ | Distance from Kerb to Nearest Relevant Exposure (m) | Distance from Kerb to Monitor (m) |
|---------|------------------------------|-----------|-----------------------------|---------------------|---------------------|-----------------|--|---|---|-----------------------------------|
| 5 | Gower Road, Sketty | Roadside | Swansea AQMA 2010 | 262548 | 192943 | 3.0 | No | - | - | N/A |
| 6 | Vivian road, Sketty | Roadside | Swansea AQMA 2010 | 262612 | 192995 | 3.0 | No | - | - | N/A |
| 7 | Gower Road, Sketty | Roadside | Swansea AQMA 2010 | 262691 | 192852 | 3.0 | No | - | - | N/A |
| 8 | Carmarthen Road, Fforestfach | Roadside | Swansea AQMA 2010 | 262990 | 195820 | 3.0 | No | 4.5 | - | 2.5 |
| 10 | Carmarthen Road, Fforestfach | Roadside | Swansea AQMA 2010 | 263219 | 195513 | 3.0 | No | - | - | N/A |
| 11 | Ravenhill Road, Fforestfach | Roadside | Swansea AQMA 2010 | 263344 | 195474 | 3.0 | No | - | - | N/A |
| 12 | Carmarthen Road, Gendros | Roadside | Swansea AQMA 2010 | 263680 | 195103 | 3.0 | No | - | - | N/A |
| 14 | Clarence Street | Roadside | N | 265285 | 192696 | 2.0 | No | - | - | N/A |
| 15 | Westway | Roadside | N | 265334 | 192608 | 2.0 | No | - | - | N/A |
| 16 | Osytersmouth Road | Roadside | N | 265339 | 192534 | 3.0 | No | - | - | N/A |
| 18 | Cwm Level Road, Landore | Roadside | Swansea AQMA 2010 | 265526 | 195807 | 3.0 | No | 1.0 | - | N/A |
| 19 | Dyfatty Street, Dyfatty | Roadside | Swansea AQMA 2010 | 265597 | 194061 | 3.0 | No | - | - | N/A |
| 20 | Carmarthen Road, Dyfatty | Roadside | Swansea AQMA 2010 | 265594 | 194175 | 3.0 | No | - | - | N/A |
| 22 | Pentreharne Road | Roadside | Swansea AQMA 2010 | 265682 | 195374 | 3.0 | No | - | - | N/A |
| 26 | Neath Road, Landore | Roadside | Swansea AQMA 2010 | 265876 | 194318 | 3.0 | No | - | - | N/A |
| 27 | Neath Road, Landore | Roadside | Swansea AQMA 2010 | 265922 | 194428 | 3.0 | No | - | - | N/A |
| 29 | Neath Road, Landore | Roadside | Swansea AQMA 2010 | 265973 | 195222 | 3.0 | No | - | - | N/A |
| 32 | Pentreguinea Road, St.Thomas | Roadside | N | 266209 | 193867 | 3.0 | No | - | - | N/A |
| 33 | Pentreguinea Road, St.Thomas | Roadside | N | 266236 | 193488 | 3.0 | No | - | - | N/A |
| 35 | Delhi Street, St.Thomas | Roadside | N | 266314 | 193298 | 3.0 | No | - | - | N/A |

| Site ID | Site Name | Site Type | Associated with Named AQMA? | X OS Grid Reference | Y OS Grid Reference | Site Height (m) | Collocated with a Continuous Analyser? | Distance from monitor to nearest relevant exposure (m) ⁽¹⁾ | Distance from Kerb to Nearest Relevant Exposure (m) | Distance from Kerb to Monitor (m) |
|---------|-------------------------------|-----------|-----------------------------|---------------------|---------------------|-----------------|--|---|---|-----------------------------------|
| 36 | Delhi Street, St.Thomas | Roadside | N | 266455 | 193300 | 3.0 | No | - | - | N/A |
| 40 | Pentrepoeth Road, Morriston | Roadside | N | 266951 | 198278 | 3.0 | No | - | - | N/A |
| 41 | Woodfield Road | Roadside | N | 266953 | 198085 | 3.0 | No | - | - | N/A |
| 43 | Clase Road, Morriston | Roadside | N | 267093 | 198063 | 3.0 | No | - | - | N/A |
| 44 | Ian's Walk, Ynysforgan | Roadside | N | 267639 | 199543 | 3.0 | No | - | - | N/A |
| 45 | Glyncollen Drive, Ynysforgan | Roadside | N | 267661 | 199451 | 3.0 | No | - | - | N/A |
| 48 | Bevans Row, Port Tennant | Roadside | N | 268011 | 193101 | 3.0 | No | - | - | N/A |
| 50 | Nantylffin Road, Llansamlet | Roadside | N | 268530 | 197419 | 3.0 | No | - | - | N/A |
| 54 | Peniel Green Road, Llansamlet | Roadside | N | 268693 | 197416 | 3.0 | No | - | - | N/A |
| 55 | Peniel Green Road, Llansamlet | Roadside | N | 268789 | 197420 | 3.0 | No | - | - | N/A |
| 56 | Ynysallan Road | Roadside | N | 269306 | 198661 | 3.0 | No | 166.0 | - | 2.0 |
| 58 | Uplands Crescent, Uplands | Roadside | N | 264000 | 192800 | 3.0 | No | 8.0 | - | 4.0 |
| 59 | Hafod Post Office, Neath Road | Roadside | Swansea AQMA 2010 | 265918 | 194463 | 3.0 | No | 3.0 | - | N/A |
| 60 | St.Helens Road | Roadside | N | 265036 | 192931 | 2.0 | No | - | - | N/A |
| 61 | St.Helens Road | Roadside | N | 264959 | 192878 | 3.0 | No | - | - | N/A |
| 63 | De La Beche Road | Roadside | Swansea AQMA 2010 | 262675 | 192775 | 3.0 | No | 6.0 | - | 2.0 |
| 64 | Gower Road | Roadside | Swansea AQMA 2010 | 262719 | 192840 | 3.0 | No | 1.0 | - | 5.5 |
| 65 | Stewart Hall, Gower Road | Roadside | Swansea AQMA 2010 | 262735 | 192855 | 3.0 | No | - | - | N/A |
| 66 | Sketty Road | Roadside | Swansea AQMA 2010 | 262802 | 192829 | 3.0 | No | - | - | N/A |
| 67 | Newcut Road | Roadside | Swansea AQMA 2010 | 265901 | 193677 | 3.0 | No | 5.0 | - | 2.0 |
| 68 | Orchard Street | Roadside | N | 265573 | 193432 | 3.0 | No | - | - | N/A |
| 70 | Copper Quarter | Roadside | N | 266649 | 195435 | 3.0 | No | 7.0 | - | 2.0 |
| 71 | Copper quarter | Roadside | N | 266514 | 195485 | 2.0 | No | 10.0 | - | N/A |
| 75 | Uplands Crescent | Roadside | N | 264072 | 192869 | 2.0 | No | - | - | N/A |

| Site ID | Site Name | Site Type | Associated with Named AQMA? | X OS Grid Reference | Y OS Grid Reference | Site Height (m) | Collocated with a Continuous Analyser? | Distance from monitor to nearest relevant exposure (m) ⁽¹⁾ | Distance from Kerb to Nearest Relevant Exposure (m) | Distance from Kerb to Monitor (m) |
|---------|----------------------------|-----------|-----------------------------|---------------------|---------------------|-----------------|--|---|---|-----------------------------------|
| 83 | Gower Road | Roadside | Swansea AQMA 2010 | 262785 | 192838 | 2.0 | No | - | - | N/A |
| 84 | Gower Road | Roadside | Swansea AQMA 2010 | 262714 | 192839 | 2.0 | No | - | - | N/A |
| 85 | Gower Road | Roadside | Swansea AQMA 2010 | 262702 | 192847 | 2.0 | No | - | - | N/A |
| 86 | Gower Road | Roadside | Swansea AQMA 2010 | 262704 | 192865 | 2.0 | No | - | - | N/A |
| 87 | De La Beche Road | Roadside | Swansea AQMA 2010 | 262697 | 192798 | 2.0 | No | - | - | N/A |
| 88 | Gower Road | Roadside | Swansea AQMA 2010 | 262605 | 192916 | 2.0 | No | - | - | N/A |
| 89 | Vivian Road | Roadside | Swansea AQMA 2010 | 262587 | 192956 | 2.0 | No | - | - | N/A |
| 90 | Vivian Road | Roadside | Swansea AQMA 2010 | 262631 | 192996 | 2.0 | No | - | - | N/A |
| 91 | Gower Road | Roadside | Swansea AQMA 2010 | 262534 | 192950 | 2.0 | No | - | - | N/A |
| 94 | Ravenhill Road | Roadside | N | 263444 | 195572 | 2.0 | No | - | - | N/A |
| 95 | Carmarthen Road | Roadside | N | 262815 | 196090 | 2.0 | No | - | - | N/A |
| 96 | Carmarthen Road | Roadside | N | 262922 | 195590 | 2.0 | No | - | - | N/A |
| 97 | Carmarthen Road | Roadside | Swansea AQMA 2010 | 262946 | 195902 | 2.0 | No | - | - | N/A |
| 98 | Carmarthen Road | Roadside | Swansea AQMA 2010 | 263142 | 195548 | 2.0 | No | - | - | N/A |
| 99 | Carmarthen Road | Roadside | Swansea AQMA 2010 | 263387 | 195332 | 2.0 | No | - | - | N/A |
| 102 | Delhi Street | Roadside | N | 266379 | 193307 | 2.0 | No | - | - | N/A |
| 104 | Nantylfin Road | Roadside | N | 268538 | 197389 | 2.0 | No | - | - | N/A |
| 107 | Peniel Green Road | Roadside | N | 268765 | 197420 | 2.0 | No | - | - | N/A |
| 110 | Cefn Glas | Roadside | N | 267369 | 199521 | 2.0 | No | - | - | N/A |
| 115 | Mansel Street | Roadside | N | 265031 | 193097 | 2.0 | No | - | - | N/A |
| 116 | 16 Mansel Street | Roadside | N | 265192 | 193138 | 2.0 | No | - | - | N/A |
| 117 | De La Beche Street | Roadside | N | 265288 | 193211 | 2.0 | No | - | - | N/A |
| 118 | Alexandra Road | Roadside | N | 265483 | 193385 | 2.0 | No | - | - | N/A |
| 119 | Pleasant Street | Roadside | N | 265522 | 193390 | 2.0 | No | - | - | N/A |
| 121 | Station Court, High Street | Roadside | Swansea AQMA 2010 | 265697 | 193679 | 3.0 | No | ■ | - | N/A |
| 122 | 206 High Street | Roadside | N | 265694 | 193505 | 2.0 | No | - | - | N/A |

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|---------|-------------------------------|-----------|-----------------------------|---------------------|---------------------|-----------------|--|---|---|-----------------------------------|
| 123 | Mackworth Court, High Street, | Roadside | N | 265655 | 193423 | 2.0 | No | - | - | N/A |
| 124 | High Street | Roadside | N | 265651 | 193253 | 3.0 | No | - | - | N/A |
| 125 | High Street | Roadside | N | 265642 | 193148 | 2.5 | No | 3.0 | - | 1.0 |
| 126 | The Kingsway | Roadside | N | 265475 | 193144 | 2.0 | No | - | - | N/A |
| 127 | The Kingsway | Roadside | N | 265348 | 193110 | 2.0 | No | 4.0 | - | 0.5 |
| 128 | The Kingsway | Roadside | N | 265297 | 193085 | 2.0 | No | - | - | N/A |
| 129 | Christina Street | Roadside | N | 265153 | 193098 | 2.0 | No | - | - | N/A |
| 131 | Dillwyn Street | Roadside | N | 265137 | 192846 | 3.0 | No | - | - | N/A |
| 132 | Westway | Roadside | N | 265229 | 192753 | 2.0 | No | - | - | N/A |
| 134 | Dillwyn Street | Roadside | N | 265113 | 192903 | 3.0 | No | - | - | N/A |
| 180 | Loughor Road, Gorseinon | Roadside | N | 259064 | 197781 | 3.0 | No | - | - | N/A |
| 182 | Loughor Road, Gorseinon | Roadside | N | 259050 | 197790 | 3.0 | No | - | - | N/A |
| 197 | Alexandra Road, Gorseinon | Roadside | N | 258797 | 198701 | 3.0 | No | - | - | N/A |
| 198 | Alexandra Road, Gorseinon | Roadside | N | 258811 | 198701 | 3.0 | No | - | - | N/A |
| 206 | Newton Road, Mumbles | Roadside | N | 261565 | 188211 | 3.0 | No | - | - | N/A |
| 207 | Newton Road, Mumbles | Roadside | N | 261561 | 188222 | 3.0 | No | - | - | N/A |
| 208 | Newton Road, Mumbles | Roadside | N | 261541 | 188215 | 3.0 | No | - | - | N/A |
| 209 | Newton Road, Mumbles | Roadside | N | 261534 | 188198 | 3.0 | No | - | - | N/A |
| 210 | Newton Road, Mumbles | Roadside | N | 261516 | 188207 | 3.0 | No | - | - | N/A |
| 211 | Newton Road, Mumbles | Roadside | N | 261501 | 188188 | 3.0 | No | - | - | N/A |
| 212 | Newton Road, Mumbles | Roadside | N | 261486 | 188200 | 3.0 | No | - | - | N/A |
| 213 | Newton Road, Mumbles | Roadside | N | 261490 | 188186 | 3.0 | No | - | - | N/A |
| 240 | Neath Road, Plasmarl | Roadside | N | 266169 | 195995 | 3.0 | No | - | - | N/A |
| 241 | Neath Road, Plasmarl | Roadside | N | 266159 | 196013 | 2.0 | No | - | - | N/A |

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|---------|------------------------------|-----------|-----------------------------|---------------------|---------------------|-----------------|--|---|---|-----------------------------------|
| 242 | Mackworth Court, High Street | Roadside | N | 265655 | 193423 | 3.0 | No | - | - | N/A |
| 243 | Courtney Street, Manselton | Roadside | N | 265474 | 194949 | 3.0 | No | - | - | N/A |
| 244 | Courtney Street, Manselton | Roadside | Swansea AQMA 2010 | 265466 | 194930 | 3.0 | No | - | - | N/A |
| 245 | Courtney Street, Manselton | Roadside | Swansea AQMA 2010 | 265448 | 194922 | 2.0 | No | - | - | N/A |
| 247 | Courtney Street, Manselton | Roadside | Swansea AQMA 2010 | 265394 | 194899 | 3.0 | No | - | - | N/A |
| 249 | Courtney Street, Manselton | Roadside | Swansea AQMA 2010 | 265326 | 194871 | 3.0 | No | - | - | N/A |
| 251 | Courtney Street, Manselton | Roadside | Swansea AQMA 2010 | 265263 | 194845 | 2.0 | No | - | - | N/A |
| 256 | Mansel Terrace, Manselton | Roadside | N | 264995 | 194777 | 3.0 | No | - | - | N/A |
| 275 | Pentremawr Road, Hafod | Roadside | Swansea AQMA 2010 | 265658 | 194856 | 2.0 | No | 3.0 | - | 1.0 |
| 276 | Pentremawr Road, Hafod | Roadside | Swansea AQMA 2010 | 265610 | 194871 | 2.0 | No | - | - | N/A |
| 277 | Pentremawr Road, Hafod | Roadside | Swansea AQMA 2010 | 265596 | 194875 | 2.0 | No | - | - | N/A |
| 278 | Pentremawr Road, Hafod | Roadside | Swansea AQMA 2010 | 265573 | 194882 | 2.0 | No | - | - | N/A |
| 279 | Llangyfelach Road, Hafod | Roadside | Swansea AQMA 2010 | 265555 | 194926 | 2.0 | No | - | - | N/A |
| 280 | Llangyfelach Road, Hafod | Roadside | Swansea AQMA 2010 | 265537 | 194980 | 2.5 | No | 2.0 | - | 1.0 |
| 281 | Llangyfelach Road | Roadside | Swansea AQMA 2010 | 265542 | 194872 | 2.5 | No | 3.0 | - | 1.0 |
| 282 | Llangyfelach Road | Roadside | Swansea AQMA 2010 | 265540 | 194840 | 2.0 | No | 3.0 | - | 1.0 |
| 284 | Llangyfelach Road | Roadside | N | 265452 | 195899 | 2.0 | No | - | - | N/A |
| 285 | Martin Street, Morriston | Roadside | N | 266955 | 197415 | 2.0 | No | - | - | N/A |
| 286 | Martin Street, Morriston | Roadside | N | 266938 | 197377 | 2.0 | No | - | - | N/A |
| 287 | Ty Gwenllian, High Street | Roadside | Swansea AQMA 2010 | 265715 | 193902 | 2.0 | No | - | - | N/A |

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|---------|-----------------------------------|-----------|-----------------------------|---------------------|---------------------|-----------------|--|---|---|-----------------------------------|
| 288 | Thomas William Court, High Street | Roadside | Swansea AQMA 2010 | 265698 | 193878 | 2.0 | No | - | - | N/A |
| 289 | Thomas William Court, High Street | Roadside | Swansea AQMA 2010 | 265702 | 193842 | 2.0 | No | - | - | N/A |
| 291 | 98 Vale of Neath Terrace | Roadside | N | 267952 | 193121 | 3.0 | No | - | - | N/A |
| 295 | High Street Gorseinon | Roadside | N | 258998 | 198698 | 2.0 | No | 1.5 | - | 1.0 |
| 296 | High Street, Gorseinon | Roadside | N | 259054 | 198679 | 2.0 | No | - | - | N/A |
| 323 | Port Tennant Road, Port Tennant | Roadside | N | 266765 | 193224 | 2.0 | No | - | - | N/A |
| 331 | High Street, Swansea | Roadside | N | 265741 | 193545 | 2.0 | No | - | - | N/A |
| 334 | High Street, Swansea | Roadside | N | 265688 | 193483 | 2.0 | No | - | - | N/A |
| 335 | High Street, Swansea | Roadside | N | 265682 | 193461 | 2.0 | No | - | - | N/A |
| 336 | High Street, Swansea | Roadside | N | 265664 | 193395 | 2.0 | No | - | - | N/A |
| 337 | High Street, Swansea | Roadside | N | 265637 | 193335 | 2.0 | No | 3.5 | - | 1.0 |
| 338 | High Street, Swansea | Roadside | N | 265651 | 193331 | 2.0 | No | - | - | N/A |
| 339 | High Street, Swansea | Roadside | N | 265652 | 193313 | 2.0 | No | - | - | N/A |
| 340 | High Street, Swansea | Roadside | N | 265632 | 193292 | 2.0 | No | 5.0 | - | 3.0 |
| 341 | High Street, Swansea | Roadside | N | 265635 | 193224 | 2.0 | No | 3.0 | - | 1.5 |
| 342 | Castle Street, Swansea | Roadside | N | 265655 | 193197 | 2.0 | No | 3.5 | - | 1.0 |
| 343 | Castle Street, Swansea | Roadside | N | 265640 | 193173 | 2.0 | No | - | - | N/A |
| 344 | Castle Street, Swansea | Roadside | N | 265658 | 193169 | 2.0 | No | 3.0 | - | 0.5 |
| 345 | Castle Street, Swansea | Roadside | N | 265661 | 193140 | 2.0 | No | 3.0 | - | 0.5 |
| 346 | Castle Street, Swansea | Roadside | N | 265681 | 193096 | 2.0 | No | - | - | N/A |

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|---------|--|-----------|-----------------------------|---------------------|---------------------|-----------------|--|---|---|-----------------------------------|
| 347 | Orchard Street, Swansea | Roadside | Swansea AQMA 2010 | 265562 | 193518 | 2.0 | No | - | - | N/A |
| 348 | Orchard Street, Swansea | Roadside | Swansea AQMA 2010 | 265572 | 193549 | 2.0 | No | - | - | N/A |
| 349 | Orchard Street, Swansea | Roadside | Swansea AQMA 2010 | 265578 | 193576 | 2.0 | No | - | - | N/A |
| 350 | Orchard Street, Swansea | Roadside | Swansea AQMA 2010 | 265577 | 193606 | 2.0 | No | - | - | N/A |
| 351 | Mackworth Court, Orchard Street, Swansea | Roadside | N | 265606 | 193466 | 2.0 | No | - | - | N/A |
| 352 | Mackworth Court, Orchard Street, Swansea | Roadside | N | 265602 | 193429 | 2.0 | No | - | - | N/A |
| 356 | Trinity Court, Grove Place, Swansea | Roadside | N | 265471 | 193359 | 2.0 | No | - | - | N/A |
| 358 | The Kingsway | Roadside | N | 265414 | 193141 | 2.0 | No | 6.5 | - | 1.0 |
| 362 | Bus Station | Roadside | N | 265271 | 192774 | 2.0 | No | - | - | N/A |
| 363 | Bus Station | Roadside | N | 265287 | 192797 | 2.0 | No | - | - | N/A |
| 364 | Bus Station | Roadside | N | 265301 | 192814 | 2.0 | No | - | - | N/A |
| 365 | The Kingsway | Roadside | N | 265258 | 193075 | 2.0 | No | - | - | N/A |
| 367 | The Kingsway | Roadside | N | 265189 | 193044 | 2.0 | No | - | - | N/A |
| 373 | Mill Street Gowerton | Roadside | N | 258859 | 196513 | 2.0 | No | - | - | N/A |
| 375 | Mill Street Gowerton | Roadside | N | 258798 | 196371 | 2.0 | No | - | - | N/A |
| 376 | Mill Street Gowerton | Roadside | N | 258765 | 196368 | 2.0 | No | - | - | N/A |
| 377 | Stery Road Gorseinon | Roadside | N | 258763 | 196317 | 2.0 | No | - | - | N/A |
| 385 | Pentrepoeth Road, Morriston | Roadside | N | 267001 | 198231 | 3.0 | No | - | - | N/A |
| 386 | Copper Quarter | Roadside | N | 266698 | 195334 | 2.0 | No | 3.5 | - | 1.5 |
| 387 | Bevans Row, Port Tennant | Roadside | N | 267990 | 193091 | 2.0 | No | - | - | N/A |
| 388 | Bevans Row, Port Tennant | Roadside | N | 267964 | 193076 | 2.0 | No | - | - | N/A |
| 389 | 94 Wern Terrace | Roadside | N | 267933 | 193111 | 2.0 | No | - | - | N/A |
| 390 | 103 Wern Terrace | Roadside | N | 267974 | 193132 | 2.0 | No | - | - | N/A |
| 391 | High Street, Gorseinon | Roadside | N | 259467 | 198509 | 2.0 | No | - | - | N/A |
| 393 | De La Beche Road, Sketty | Roadside | Swansea AQMA 2010 | 262620 | 192740 | 2.0 | No | 6.5 | - | 1.5 |

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|---------|--|-----------|-----------------------------|---------------------|---------------------|-----------------|--|---|---|-----------------------------------|
| 394 | De La beche Road, Sketty | Roadside | Swansea AQMA 2010 | 262445 | 192645 | 2.0 | No | - | - | N/A |
| 395 | De La beche Road, Sketty | Roadside | Swansea AQMA 2010 | 262413 | 192630 | 2.0 | No | - | - | N/A |
| 396 | 39 De La beche Road, Sketty | Roadside | Swansea AQMA 2010 | 262370 | 192609 | 2.0 | No | - | - | N/A |
| 397 | Mynydd Garnllwyd Road | Roadside | N | 265407 | 197414 | 2.0 | No | 8.5 | - | 1.0 |
| 398 | Mynydd Garnllwyd Road | Roadside | N | 265584 | 197442 | 2.0 | No | 1.5 | - | 1.5 |
| 399 | Llangyfelach Road | Roadside | N | 265224 | 197412 | 2.0 | No | 9.0 | - | 1.5 |
| 400 | Mynydd Garnllwyd Rd | Roadside | N | 265172 | 197360 | 2.0 | No | 6.5 | - | 5.0 |
| 401 | Llangyfelach Road | Roadside | N | 265243 | 197312 | 5.0 | No | 4.5 | - | 1.5 |
| 403 | Dillwyn Street | Roadside | N | 265115 | 192895 | 2.0 | No | - | - | N/A |
| 404 | Penllergaer Primary School | Roadside | N | 261713 | 199051 | 2.0 | No | 17.0 | - | 5.0 |
| 405 | Bevans Row | Roadside | N | 267981 | 193053 | 2.0 | No | 18.5 | - | 1.0 |
| 406 | Morfa Terrace | Roadside | Swansea AQMA 2010 | 265973 | 195222 | 2.0 | No | - | - | N/A |
| 407 | Brynhyfryd Primary School, Llangyfelach Road | Roadside | Swansea AQMA 2010 | 265539 | 195664 | 2.0 | No | - | - | N/A |
| 408 | Port Tennant Road | Roadside | - | 266655 | 193177 | 2.0 | No | 2.0 | - | 1.5 |
| 410 | Kingsway. | Roadside | - | 265156 | 192992 | 2.0 | No | 3.5 | - | 1.0 |
| 412 | Victoria Road, Gowerton | Roadside | - | 258957 | 196766 | 2.0 | No | - | - | N/A |
| 413 | Victoria Road, Gowerton | Roadside | - | 258950 | 196721 | 2.0 | No | - | - | N/A |
| 414 | Cockett Road | Roadside | - | 262928 | 194409 | 2.0 | No | - | - | N/A |
| 415 | Danycoed, Birchgrove | Roadside | - | 270242 | 197671 | 2.0 | No | 16.5 | - | 0.5 |
| 416 | Birchgrove Road | Roadside | - | 270487 | 197805 | 2.0 | No | 7.0 | - | 0.5 |
| 417 | Birchgrove Road | Roadside | - | 270485 | 197705 | 2.0 | No | 5.0 | - | 0.5 |
| 418 | Birchgrove Road | Roadside | - | 270449 | 197600 | 2.0 | No | 19.0 | - | 1.5 |
| 419 | Birchgrove Road | Roadside | - | 270475 | 197714 | 2.0 | No | 5.5 | - | 2.5 |
| 420 | Mayals Road, | Roadside | - | 261784 | 190385 | 2.0 | No | - | - | N/A |
| 421 | Carmarthen Road, Fforestfach | Roadside | - | 262700 | 196214 | 2.0 | No | - | - | N/A |

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|---------|---------------------------------|-----------|-----------------------------|---------------------|---------------------|-----------------|--|---|---|-----------------------------------|
| 422 | Victoria Road, Waunarlywydd | Roadside | N | 260149 | 195425 | 2.5 | No | 3.0 | - | 0.5 |
| 423 | Victoria Road, Waunarlywydd | Roadside | N | 260136 | 195411 | 2.5 | No | 20.0 | - | 2.0 |
| 424 | Cwm Road | Roadside | Swansea AQMA 2010 | 265536 | 194752 | 2.5 | No | 23.0 | - | 1.0 |
| 425 | Furnace way | Roadside | Swansea AQMA 2010 | 265509 | 194748 | 2.5 | No | 4.0 | - | 1.0 |
| 426 | New Cut Road | Roadside | N | 265960 | 193609 | 2.5 | No | 6.0 | - | 3.0 |
| 427 | | Roadside | N | 261994 | 197782 | 2.5 | No | 33.5 | - | 3.0 |
| 428 | Gorseinon Road | Roadside | N | 261518 | 198929 | 2.5 | No | 13.5 | - | 3.0 |
| 429 | Stery Road, Gowerton | Roadside | N | 258827 | 196293 | 2.5 | No | 13.5 | - | 3.0 |
| 430 | Mynydd Newydd Rd | Roadside | N | 263930 | 196601 | 2.5 | No | 26.0 | - | 0.5 |
| 431 | Mynydd Newydd Road | Roadside | N | 264029 | 196852 | 2.5 | No | 12.5 | - | 0.5 |
| 432 | Brynhyfryd School, Llangyfelach | Roadside | N | 265345 | 195645 | 2.5 | No | 10.5 | - | 2.5 |
| 433 | Llangyfelach Road | Roadside | N | 265543 | 195621 | 2.5 | No | - | - | N/A |
| 434 | Llangyfelach Rd | Roadside | N | 265530 | 195679 | 2.5 | No | - | - | N/A |
| 435 | Gors Avenue | Roadside | N | 263104 | 194457 | 2.5 | No | 5.0 | - | 1.0 |
| 436 | Gors Avenue | Roadside | N | 263005 | 194476 | 2.5 | No | 7.5 | - | 0.5 |
| 437 | Bevans Row | Roadside | N | 267986 | 193103 | 2.5 | No | 14.5 | - | 2.0 |
| 438 | Copper Quarter | Roadside | N | 266541 | 195495 | 2.5 | No | - | - | N/A |
| 439 | Glanmor Road | Roadside | N | 262949 | 193293 | 2.5 | No | - | - | N/A |
| 440 | Glanmor Road | Roadside | N | 262905 | 193293 | 2.5 | No | - | - | N/A |
| 441 | Broadway | Roadside | N | 262903 | 193379 | 2.5 | No | 12.5 | - | 2.5 |
| 442 | Townhill Road | Roadside | N | 263004 | 193454 | 2.5 | No | 30.0 | - | 11.5 |
| 423 | Cockett Road | Roadside | N | 262945 | 193472 | 2.0 | No | 19.0 | - | 1.0 |
| 424 | Cockett Road | Roadside | N | 262991 | 193759 | 2.0 | No | 41.0 | - | 2.5 |
| 425 | Vivian Road | Roadside | N | 262879 | 193408 | 2.0 | No | 22.0 | - | 1.5 |
| 426 | Vivian Road | Roadside | N | 262838 | 193374 | 2.0 | No | 19.5 | - | 4.5 |
| 427 | Tycoch Road | Roadside | N | 262709 | 193311 | 2.0 | No | 11.5 | - | 2.0 |
| 428 | Tycoch Road | Roadside | N | 262788 | 1932813 | 2.0 | No | 10.5 | - | 4.0 |
| 429 | Tycoch Road | Roadside | N | 262761 | 193228 | 2.0 | No | 9.5 | - | 4.0 |
| 430 | Tycoch Road | Roadside | N | 262812 | 193293 | 2.0 | No | 8.0 | - | 1.0 |
| 431 | Newton Road, Mumbles | Roadside | N | 261220 | 188184 | 2.0 | No | 10.0 | - | 1.5 |
| 432 | Newton Road, Mumbles | Roadside | N | 261163 | 188175 | 2.0 | No | 17.1 | - | 4.8 |

| Site ID | Site Name | Site Type | Associated with Named AQMA? | X OS Grid Reference | Y OS Grid Reference | Site Height (m) | Collocated with a Continuous Analyser? | Distance from monitor to nearest relevant exposure (m) ⁽¹⁾ | Distance from Kerb to Nearest Relevant Exposure (m) | Distance from Kerb to Monitor (m) |
|---------|------------------------------|-----------|-----------------------------|---------------------|---------------------|-----------------|--|---|---|-----------------------------------|
| 433 | Castle Road, Mumbles | Roadside | - | 261221 | 188298 | 2.0 | No | 5.0 | - | 0.5 |
| 434 | Llangyfelach Road | Roadside | - | 265548 | 195679 | 2.0 | No | 4.5 | - | 0.5 |
| 435 | Llangyfelach Road | Roadside | - | 265516 | 195729 | 2.0 | No | 4.5 | - | 1.0 |
| 436 | Mayals Road, Mayals | Roadside | - | 261800 | 190362 | 2.0 | No | 22.5 | - | 2.5 |
| 437 | Gower Road, Sketty | Roadside | - | 262548 | 192943 | 2.0 | No | - | - | N/A |
| 438 | Vivian road, Sketty | Roadside | - | 262612 | 192995 | 2.0 | No | - | - | N/A |
| 439 | Gower Road, Sketty | Roadside | - | 262691 | 192852 | 2.0 | No | - | - | N/A |
| 440 | Carmarthen Road, Forestfach | Roadside | - | 262990 | 195820 | 2.0 | No | 4.5 | - | 2.5 |
| 441 | Carmarthen Road, Forestfach | Roadside | - | 263219 | 195513 | 2.0 | No | - | - | N/A |
| 442 | Ravenhill Road, Forestfach | Roadside | - | 263344 | 195474 | 2.0 | No | - | - | N/A |
| 443 | Carmarthen Road, Gendros | Roadside | - | 263680 | 195103 | 2.0 | No | - | - | N/A |
| 444 | Clarence Street | Roadside | - | 265285 | 192696 | 2.5 | No | - | - | N/A |
| 445 | Westway | Roadside | - | 265334 | 192608 | 2.5 | No | - | - | N/A |
| 446 | Osytersmouth Road | Roadside | - | 265339 | 192534 | 2.5 | No | - | - | N/A |
| 447 | Cwm Level Road, Landore | Roadside | - | 265526 | 195807 | 2.5 | No | - | - | N/A |
| 448 | Dyfatty Street, Dyfatty | Roadside | - | 265597 | 194061 | 2.5 | No | - | - | N/A |
| 449 | Carmarthen Road, Dyfatty | Roadside | - | 265594 | 194175 | 2.5 | No | - | - | N/A |
| 450 | Pentreharne Road | Roadside | - | 265682 | 195374 | 2.5 | No | - | - | N/A |
| 451 | Neath Road, Landore | Roadside | - | 265876 | 194318 | 2.5 | No | - | - | N/A |
| 452 | Neath Road, Landore | Roadside | - | 265922 | 194428 | 2.5 | No | - | - | N/A |
| 453 | Neath Road, Landore | Roadside | - | 265973 | 195222 | 2.5 | No | - | - | N/A |
| 454 | Pentreguinea Road, St.Thomas | Roadside | - | 266209 | 193867 | 2.5 | No | - | - | N/A |
| 455 | Pentreguinea Road, St.Thomas | Roadside | - | 266236 | 193488 | 2.5 | No | - | - | N/A |
| 456 | Delhi Street, St.Thomas | Roadside | - | 266314 | 193298 | 2.0 | No | - | - | N/A |
| 458 | Cockett Road | Roadside | N | 262941 | 193459 | 2.5 | No | 22.5 | - | 2.5 |

| Site ID | Site Name | Site Type | Associated with Named AQMA? | X OS Grid Reference | Y OS Grid Reference | Site Height (m) | Collocated with a Continuous Analyser? | Distance from monitor to nearest relevant exposure (m) ⁽¹⁾ | Distance from Kerb to Nearest Relevant Exposure (m) | Distance from Kerb to Monitor (m) |
|---------|-------------|-----------|-----------------------------|---------------------|---------------------|-----------------|--|---|---|-----------------------------------|
| 459 | Neath Road | Kerbside | N | 267019 | 197407 | 2.5 | No | - | - | - |
| 460 | Ystrad Road | Kerbside | N | 262084 | 196454 | 2.5 | No | - | - | - |

Notes:

(1) 0m indicates that the sited monitor represents exposure and as such no distance calculation is required.

Figure 2.2 – Spatial Map of Non-Automatic Monitoring Sites

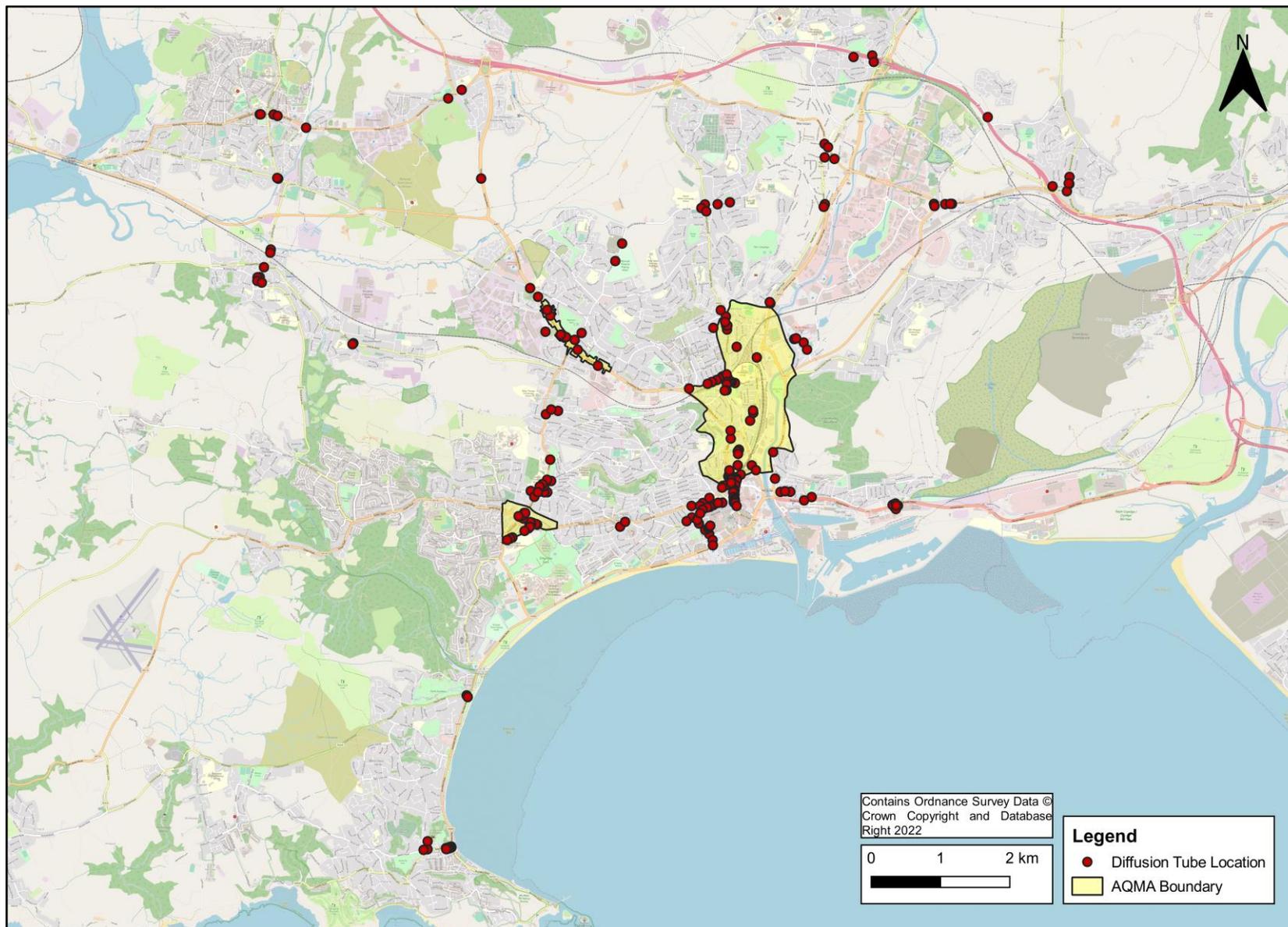


Figure 2.3 – Map of Non-Automatic Monitoring Sites (Gorseinon and Gowerton)

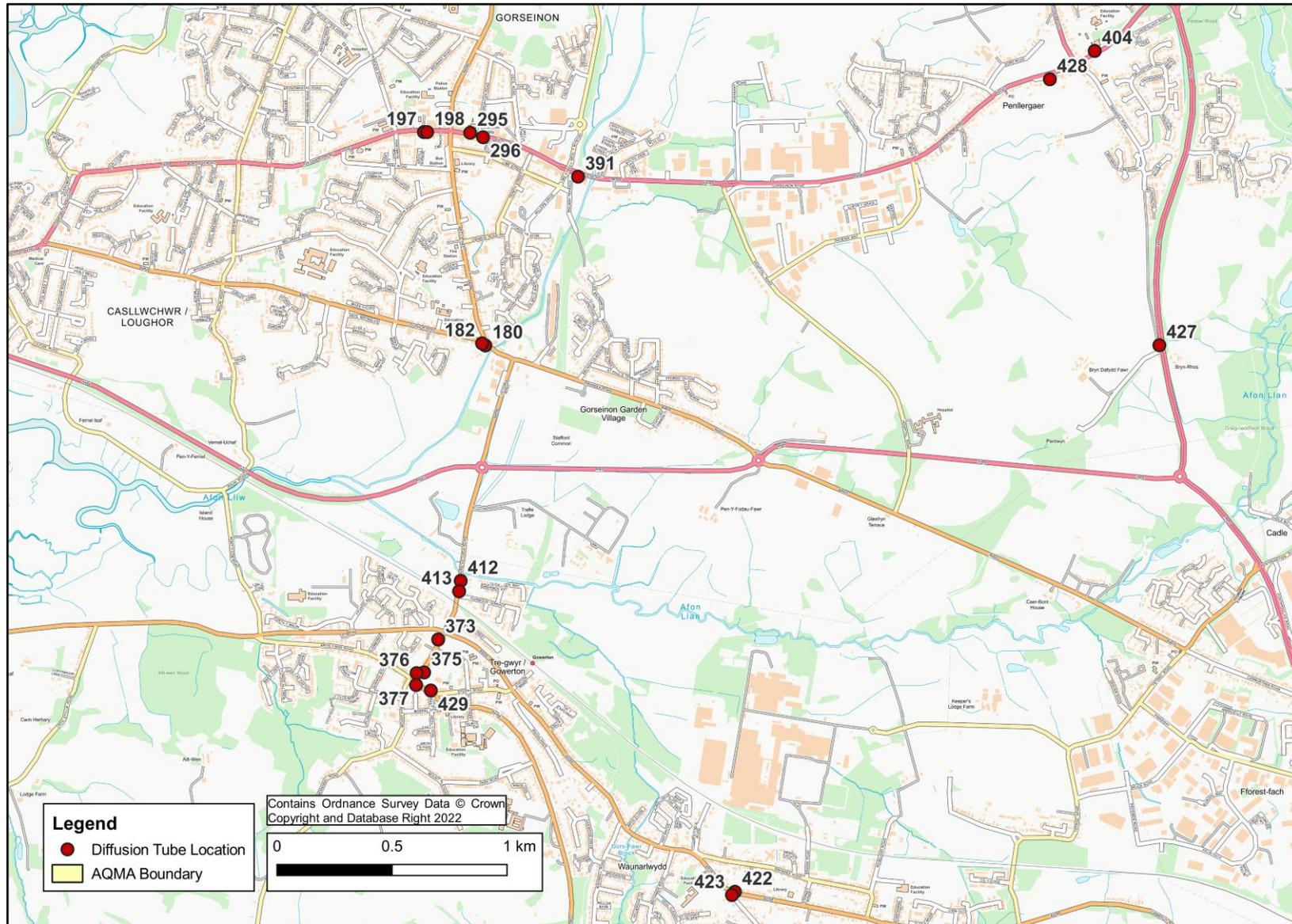


Figure 2.4 – Map of Non-Automatic Monitoring Sites (Fforestfach)

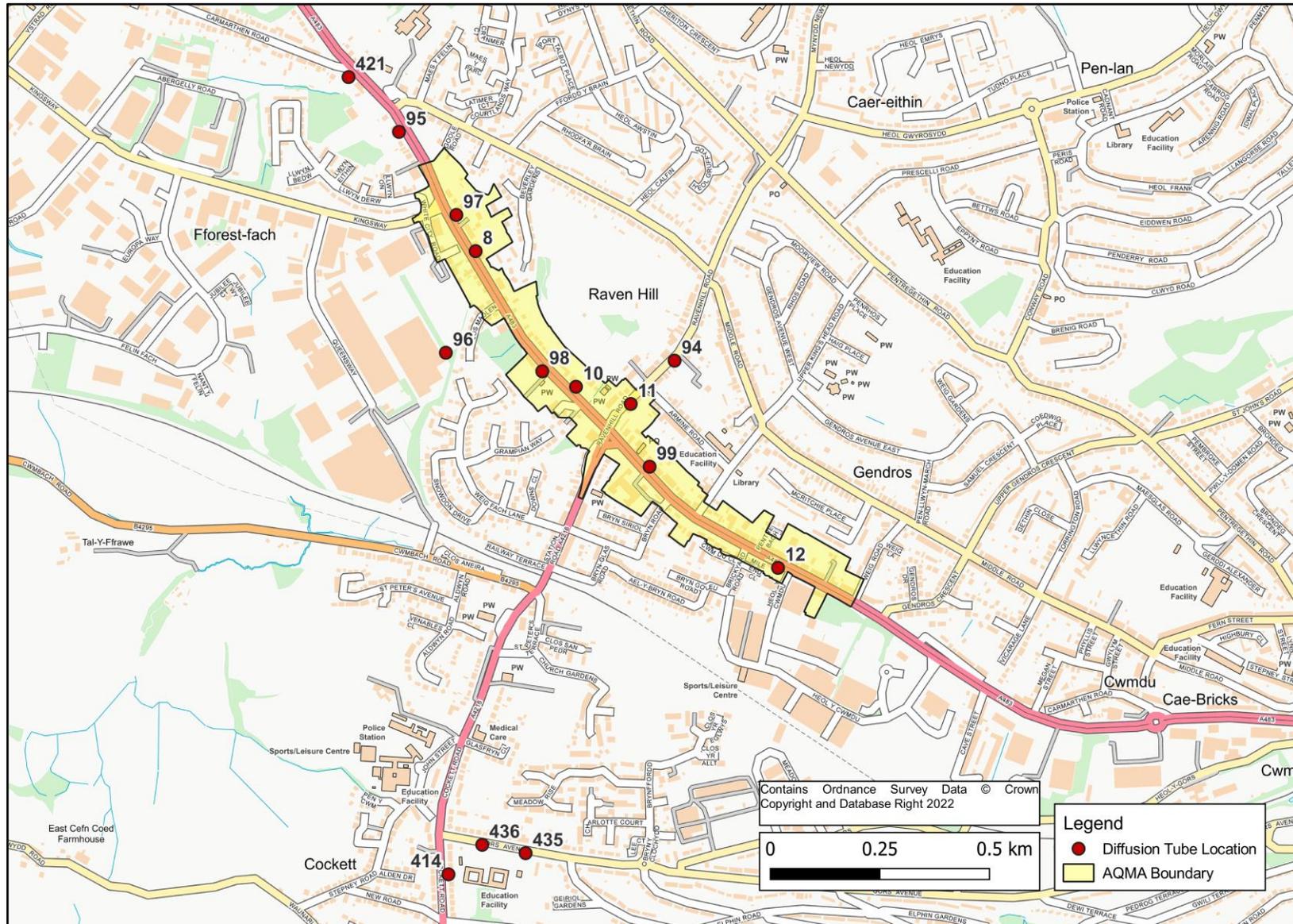


Figure 2.5 – Map of Non-Automatic Monitoring Sites (Hafod and Landore)

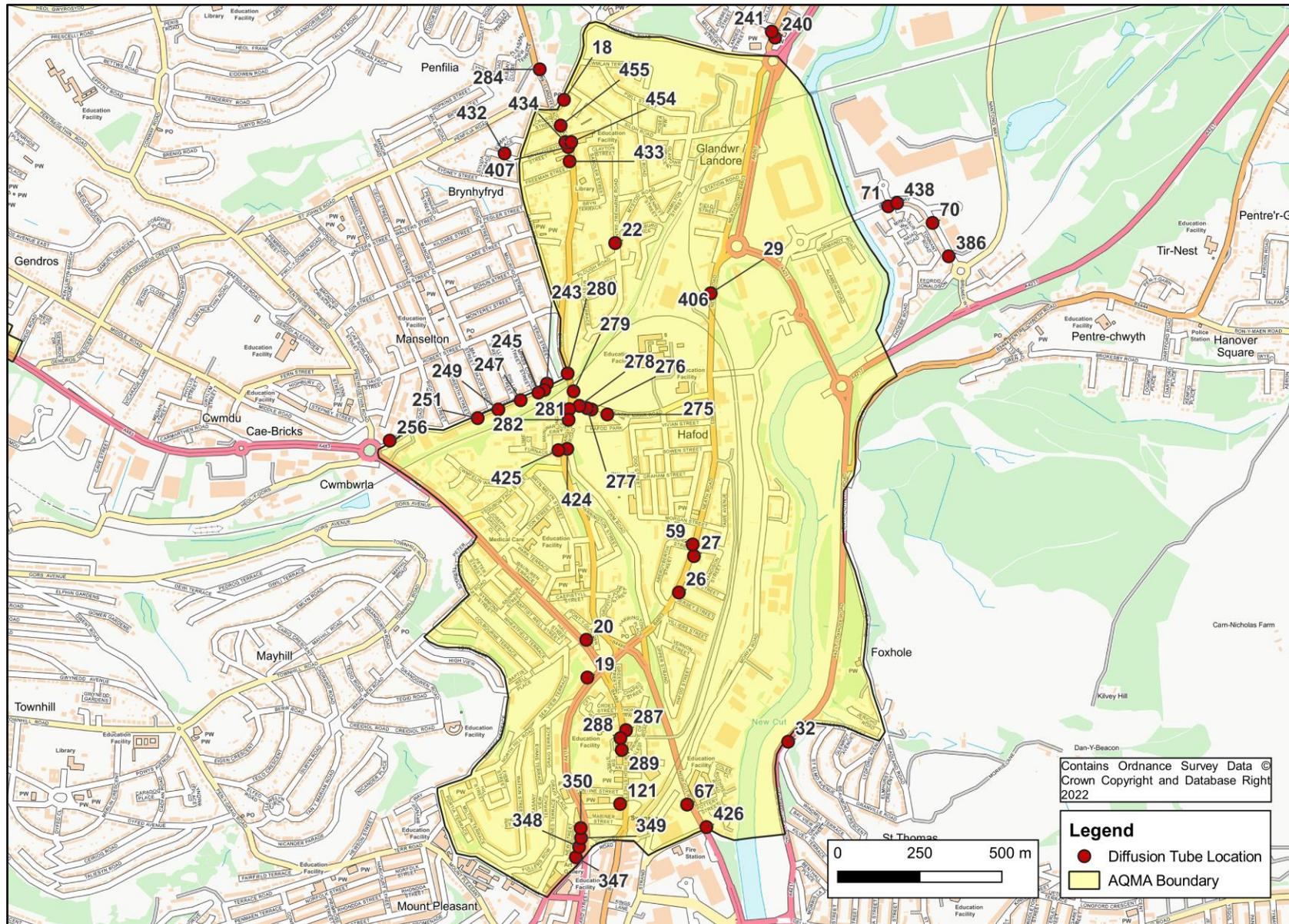


Figure 2.6 – Map of Non-Automatic Monitoring Sites (St Thomas and City Centre)

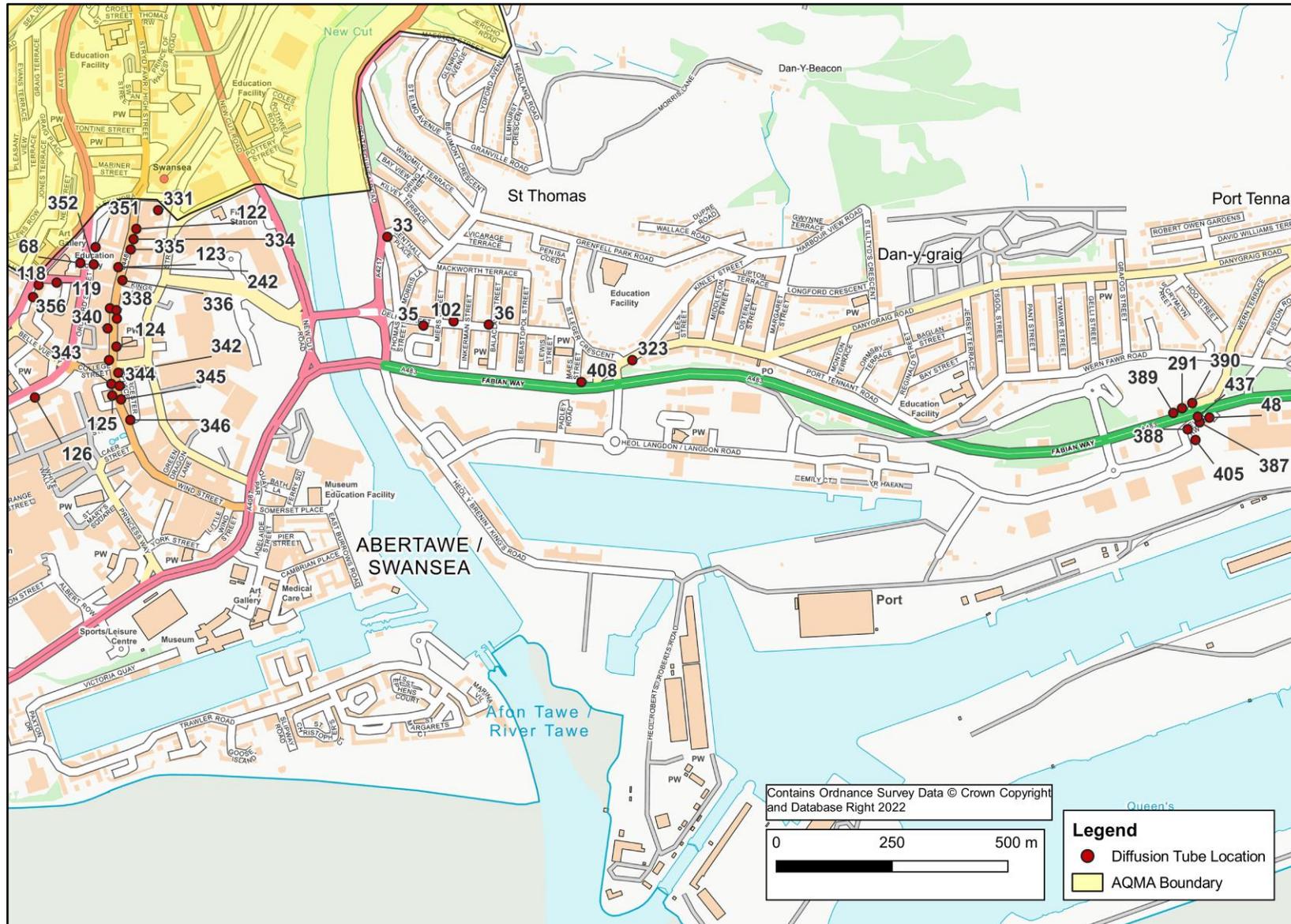


Figure 2.7 – Map of Non-Automatic Monitoring Sites (Uplands and City Centre West)

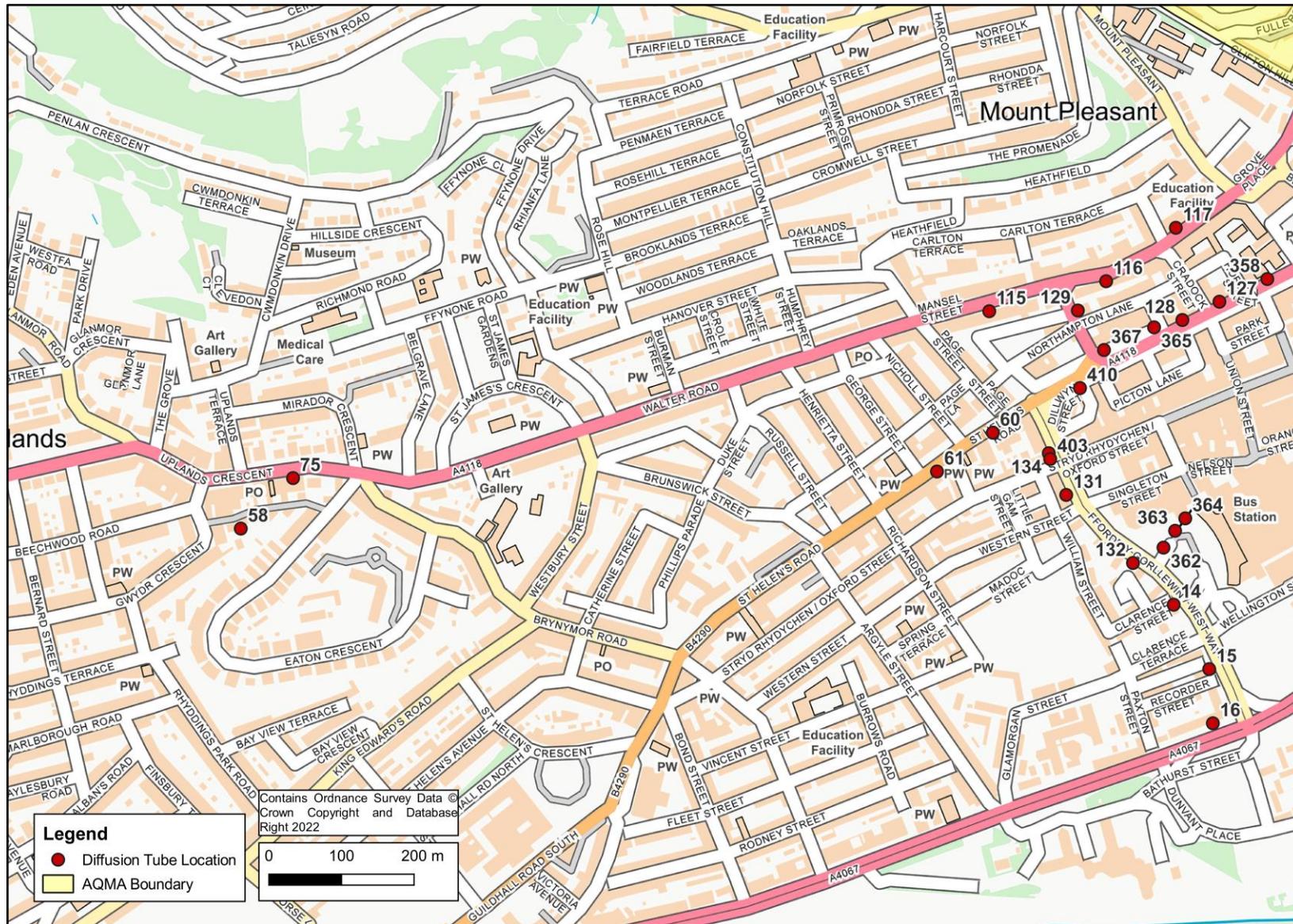


Figure 2.8 – Map of Non-Automatic Monitoring Sites (Sketty)

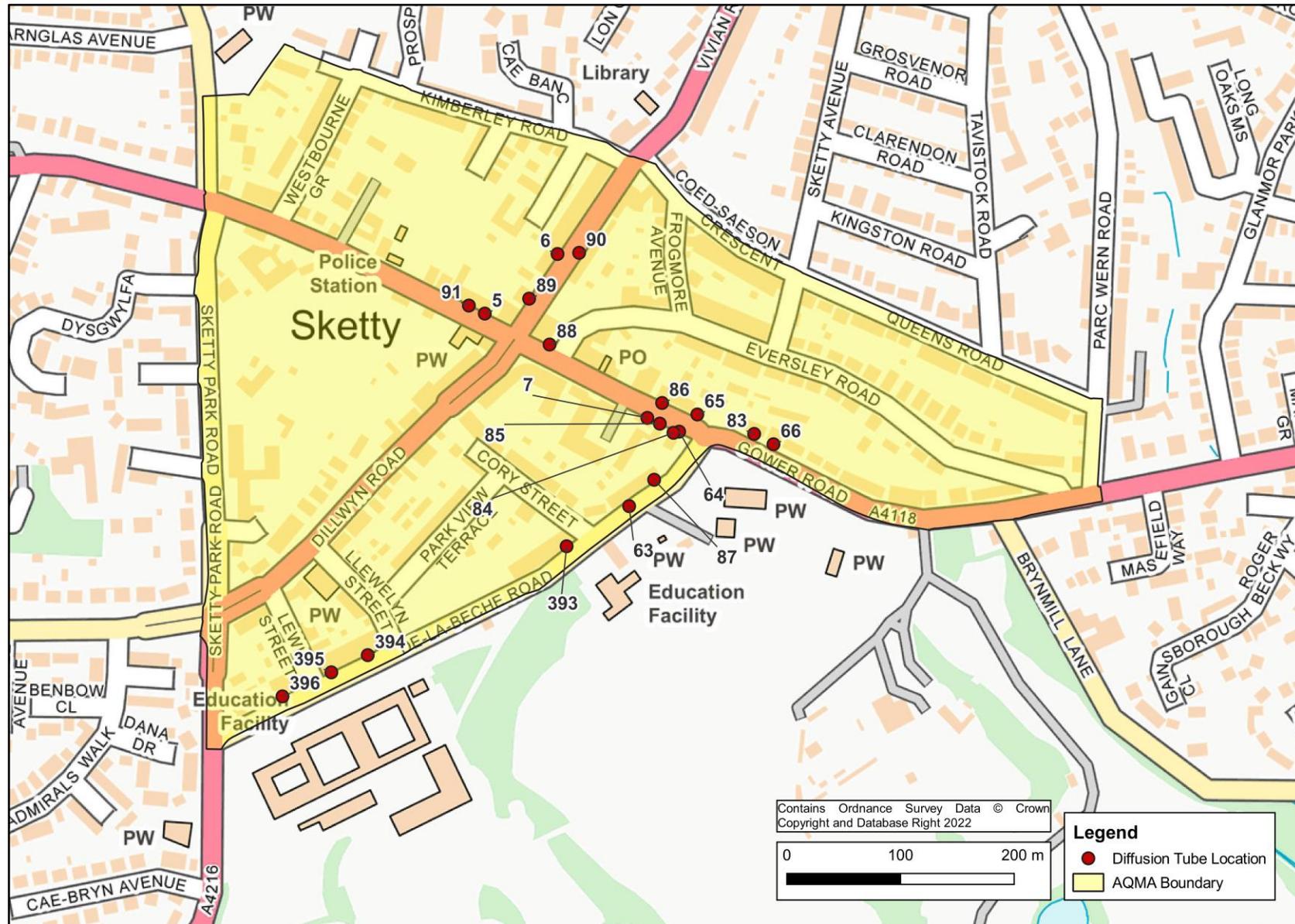


Figure 2.9 – Map of Non-Automatic Monitoring Sites (Mumbles)

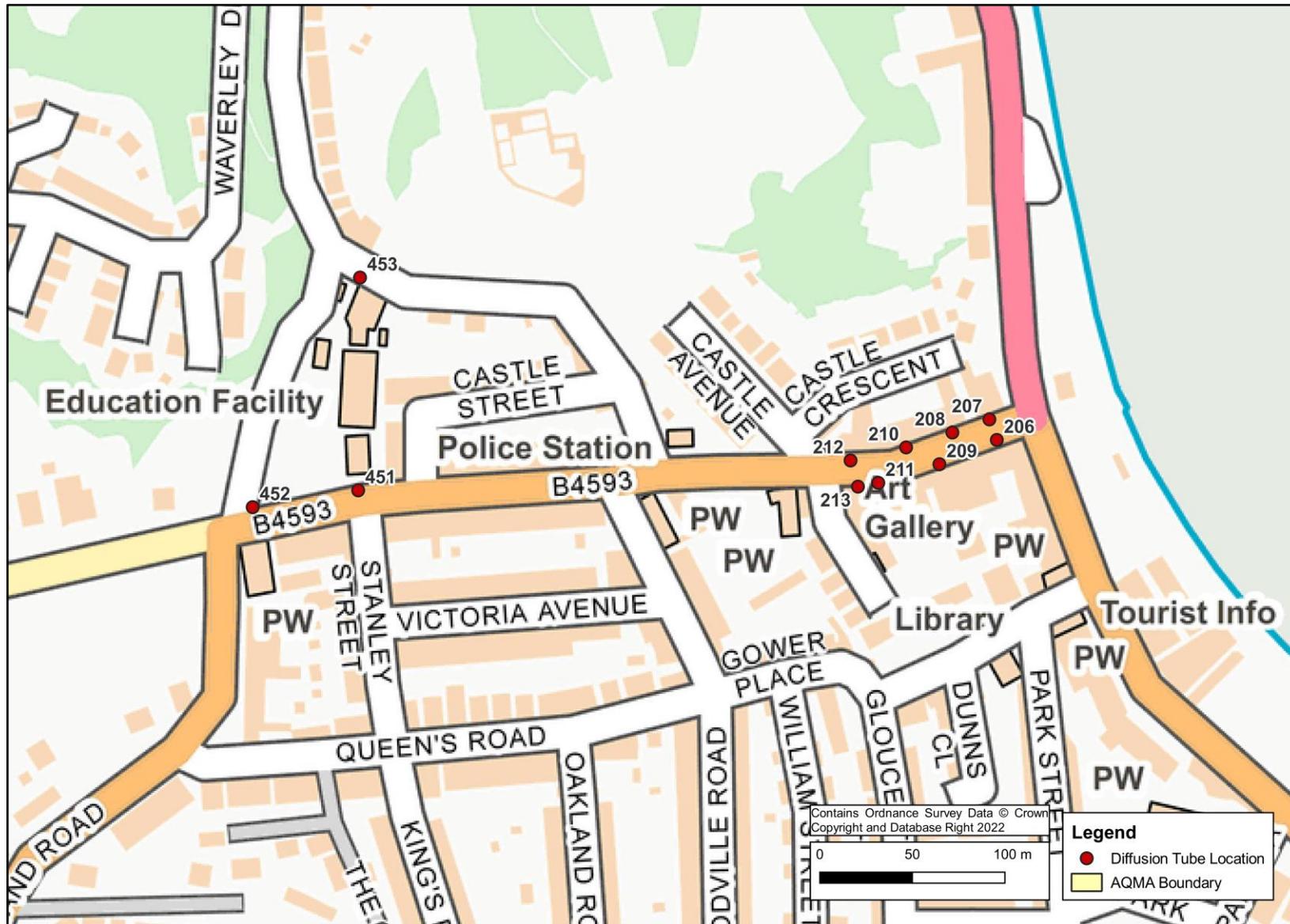


Figure 2.10 – Map of Non-Automatic Monitoring Sites (North Swansea)

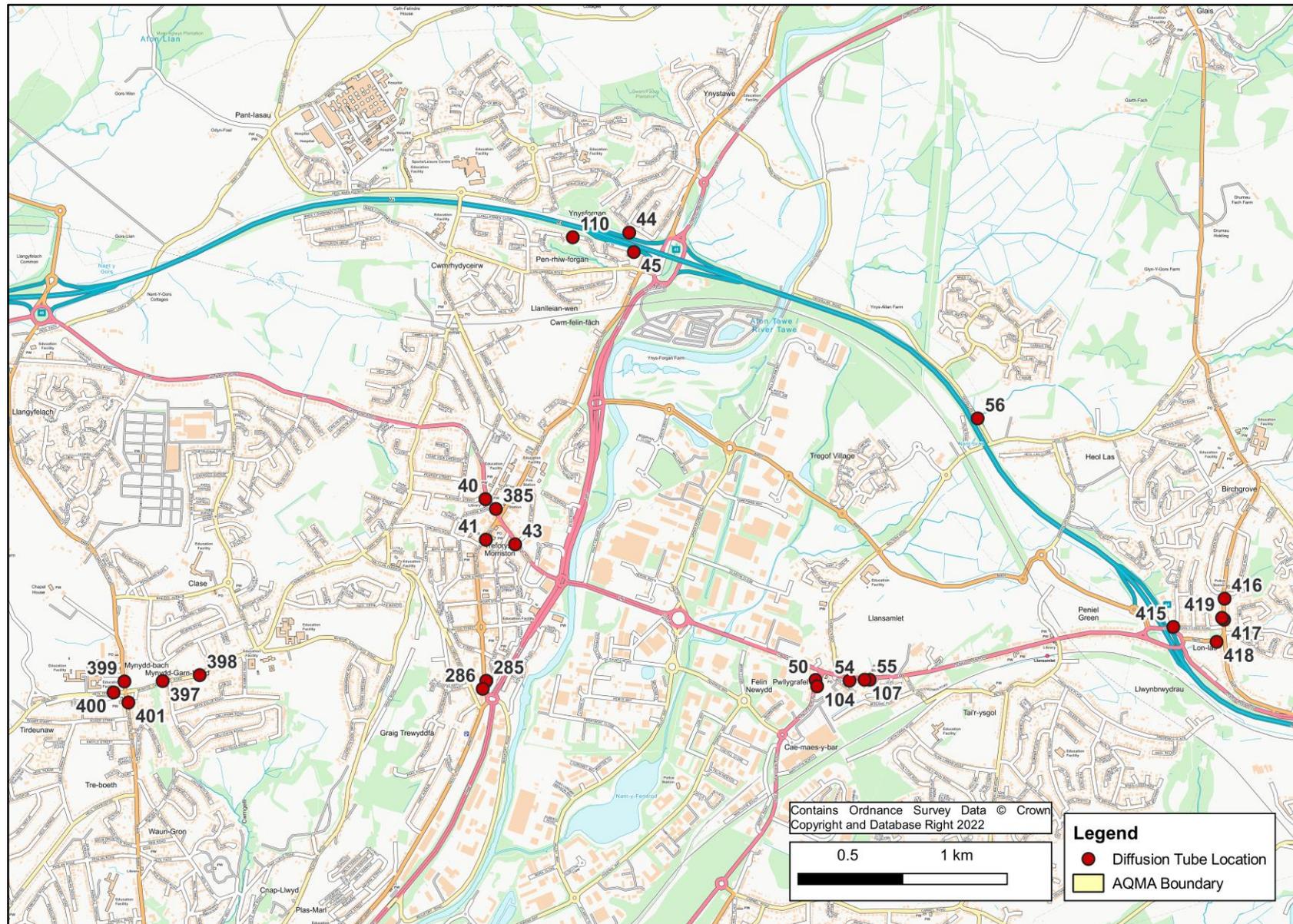
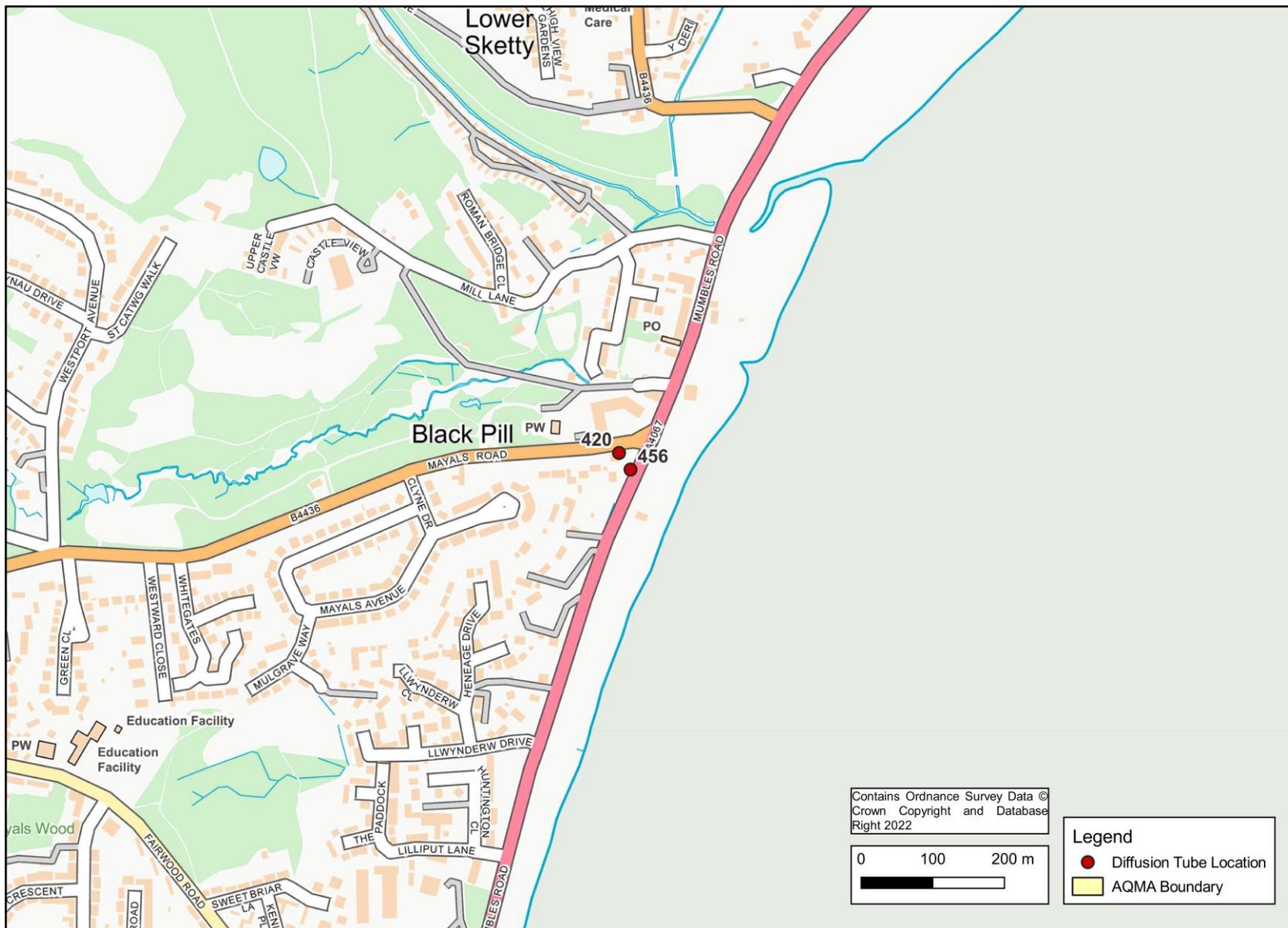


Figure 2.11 – Map of Non-Automatic Monitoring Sites (Black Pill)



2.2 2020 Air Quality Monitoring Results

Table 2.3 – Annual Mean NO₂ Monitoring Results (µg/m³)

| Site ID | Site Type | Monitoring Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2020 (%) ⁽²⁾ | 2016 | 2017 | 2018 | 2019 | 2020 |
|---------|------------------|-----------------|---|--|---------------------|-----------------------|----------------------|-------------|------|
| CM1 | Roadside | Automatic | 94.7 | 94.7 | 24.4 (30.37) | 20 (24.41) | 18.7 (23.50) | 24.1 | 17.6 |
| CM2 | Roadside | Automatic | 98.0 | 98.0 | 22.3 (29.69) | 20.6 (29.14) | 18.1 (23.50) | 23.5 | 11.4 |
| CM3 | Urban Background | Automatic | 94.8 | 94.8 | 16.4 | 13.4 | 14.5 | 13.1 | 10.5 |
| CM4 | Roadside | Automatic | 97.1 | 97.1 | 45.6 | 40.0 | 37.3 | 34.8 | 28.8 |
| CM5 | Roadside | Automatic | 95.1 | 95.1 | 35.8 | 32.2 | 30.3 | 34.6 | 25.6 |
| CM11 | Roadside | Automatic | 97.9 | 97.1 | 48.3 (51.76) | 44 (47.20) | 39 (45.87) | 44.5 | 30.4 |
| CM12 | Roadside | Automatic | 96.5 | 96.5 | N/A | 25.7 | 26.2 | 27.0 | 21.7 |
| CM13 | Roadside | Automatic | 98.3 | 98.3 | N/A | N/A | 27 (34.50) | 28.5 | 10.8 |
| 5 | Roadside | Passive | 92.0 | 92.0 | 31.7 | 28.4 | 25.5 | 24.3 | 16.2 |
| 6 | Roadside | Passive | 92.3 | 92.3 | 27.6 | 23.1 | 21.4 | 20.6 | 14.8 |
| 7 | Roadside | Passive | 99.7 | 99.7 | 45.8 | 39.1 | 34.2 | 33.8 | 24.2 |
| 8 | Roadside | Passive | 99.7 | 99.7 | 46.6 | 34.6 | 33.6 | 37.1 | 26.7 |
| 10 | Roadside | Passive | 76.9 | 76.9 | 24.5 | 20.8 | 19.8 | 18.5 | 13.6 |
| 11 | Roadside | Passive | 99.7 | 99.7 | 37.2 | 30.3 | 28.4 | 27.8 | 20.4 |
| 12 | Roadside | Passive | 92.0 | 92.0 | 42.7 | 34.8 | 33.2 | 33.8 | 24.3 |
| 14 | Roadside | Passive | 30.5 | 30.5 | 25.0 | 19.5 | 20.0 | 18.0 | 14.5 |
| 15 | Roadside | Passive | 30.5 | 30.5 | 26.4 | 22.1 | 20.8 | 20.5 | 16.3 |
| 16 | Roadside | Passive | 92.3 | 92.3 | 31.4 | 26.6 | 23.6 | 23.3 | 16.5 |
| 18 | Roadside | Passive | 99.7 | 99.7 | 46.4 | 37.1 | 36.1 | 36.6 | 28.5 |
| 19 | Roadside | Passive | 90.1 | 90.1 | 44.1 | 38.3 | 36.7 | 35.2 | 24.5 |
| 20 | Roadside | Passive | 99.7 | 99.7 | 33.7 | 29.9 | 29.3 | 28.4 | 20.6 |
| 22 | Roadside | Passive | 99.7 | 99.7 | 32.0 | 26.8 | 24.8 | 22.4 | 17.8 |
| 26 | Roadside | Passive | 99.7 | 99.7 | 38.4 | 29.5 | 27.7 | 28.1 | 21.7 |
| 27 | Roadside | Passive | 99.7 | 99.7 | 36.7 | 29.3 | 28.9 | 28.0 | 21.8 |
| 29 | Roadside | Passive | 82.1 | 82.1 | 48.4 | 30.1 | 24.3 | 25.4 | 18.6 |

| Site ID | Site Type | Monitoring Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2020 (%) ⁽²⁾ | 2016 | 2017 | 2018 | 2019 | 2020 |
|---------|-----------|-----------------|---|--|-------------|------|------|------|------|
| 32 | Roadside | Passive | 99.7 | 99.7 | 33.9 | 26.7 | 26.1 | 26.9 | 19.8 |
| 33 | Roadside | Passive | 82.1 | 82.1 | 31.7 | 26.6 | 25.3 | 25.1 | 19.8 |
| 35 | Roadside | Passive | 99.7 | 99.7 | 33.5 | 27.8 | 27.0 | 27.4 | 20.6 |
| 36 | Roadside | Passive | 92.0 | 92.0 | 29.7 | 24.9 | 22.8 | 22.6 | 18.0 |
| 40 | Roadside | Passive | 59.1 | 59.1 | 26.2 | 22.1 | 20.4 | 19.9 | 14.3 |
| 41 | Roadside | Passive | 76.6 | 76.6 | 33.1 | 26.8 | 28.1 | 27.4 | 22.8 |
| 43 | Roadside | Passive | 99.7 | 99.7 | 34.8 | 28.6 | 27.7 | 26.4 | 20.9 |
| 44 | Roadside | Passive | 99.7 | 99.7 | 26.1 | 23.9 | 21.0 | 21.7 | 15.5 |
| 45 | Roadside | Passive | 91.8 | 91.8 | 30.9 | 23.3 | 22.9 | 23.0 | 18.2 |
| 48 | Roadside | Passive | 82.1 | 82.1 | 22.2 | 17.4 | 18.2 | 16.9 | 12.3 |
| 50 | Roadside | Passive | 90.1 | 90.1 | 38.0 | 30.8 | 28.7 | 26.3 | 21.4 |
| 54 | Roadside | Passive | 99.7 | 99.7 | 31.3 | 26.6 | 26.3 | 24.5 | 19.7 |
| 55 | Roadside | Passive | 89.8 | 89.8 | 31.2 | 25.9 | 26.4 | 24.6 | 19.5 |
| 56 | Roadside | Passive | 99.7 | 99.7 | 20.7 | 15.8 | 27.5 | 27.7 | 23.1 |
| 58 | Roadside | Passive | 99.7 | 99.7 | 33.8 | 27.4 | 24.6 | 30.0 | 20.2 |
| 59 | Roadside | Passive | 99.7 | 99.7 | 48.4 | 39.6 | 35.0 | 36.2 | 27.6 |
| 60 | Roadside | Passive | 75.0 | 75.0 | 30.2 | 26.4 | 25.4 | 22.7 | - |
| 61 | Roadside | Passive | 99.7 | 99.7 | 36.8 | 27.9 | 26.0 | 27.5 | 20.5 |
| 63 | Roadside | Passive | 99.7 | 99.7 | 22.0 | 16.5 | 15.8 | 18.0 | 11.9 |
| 64 | Roadside | Passive | 92.0 | 92.0 | 32.8 | 26.9 | 31.1 | 32.1 | 19.2 |
| 65 | Roadside | Passive | 99.7 | 99.7 | 25.8 | 21.5 | 20.6 | 19.2 | 13.8 |
| 66 | Roadside | Passive | 99.7 | 99.7 | 29.5 | 24.1 | 20.5 | 20.6 | 16.5 |
| 67 | Roadside | Passive | 80.2 | 80.2 | 39.8 | 32.4 | 34.1 | 38.5 | 26.5 |
| 68 | Roadside | Passive | 99.7 | 99.7 | 35.0 | 28.3 | 25.1 | 26.5 | 18.8 |
| 70 | Roadside | Passive | 89.8 | 89.8 | 24.1 | 20.2 | 18.1 | 22.8 | 16.9 |
| 71 | Roadside | Passive | 57.7 | 57.7 | 26.0 | 18.0 | 16.5 | 20.6 | - |
| 75 | Roadside | Passive | 99.7 | 99.7 | 34.5 | 30.4 | 28.0 | 27.2 | 21.2 |
| 83 | Roadside | Passive | 22.8 | 22.8 | 28.1 | 22.9 | 21.4 | 20.9 | 12.9 |
| 84 | Roadside | Passive | 90.1 | 90.1 | 33.9 | 27.5 | 24.7 | 24.5 | 18.1 |
| 85 | Roadside | Passive | 90.1 | 90.1 | 35.8 | 29.1 | 26.1 | 24.6 | 18.9 |
| 86 | Roadside | Passive | 99.7 | 99.7 | 32.3 | 22.6 | 19.1 | 19.6 | 14.0 |
| 87 | Roadside | Passive | 99.7 | 99.7 | 20.6 | 17.1 | 14.3 | 14.4 | 9.3 |
| 88 | Roadside | Passive | 99.7 | 99.7 | 30.7 | 26.1 | 23.0 | 24.2 | 16.2 |
| 89 | Roadside | Passive | 99.7 | 99.7 | 25.2 | 18.0 | 17.0 | 16.8 | 12.5 |
| 90 | Roadside | Passive | 99.7 | 99.7 | 31.4 | 24.5 | 23.6 | 23.1 | 16.2 |
| 91 | Roadside | Passive | 90.1 | 90.1 | 29.0 | 25.5 | 25.2 | 21.3 | 15.0 |

| Site ID | Site Type | Monitoring Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2020 (%) ⁽²⁾ | 2016 | 2017 | 2018 | 2019 | 2020 |
|---------|-----------|-----------------|---|--|-------------|------|------|------|------|
| 94 | Roadside | Passive | 99.7 | 99.7 | 24.3 | 22.8 | 21.0 | 21.2 | 15.8 |
| 95 | Roadside | Passive | 67.3 | 67.3 | 24.1 | 21.2 | 18.5 | 17.9 | 13.5 |
| 96 | Roadside | Passive | 92.0 | 92.0 | 28.0 | 22.3 | 20.3 | 19.1 | 15.7 |
| 97 | Roadside | Passive | 92.3 | 92.3 | 35.6 | 28.2 | 26.0 | 24.7 | 19.5 |
| 98 | Roadside | Passive | 99.7 | 99.7 | 34.3 | 27.3 | 27.3 | 26.7 | 19.1 |
| 99 | Roadside | Passive | 92.3 | 92.3 | 31.0 | 27.0 | 23.8 | 23.1 | 16.1 |
| 102 | Roadside | Passive | 23.1 | 23.1 | 29.8 | 26.6 | 24.2 | 25.2 | 19.3 |
| 104 | Roadside | Passive | 99.7 | 99.7 | 26.8 | 22.1 | 22.0 | 20.6 | 17.4 |
| 107 | Roadside | Passive | 30.5 | 30.5 | 30.8 | 26.2 | 24.6 | 16.7 | 21.1 |
| 110 | Roadside | Passive | 99.7 | 99.7 | 23.8 | 20.5 | 19.7 | 18.7 | 14.2 |
| 115 | Roadside | Passive | 89.8 | 89.8 | 35.1 | 30.6 | 29.0 | 27.5 | 18.1 |
| 116 | Roadside | Passive | 99.7 | 99.7 | 37.7 | 33.1 | 32.0 | 28.9 | 21.6 |
| 117 | Roadside | Passive | 99.7 | 99.7 | 37.1 | 30.1 | 30.5 | 29.1 | 21.2 |
| 118 | Roadside | Passive | 99.7 | 99.7 | 29.0 | 24.8 | 25.8 | 24.2 | 16.1 |
| 119 | Roadside | Passive | 99.7 | 99.7 | 31.3 | 27.9 | 28.3 | 26.5 | 16.8 |
| 121 | Roadside | Passive | 92.3 | 92.3 | 48.0 | 38.6 | 38.3 | 39.9 | 26.0 |
| 122 | Roadside | Passive | 99.7 | 99.7 | 32.1 | 25.9 | 29.0 | 28.5 | 19.7 |
| 123 | Roadside | Passive | 99.7 | 99.7 | 46.4 | 36.1 | 36.6 | 34.1 | 23.6 |
| 124 | Roadside | Passive | 99.7 | 99.7 | 39.6 | 32.4 | 33.1 | 33.3 | 21.0 |
| 125 | Roadside | Passive | 90.1 | 90.1 | 38.0 | 32.0 | 32.3 | 37.0 | 24.5 |
| 126 | Roadside | Passive | 92.3 | 92.3 | 34.9 | 27.6 | 26.1 | 28.8 | 20.1 |
| 127 | Roadside | Passive | 7.7 | 7.7 | 34.1 | 26.4 | 25.5 | - | - |
| 128 | Roadside | Passive | 82.7 | 82.7 | 38.1 | 30.6 | 29.3 | 23.2 | 16.3 |
| 129 | Roadside | Passive | 99.7 | 99.7 | 37.1 | 30.4 | 29.7 | 27.8 | 19.2 |
| 131 | Roadside | Passive | 99.7 | 99.7 | 42.0 | 29.8 | 30.7 | 29.7 | 22.1 |
| 132 | Roadside | Passive | 99.7 | 99.7 | 32.3 | 26.7 | 25.8 | 24.5 | 17.8 |
| 134 | Roadside | Passive | 92.0 | 92.0 | 42.1 | 33.5 | 31.6 | 32.7 | 22.6 |
| 180 | Roadside | Passive | 99.7 | 99.7 | 31.0 | 24.4 | 24.7 | 23.8 | 17.5 |
| 182 | Roadside | Passive | 99.7 | 99.7 | 28.5 | 24.2 | 20.9 | 21.8 | 16.6 |
| 197 | Roadside | Passive | 99.7 | 99.7 | 33.5 | 28.1 | 26.6 | 25.9 | 18.4 |
| 198 | Roadside | Passive | 99.7 | 99.7 | 33.2 | 28.2 | 26.5 | 27.2 | 19.9 |
| 206 | Roadside | Passive | 82.4 | 82.4 | 41.8 | 34.0 | 30.4 | 30.0 | 22.4 |
| 207 | Roadside | Passive | 99.7 | 99.7 | 37.7 | 29.7 | 27.0 | 26.5 | 19.4 |
| 208 | Roadside | Passive | 99.7 | 99.7 | 37.2 | 29.2 | 28.6 | 26.0 | 19.3 |
| 209 | Roadside | Passive | 99.7 | 99.7 | 39.2 | 30.5 | 29.3 | 27.3 | 18.8 |
| 210 | Roadside | Passive | 99.7 | 99.7 | 33.3 | 26.6 | 25.8 | 25.8 | 16.4 |

| Site ID | Site Type | Monitoring Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2020 (%) ⁽²⁾ | 2016 | 2017 | 2018 | 2019 | 2020 |
|---------|-----------|-----------------|---|--|-------------|-------------|------|------|------|
| 211 | Roadside | Passive | 99.7 | 99.7 | 26.7 | 26.2 | 25.6 | 23.5 | 17.4 |
| 212 | Roadside | Passive | 99.7 | 99.7 | 29.0 | 17.8 | 19.4 | 17.7 | 12.8 |
| 213 | Roadside | Passive | 92.3 | 92.3 | 34.9 | 27.1 | 25.6 | 24.7 | 16.5 |
| 240 | Roadside | Passive | 99.7 | 99.7 | 31.1 | 26.2 | 25.4 | 24.3 | 18.6 |
| 241 | Roadside | Passive | 30.5 | 30.5 | 30.8 | 25.3 | 24.5 | 25.5 | 18.0 |
| 242 | Roadside | Passive | 99.7 | 99.7 | 43.3 | 32.1 | 33.2 | 32.5 | 21.4 |
| 243 | Roadside | Passive | 99.7 | 99.7 | 38.9 | 32.1 | 28.6 | 27.9 | 22.0 |
| 244 | Roadside | Passive | 92.3 | 92.3 | 43.2 | 34.0 | 35.8 | 33.3 | 27.7 |
| 245 | Roadside | Passive | 30.5 | 30.5 | 42.3 | 32.1 | 33.9 | 30.3 | 25.1 |
| 247 | Roadside | Passive | 89.8 | 89.8 | 32.9 | 25.5 | 26.0 | 24.0 | 19.6 |
| 249 | Roadside | Passive | 99.7 | 99.7 | 31.6 | 25.7 | 25.0 | 23.3 | 18.8 |
| 251 | Roadside | Passive | 30.5 | 30.5 | 31.6 | 24.4 | 24.7 | 20.2 | 19.1 |
| 256 | Roadside | Passive | 99.7 | 99.7 | 37.9 | 32.5 | 31.7 | 31.0 | 23.8 |
| 275 | Roadside | Passive | 99.7 | 99.7 | 22.5 | 18.2 | 17.6 | 19.6 | 14.8 |
| 276 | Roadside | Passive | 99.7 | 99.7 | 34.6 | 30.6 | 25.7 | 24.2 | 19.4 |
| 277 | Roadside | Passive | 99.7 | 99.7 | 34.7 | 29.2 | 27.6 | 26.0 | 20.3 |
| 278 | Roadside | Passive | 99.7 | 99.7 | 35.2 | 26.6 | 27.9 | 25.0 | 20.2 |
| 279 | Roadside | Passive | 92.3 | 92.3 | 47.3 | 41.3 | 37.5 | 34.0 | 22.6 |
| 280 | Roadside | Passive | 99.7 | 99.7 | 38.7 | 31.3 | 31.6 | 31.1 | 24.1 |
| 281 | Roadside | Passive | 89.8 | 89.8 | 34.8 | 28.5 | 27.6 | 32.1 | 23.2 |
| 282 | Roadside | Passive | 92.3 | 92.3 | 33.5 | 28.3 | 25.9 | 32.8 | 25.9 |
| 284 | Roadside | Passive | 91.8 | 91.8 | 30.5 | 26.1 | 25.0 | 22.5 | 19.2 |
| 285 | Roadside | Passive | 92.0 | 92.0 | 31.5 | 26.7 | 26.5 | 26.2 | 20.2 |
| 286 | Roadside | Passive | 99.7 | 99.7 | 32.3 | 26.9 | 26.6 | 24.3 | 19.4 |
| 287 | Roadside | Passive | 72.5 | 72.5 | 28.8 | 24.5 | 24.0 | 23.7 | 17.4 |
| 288 | Roadside | Passive | 99.7 | 99.7 | 30.2 | 23.6 | 26.8 | 27.2 | 18.6 |
| 289 | Roadside | Passive | 99.7 | 99.7 | 33.0 | 27.7 | 26.9 | 27.3 | 20.2 |
| 291 | Roadside | Passive | 92.3 | 92.3 | 41.1 | 35.6 | 32.3 | 33.2 | 23.3 |
| 295 | Roadside | Passive | 99.7 | 99.7 | 31.7 | 26.8 | 23.7 | 27.1 | 19.5 |
| 296 | Roadside | Passive | 84.6 | 84.6 | 36.3 | 31.3 | 28.2 | 27.6 | 19.5 |
| 323 | Roadside | Passive | 74.7 | 74.7 | 34.3 | 29.6 | 26.4 | 27.3 | 19.1 |
| 331 | Roadside | Passive | 99.7 | 99.7 | 36.3 | 30.6 | 32.5 | 30.0 | 21.2 |
| 334 | Roadside | Passive | 99.7 | 99.7 | 31.7 | 25.8 | 27.2 | 27.2 | 18.2 |
| 335 | Roadside | Passive | 90.1 | 90.1 | 29.6 | 24.1 | 25.4 | 24.8 | 17.5 |
| 336 | Roadside | Passive | 99.7 | 99.7 | 36.6 | 30.4 | 30.0 | 28.4 | 21.3 |
| 337 | Roadside | Passive | 90.1 | 90.1 | 37.1 | 31.6 | 29.1 | 35.6 | 25.9 |

| Site ID | Site Type | Monitoring Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2020 (%) ⁽²⁾ | 2016 | 2017 | 2018 | 2019 | 2020 |
|---------|-----------|-----------------|---|--|-------------|-------------|-------------|------|------|
| 338 | Roadside | Passive | 82.1 | 82.1 | 36.0 | 29.6 | 29.9 | 28.7 | 20.9 |
| 339 | Roadside | Passive | 82.7 | 82.7 | 37.8 | 30.9 | 33.1 | 32.7 | 23.4 |
| 340 | Roadside | Passive | 99.7 | 99.7 | 49.0 | 41.0 | 41.3 | 39.6 | 26.3 |
| 341 | Roadside | Passive | 99.7 | 99.7 | 40.3 | 32.6 | 31.0 | 34.8 | 25.1 |
| 342 | Roadside | Passive | 92.0 | 92.0 | 34.7 | 27.6 | 28.7 | 34.4 | 22.4 |
| 343 | Roadside | Passive | 99.7 | 99.7 | 35.2 | 29.2 | 26.1 | 26.0 | 18.2 |
| 344 | Roadside | Passive | 30.5 | 30.5 | 31.1 | 24.9 | 24.0 | 30.9 | 22.0 |
| 345 | Roadside | Passive | 22.8 | 22.8 | 30.2 | 24.1 | 25.1 | 30.6 | 19.8 |
| 346 | Roadside | Passive | 67.3 | 67.3 | 34.3 | 28.3 | 29.8 | 28.8 | 18.5 |
| 347 | Roadside | Passive | 99.7 | 99.7 | 36.3 | 27.5 | 25.7 | 24.1 | 17.8 |
| 348 | Roadside | Passive | 99.7 | 99.7 | 36.0 | 28.7 | 28.0 | 27.0 | 19.8 |
| 349 | Roadside | Passive | 99.7 | 99.7 | 35.7 | 28.8 | 26.8 | 25.8 | 19.4 |
| 350 | Roadside | Passive | 99.7 | 99.7 | 39.5 | 33.2 | 31.1 | 28.8 | 23.4 |
| 351 | Roadside | Passive | 7.7 | 7.7 | 27.9 | 24.3 | 27.3 | 21.5 | - |
| 352 | Roadside | Passive | 7.7 | 7.7 | 29.5 | 24.1 | 29.8 | - | - |
| 356 | Roadside | Passive | 99.7 | 99.7 | 31.5 | 25.0 | 27.5 | 24.5 | 17.3 |
| 358 | Roadside | Passive | 73.1 | 73.1 | 30.1 | 24.1 | 23.4 | 23.3 | - |
| 362 | Roadside | Passive | 99.7 | 99.7 | 42.2 | 35.1 | 34.3 | 31.4 | 19.8 |
| 363 | Roadside | Passive | 67.9 | 67.9 | 35.4 | 28.4 | 27.0 | 26.5 | 14.9 |
| 364 | Roadside | Passive | 99.7 | 99.7 | 39.5 | 32.6 | 32.7 | 30.0 | 19.3 |
| 365 | Roadside | Passive | 57.7 | 57.7 | 31.9 | 23.2 | 27.5 | 22.8 | - |
| 367 | Roadside | Passive | 65.4 | 65.4 | 32.2 | 28.8 | 28.2 | 25.1 | - |
| 373 | Roadside | Passive | 99.7 | 99.7 | 34.3 | 28.5 | 27.3 | 25.2 | 18.4 |
| 375 | Roadside | Passive | 99.7 | 99.7 | 18.2 | 14.7 | 14.4 | 13.4 | 11.2 |
| 376 | Roadside | Passive | 99.7 | 99.7 | 30.4 | 25.0 | 24.8 | 23.6 | 18.8 |
| 377 | Roadside | Passive | 92.0 | 92.0 | 35.0 | 29.9 | 28.2 | 26.8 | 20.9 |
| 385 | Roadside | Passive | 99.7 | 99.7 | 25.1 | 21.8 | 20.6 | 21.0 | 16.1 |
| 386 | Roadside | Passive | 90.1 | 90.1 | 26.7 | 22.9 | 22.3 | 24.8 | 17.5 |
| 387 | Roadside | Passive | 30.5 | 30.5 | 19.8 | 18.1 | 16.6 | 16.6 | 12.4 |
| 388 | Roadside | Passive | 99.7 | 99.7 | 18.7 | 17.2 | 16.0 | 16.2 | 11.1 |
| 389 | Roadside | Passive | 30.5 | 30.5 | 46.1 | 38.4 | 35.6 | 36.4 | 23.7 |
| 390 | Roadside | Passive | 99.7 | 99.7 | 37.0 | 30.8 | 29.7 | 27.4 | 20.7 |
| 391 | Roadside | Passive | 80.2 | 80.2 | 27.0 | 24.3 | 22.4 | 24.2 | 18.6 |
| 393 | Roadside | Passive | 30.5 | 30.5 | 16.7 | 14.3 | 12.8 | 15.3 | 11.4 |
| 394 | Roadside | Passive | 99.7 | 99.7 | 16.8 | 16.2 | 14.0 | 14.4 | 9.9 |
| 395 | Roadside | Passive | 30.5 | 30.5 | 17.9 | 15.8 | 15.1 | 15.0 | 10.9 |

| Site ID | Site Type | Monitoring Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2020 (%) ⁽²⁾ | 2016 | 2017 | 2018 | 2019 | 2020 |
|---------|-----------|-----------------|---|--|-------------|------|------|------|------|
| 396 | Roadside | Passive | 99.7 | 99.7 | 21.0 | 18.4 | 16.2 | 17.0 | 11.5 |
| 397 | Roadside | Passive | 30.5 | 30.5 | - | 14.3 | 13.3 | 18.4 | 14.6 |
| 398 | Roadside | Passive | 74.5 | 74.5 | - | 11.1 | 10.6 | 16.0 | 13.3 |
| 399 | Roadside | Passive | 89.8 | 89.8 | - | 17.5 | 19.1 | 26.6 | 18.4 |
| 400 | Roadside | Passive | 30.5 | 30.5 | - | 20.8 | 18.9 | 19.7 | 16.9 |
| 401 | Roadside | Passive | 99.7 | 99.7 | - | 22.2 | 21.5 | 23.9 | 18.7 |
| 403 | Roadside | Passive | 82.4 | 82.4 | - | 32.1 | 29.6 | 30.0 | 19.8 |
| 404 | Roadside | Passive | 99.7 | 99.7 | - | 19.1 | 19.6 | 25.7 | 18.2 |
| 405 | Roadside | Passive | 30.5 | 30.5 | - | 10.1 | 11.3 | 14.5 | 10.4 |
| 406 | Roadside | Passive | 99.7 | 99.7 | - | 33.5 | 30.9 | 29.1 | 26.4 |
| 407 | Roadside | Passive | 99.7 | 99.7 | - | 20.8 | 19.4 | 18.3 | 14.5 |
| 408 | Roadside | Passive | 99.7 | 99.7 | 40.4 | 35.9 | 30.7 | 32.2 | 22.1 |
| 410 | Roadside | Passive | 23.1 | 23.1 | - | 18.7 | 23.3 | - | 19.3 |
| 412 | Roadside | Passive | 92.0 | 92.0 | - | 21.8 | 21.5 | 21.1 | 17.1 |
| 413 | Roadside | Passive | 99.7 | 99.7 | - | 24.4 | 24.3 | 23.8 | 17.9 |
| 414 | Roadside | Passive | 30.5 | 30.5 | - | - | 20.3 | 17.4 | 13.3 |
| 415 | Roadside | Passive | 99.7 | 99.7 | - | - | 29.6 | 25.9 | 21.1 |
| 416 | Roadside | Passive | 91.8 | 91.8 | - | - | 20.3 | 18.2 | 14.9 |
| 417 | Roadside | Passive | 99.7 | 99.7 | - | - | 24.5 | 22.7 | 16.8 |
| 418 | Roadside | Passive | 57.4 | 57.4 | - | - | 24.6 | 21.0 | 17.8 |
| 419 | Roadside | Passive | 74.2 | 74.2 | - | - | 24.4 | 22.9 | 17.9 |
| 420 | Roadside | Passive | 65.4 | 65.4 | - | - | 33.4 | 13.2 | - |
| 421 | Roadside | Passive | 30.5 | 30.5 | - | - | - | 14.2 | 10.9 |
| 422 | Roadside | Passive | 99.7 | 99.7 | - | - | 18.1 | 16.9 | 12.3 |
| 423 | Roadside | Passive | 99.7 | 99.7 | - | - | 13.6 | 11.6 | 9.4 |
| 424 | Roadside | Passive | 90.1 | 90.1 | - | - | 23.3 | 20.5 | 16.3 |
| 425 | Roadside | Passive | 99.7 | 99.7 | - | - | 24.1 | 25.9 | 18.7 |
| 426 | Roadside | Passive | 99.7 | 99.7 | - | - | - | 33.1 | 26.0 |
| 427 | Roadside | Passive | 99.7 | 99.7 | - | - | - | 37.2 | 30.0 |
| 428 | Roadside | Passive | 99.7 | 99.7 | - | - | - | 12.7 | 9.7 |
| 429 | Roadside | Passive | 75.0 | 75.0 | - | - | - | 18.3 | 13.4 |
| 430 | Roadside | Passive | 99.7 | 99.7 | - | - | - | 12.1 | 10.0 |
| 431 | Roadside | Passive | 99.7 | 99.7 | - | - | - | 14.0 | 10.6 |
| 432 | Roadside | Passive | 89.8 | 89.8 | - | - | - | 17.6 | 13.7 |
| 433 | Roadside | Passive | 99.7 | 99.7 | - | - | - | 18.9 | 14.4 |
| 434 | Roadside | Passive | 99.7 | 99.7 | - | - | - | 23.4 | 18.0 |

| Site ID | Site Type | Monitoring Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2020 (%) ⁽²⁾ | 2016 | 2017 | 2018 | 2019 | 2020 |
|---------|-----------|-----------------|---|--|------|------|------|------|------|
| 435 | Roadside | Passive | 92.0 | 92.0 | - | - | - | 18.4 | 12.0 |
| 436 | Roadside | Passive | 99.7 | 99.7 | - | - | - | 17.8 | 14.4 |
| 437 | Roadside | Passive | 99.7 | 99.7 | - | - | - | 27.0 | 18.4 |
| 438 | Roadside | Passive | 92.3 | 92.3 | - | - | - | 21.3 | 15.8 |
| 439 | Roadside | Passive | 99.7 | 99.7 | - | - | - | 20.0 | 13.7 |
| 440 | Roadside | Passive | 65.1 | 65.1 | - | - | - | 19.7 | 13.6 |
| 441 | Roadside | Passive | 90.1 | 90.1 | - | - | - | 28.4 | 18.3 |
| 442 | Roadside | Passive | 99.7 | 99.7 | - | - | - | 22.7 | 16.9 |
| 443 | Roadside | Passive | 99.7 | 99.7 | - | - | - | 34.2 | - |
| 444 | Roadside | Passive | 91.8 | 91.8 | - | - | - | 25.5 | 20.1 |
| 445 | Roadside | Passive | 91.8 | 91.8 | - | - | - | 35.9 | 24.2 |
| 446 | Roadside | Passive | 91.8 | 91.8 | - | - | - | 32.9 | 23.5 |
| 447 | Roadside | Passive | 99.7 | 99.7 | - | - | - | 19.9 | 13.7 |
| 448 | Roadside | Passive | 92.0 | 92.0 | - | - | - | 24.7 | 16.8 |
| 449 | Roadside | Passive | 90.1 | 90.1 | - | - | - | 22.9 | 15.9 |
| 450 | Roadside | Passive | 90.1 | 90.1 | - | - | - | 24.5 | 18.6 |
| 451 | Roadside | Passive | 90.1 | 90.1 | - | - | - | - | 14.1 |
| 452 | Roadside | Passive | 99.7 | 99.7 | - | - | - | - | 10.4 |
| 453 | Roadside | Passive | 92.3 | 92.3 | - | - | - | - | 6.4 |
| 454 | Roadside | Passive | 99.7 | 99.7 | - | - | - | - | 16.3 |
| 455 | Roadside | Passive | 30.5 | 30.5 | - | - | - | - | 18.1 |
| 456 | Roadside | Passive | 57.7 | 57.7 | - | - | - | - | 16.8 |
| 457 | Roadside | Passive | 84.3 | 84.3 | - | - | - | - | 13.4 |
| 458 | Roadside | Passive | 51.9 | 51.9 | - | - | - | - | 20.0 |
| 459 | Roadside | Passive | 34.3 | 34.3 | - | - | - | - | 34.2 |
| 460 | Roadside | Passive | 30.5 | 30.5 | - | - | - | - | 12.4 |

Notes:

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

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

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

- (1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.
- (2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).
- (3) Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per Boxes 7.9 and 7.10 in LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.
- (4) Concentrations that have been distance corrected

Figure 2.12 – Trends in Annual Mean NO₂ Concentrations at Automatic Monitoring Sites

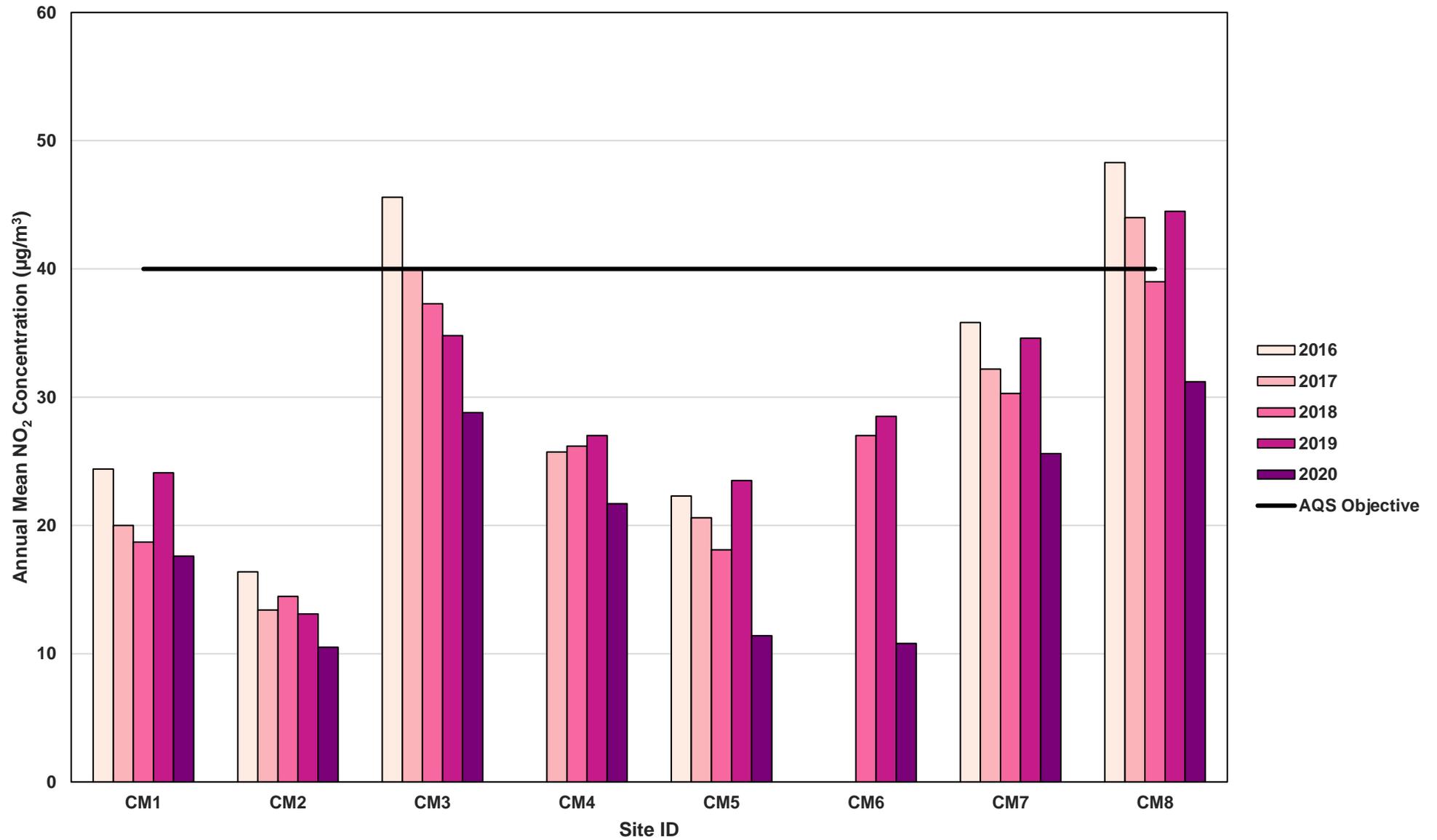


Figure 2.13 – Trends in Annual Mean NO₂ concentrations in Haford and Landore

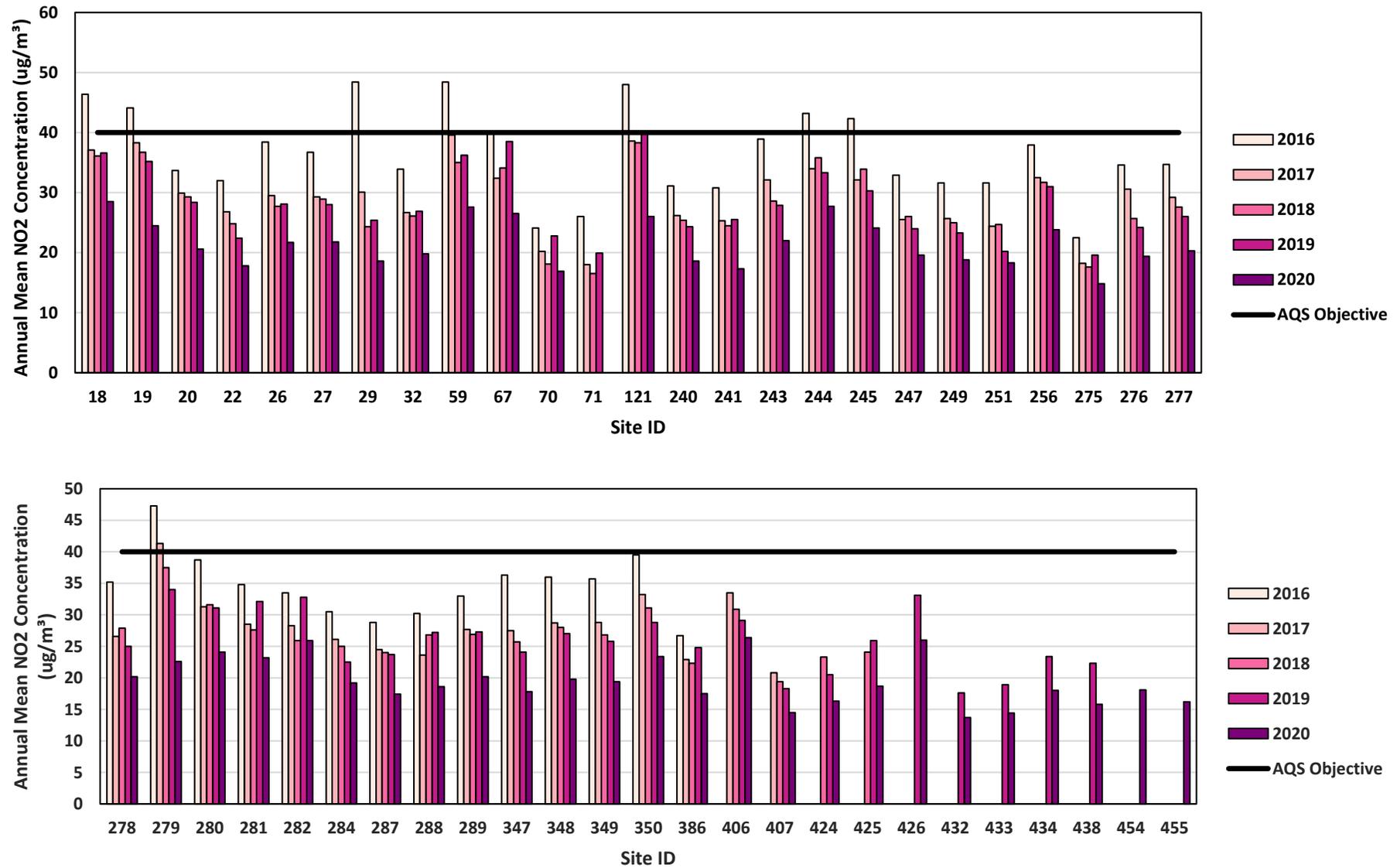


Figure 2.14 – Trends in Annual Mean NO₂ concentrations in Fforestfach

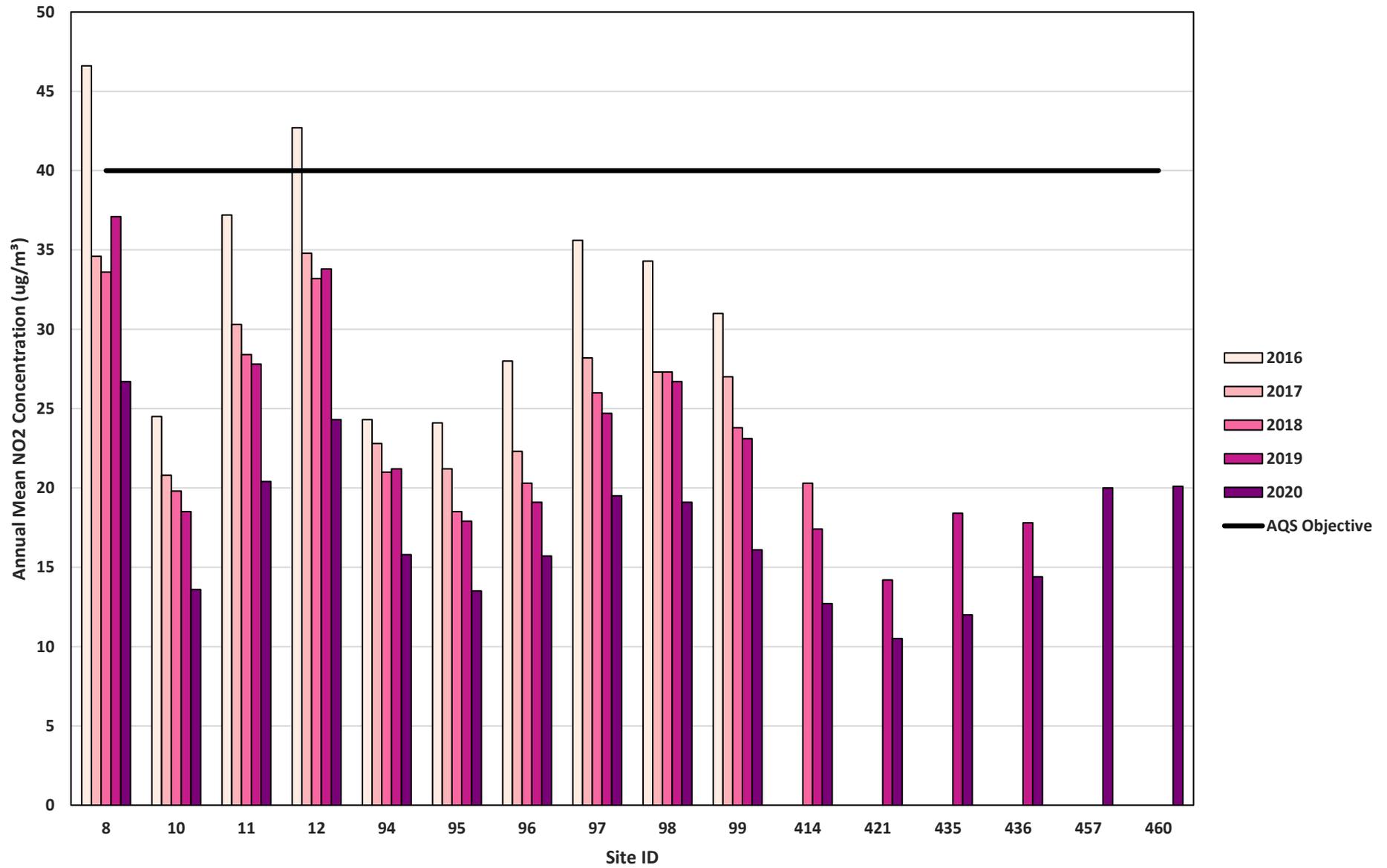


Figure 2.15 – Trends in Annual Mean NO₂ concentrations in Sketty

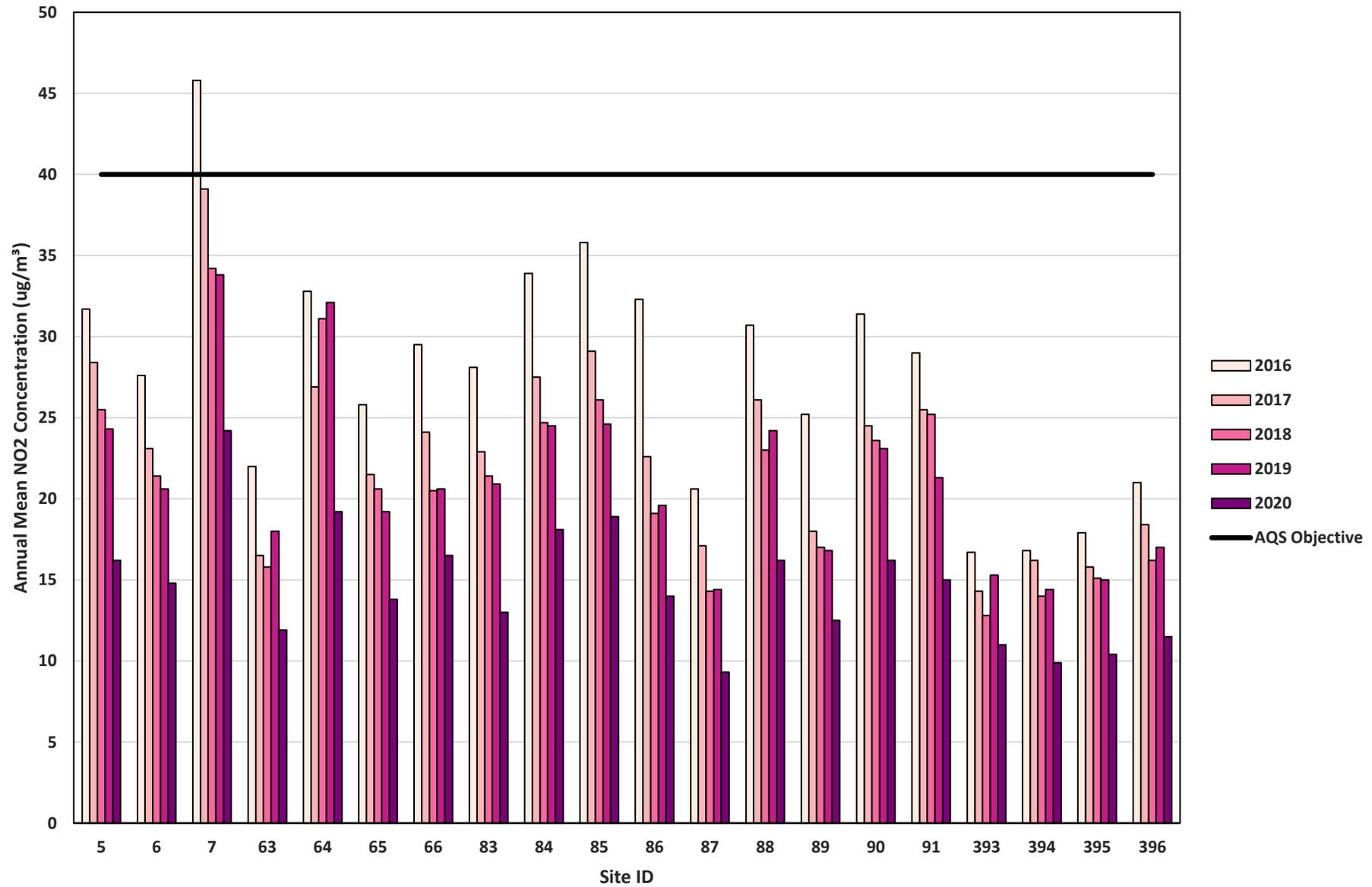


Figure 2.16 – Trends in Annual Mean NO₂ concentrations in St Thomas

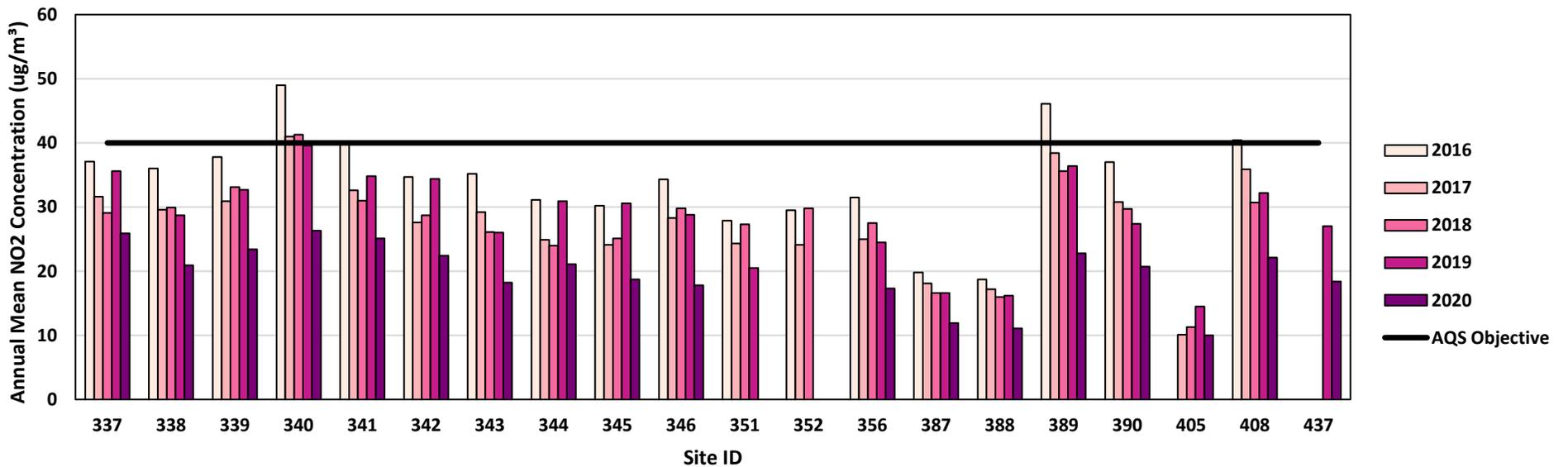
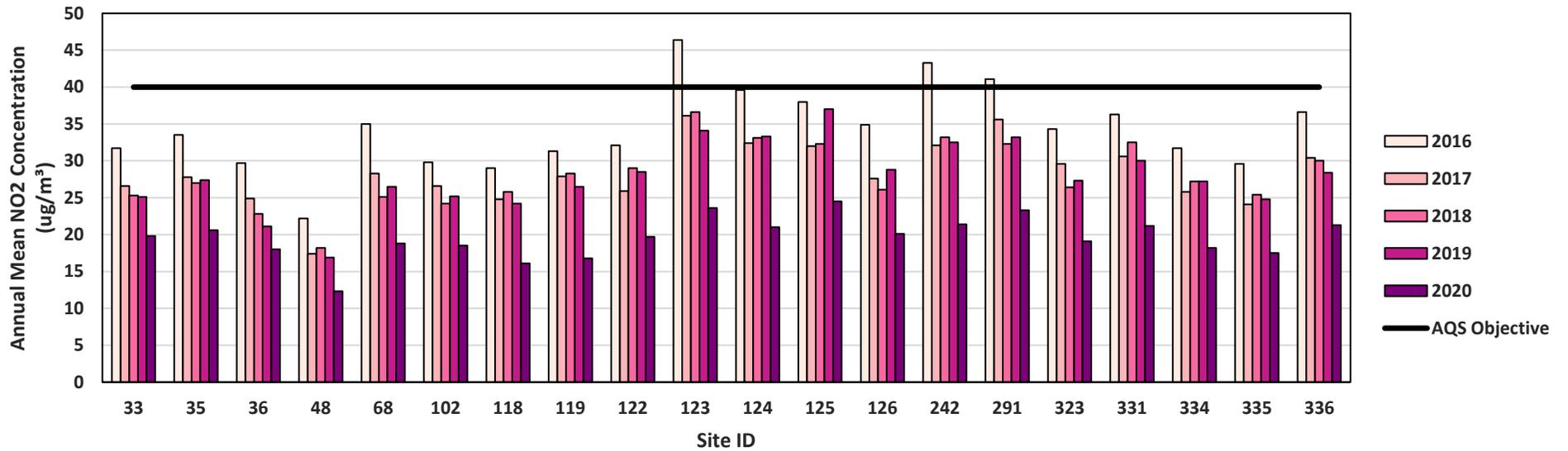


Figure 2.17 – Trends in Annual Mean NO₂ concentrations in Uploads and City Centre West

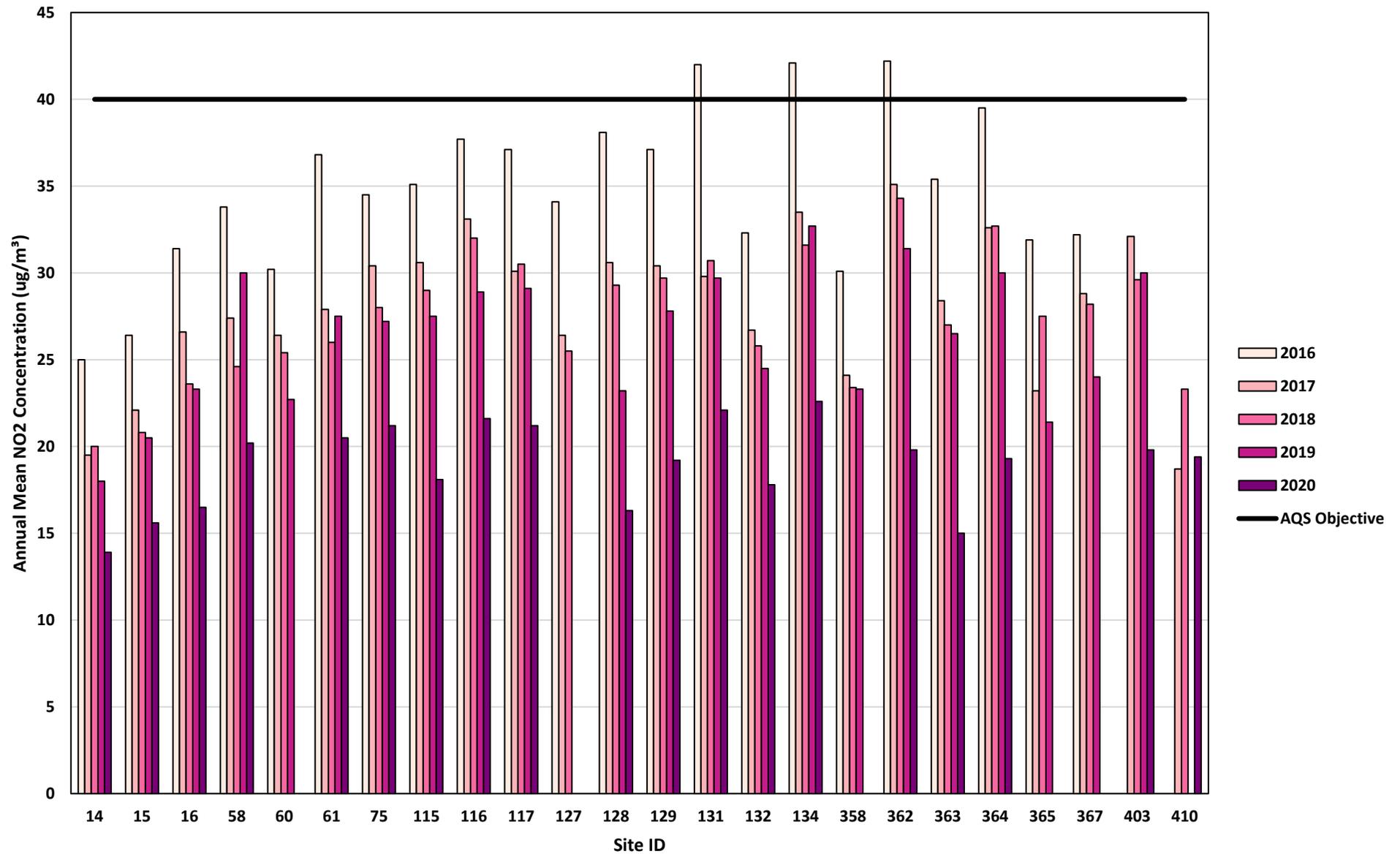


Figure 2.18 – Trends in Annual Mean NO₂ concentrations in North Swansea

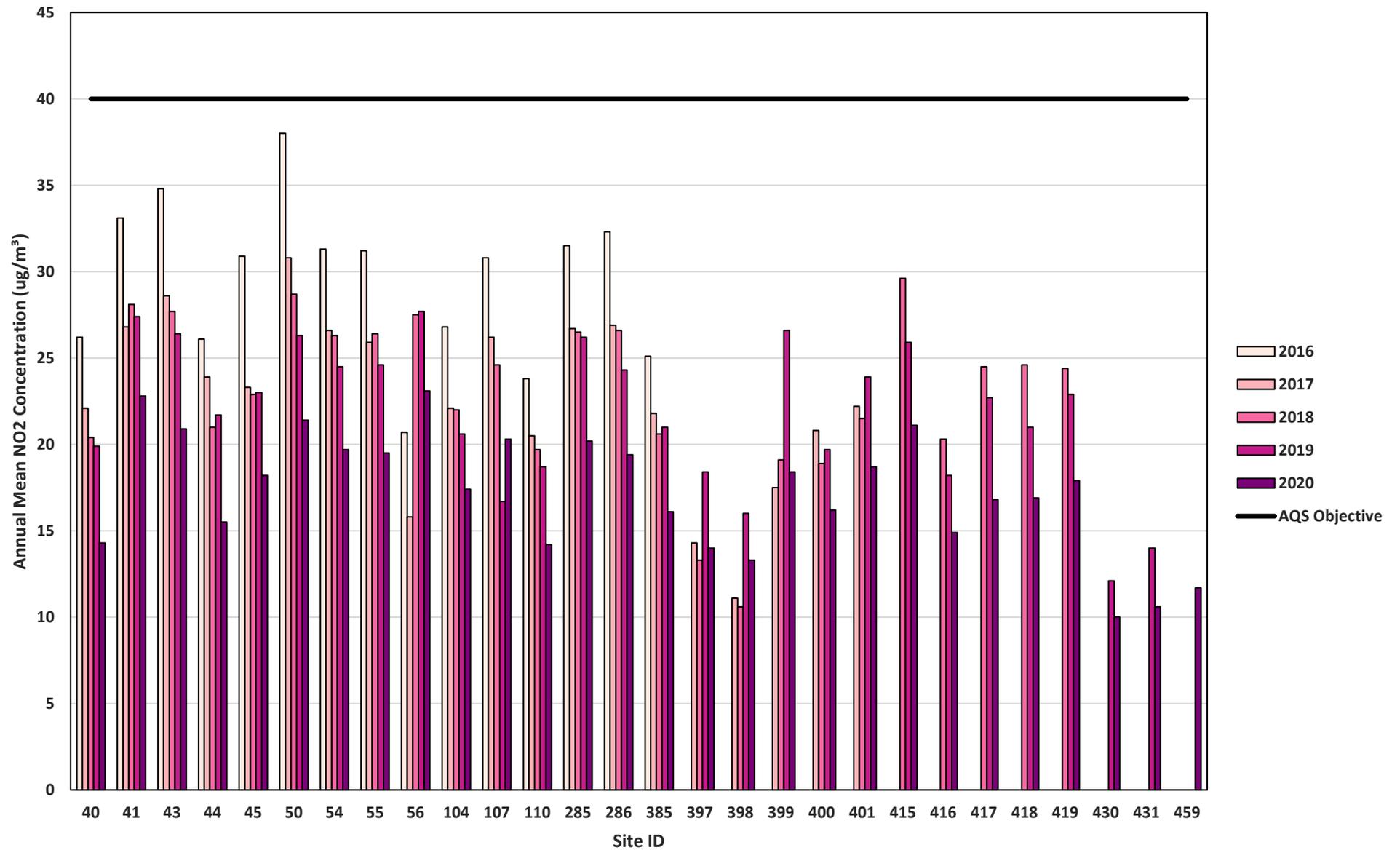


Figure 2.19 – Trends in Annual Mean NO₂ concentrations in Gorseinon and Gowerton

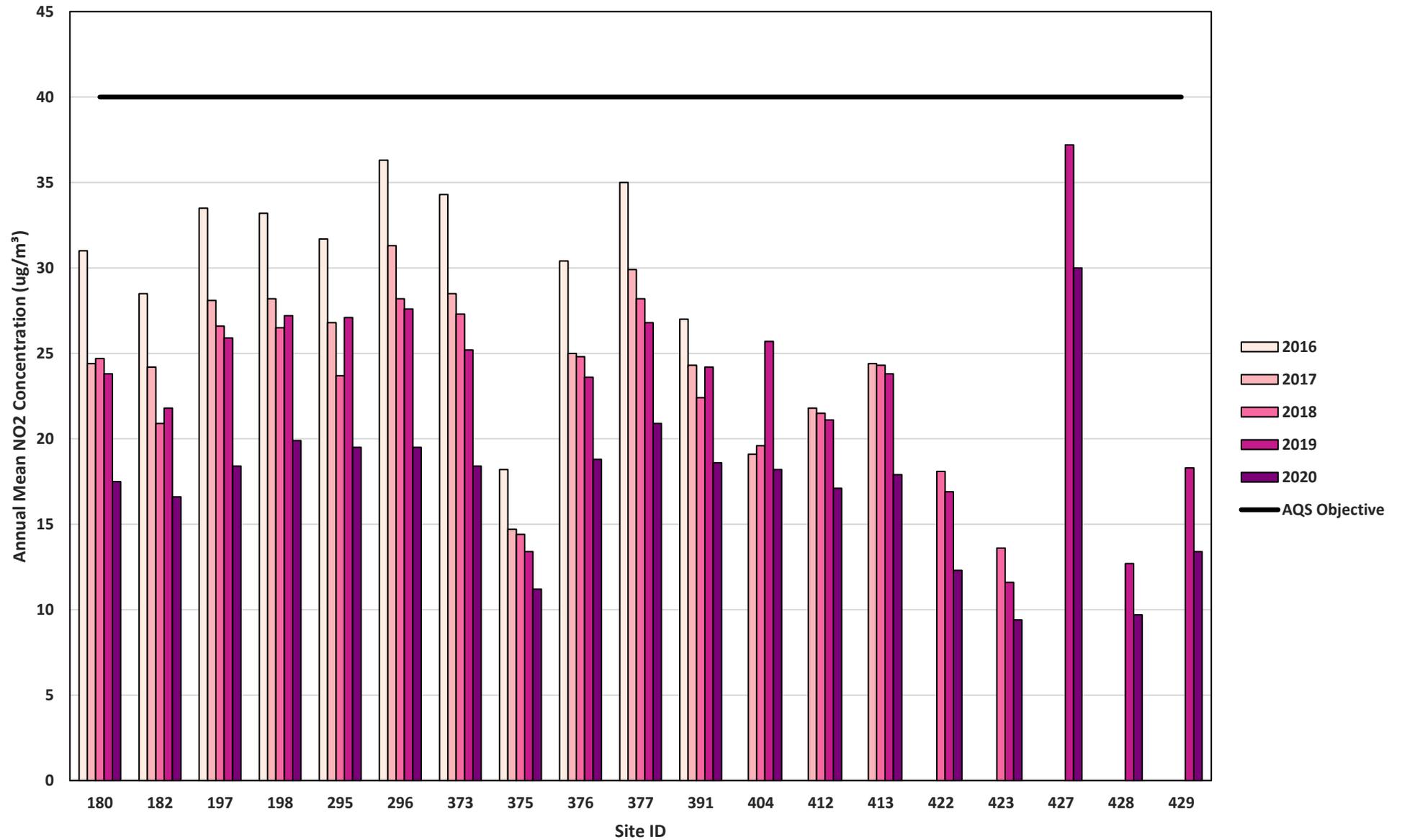


Figure 2.20 – Trends in Annual Mean NO₂ concentrations in Mumbles

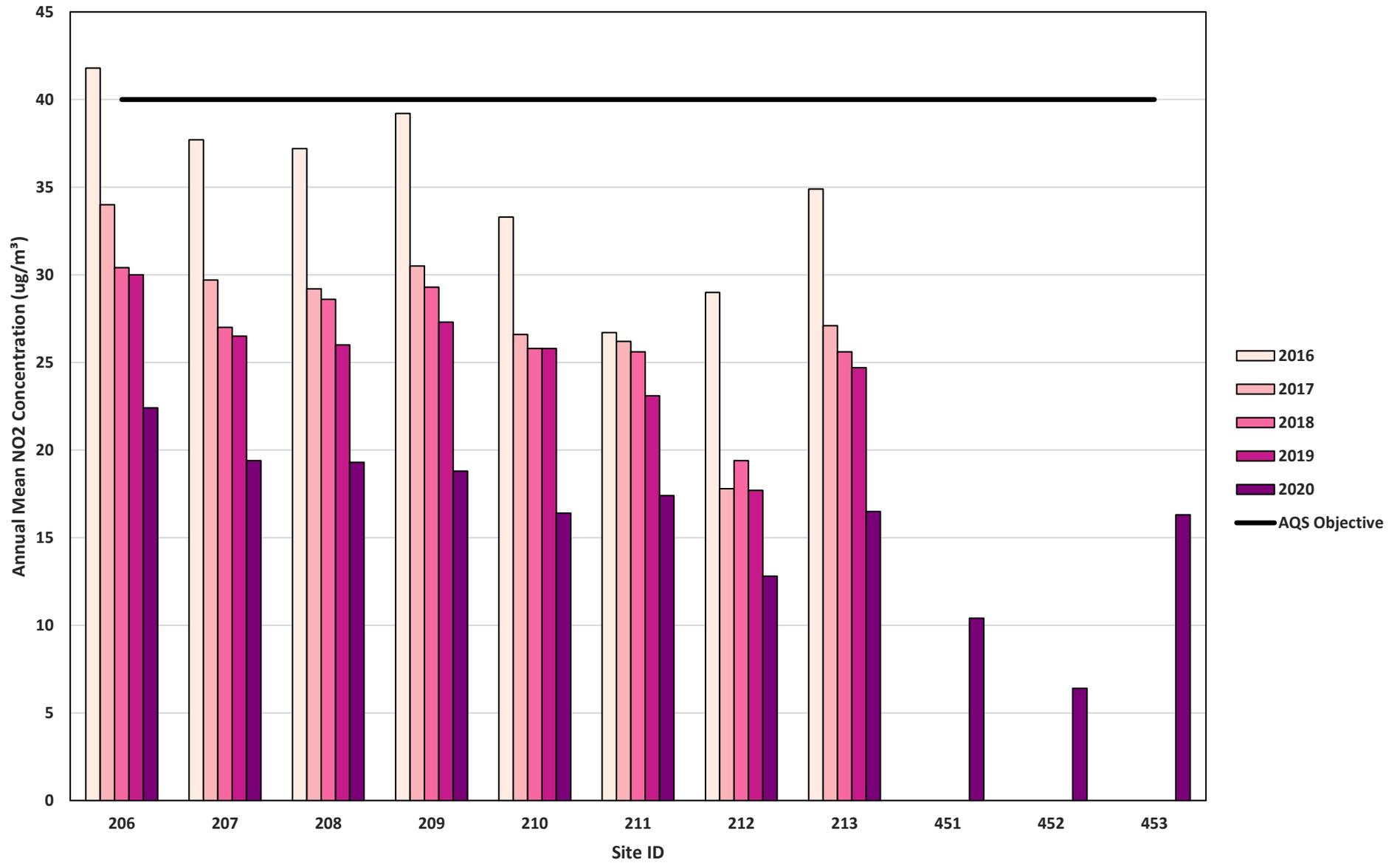


Figure 2.21 – Trends in Annual Mean NO₂ concentrations in Black Pearl

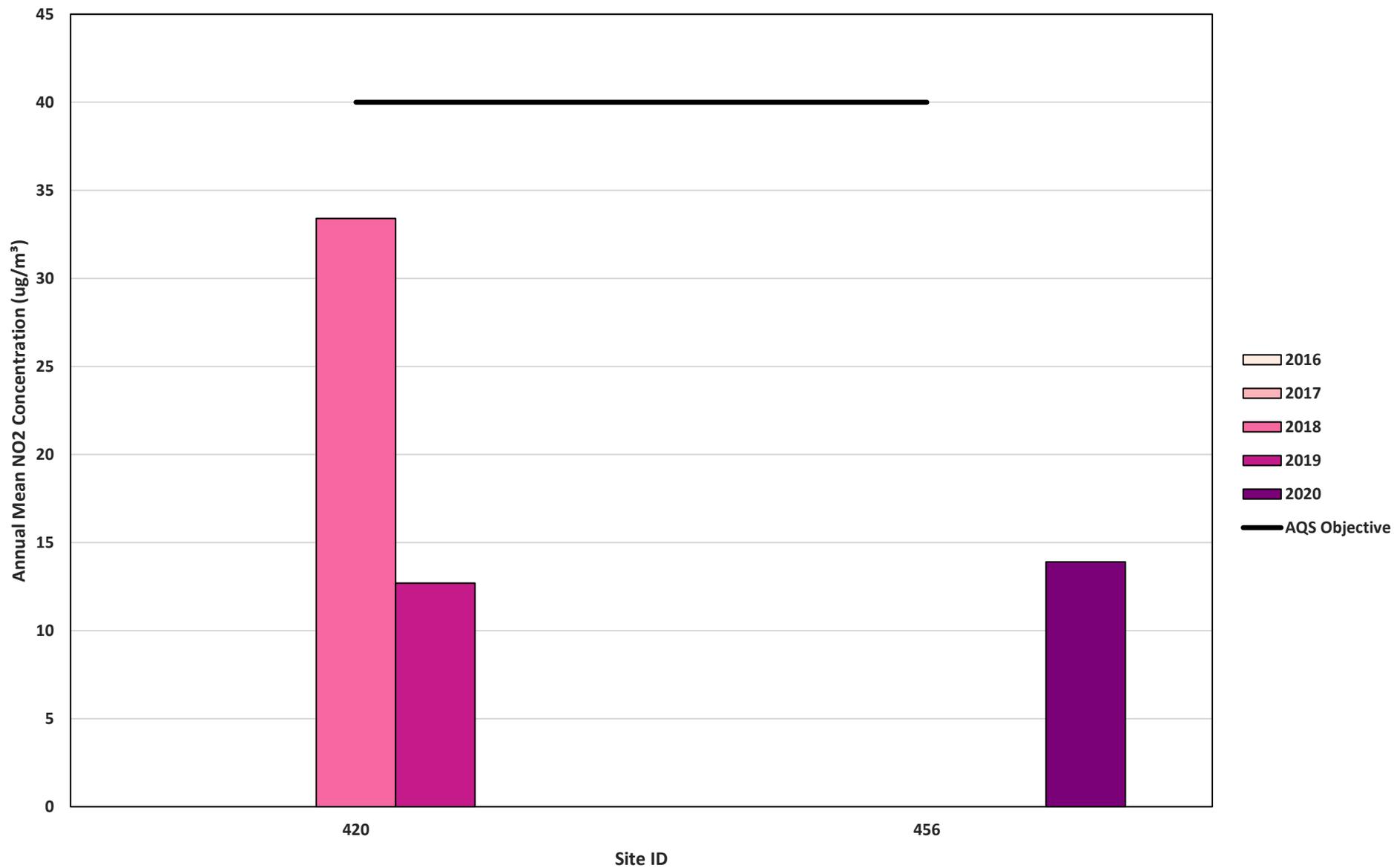


Figure 2.22 – Trends in Annual Mean NO₂ concentrations at New Diffusion Tube Sites

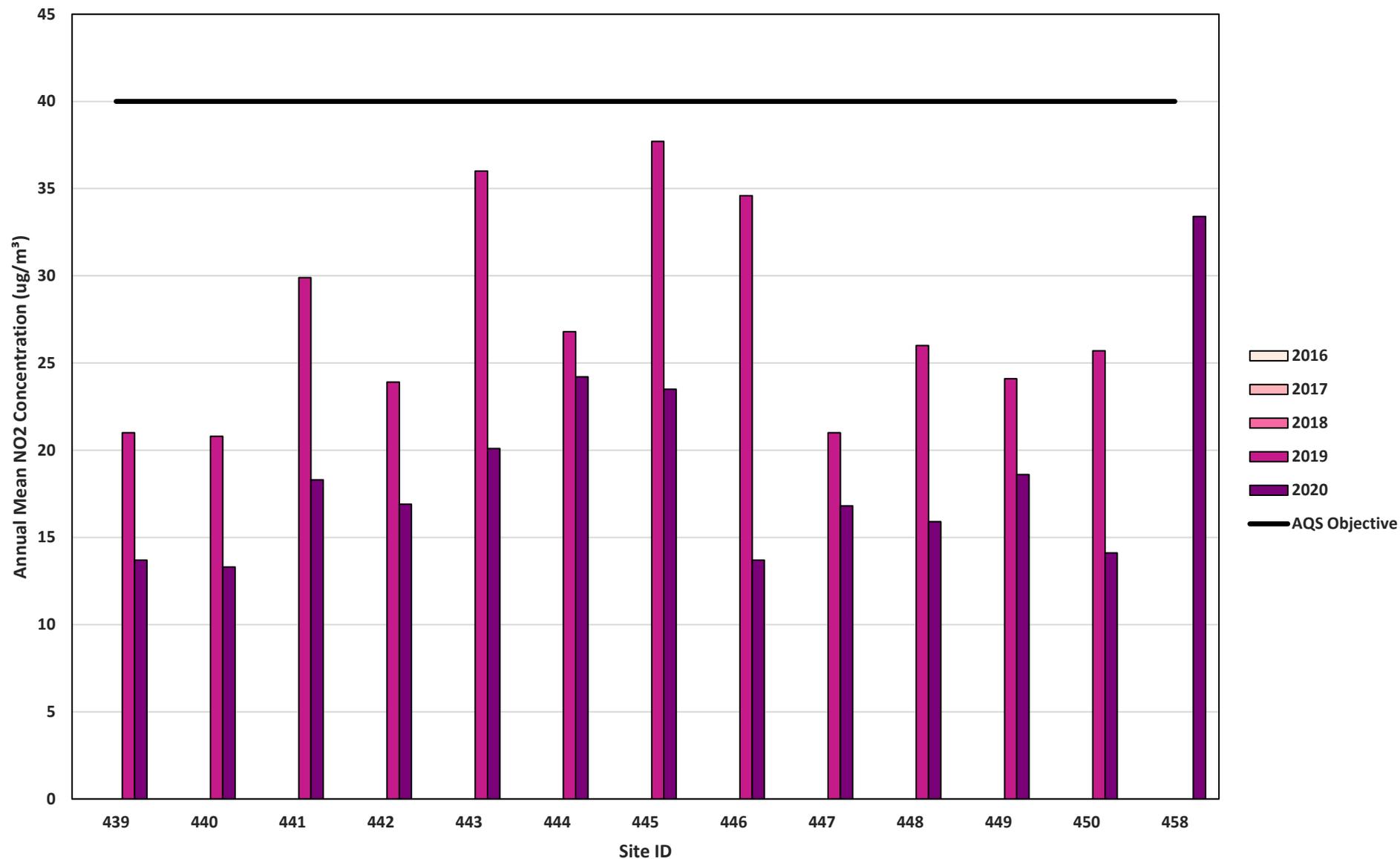


Table 2.4 – 1-Hour Mean NO₂ Monitoring Results, Number of 1-Hour Means > 200µg/m³

| Site ID | Site Type | Monitoring Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2020 (%) ⁽²⁾ | 2016 | 2017 | 2018 | 2019 | 2020 |
|---------|------------------|-----------------|---|--|------|--------------|--------------|------------|------|
| CM1 | Roadside | Automatic | 94.7 | 94.7 | 0 | 0 | 0 | 0 | 0 |
| CM2 | Roadside | Automatic | 94.8 | 94.8 | 1 | 0 | 0 | 0 | 0 |
| CM3 | Urban Background | Automatic | 97.1 | 97.1 | 0 | 0 | 0 | 0 | 0 |
| CM4 | Roadside | Automatic | 96.5 | 96.5 | 4 | 1 | 0 | 0 | 0 |
| CM5 | Roadside | Automatic | 98.0 | 98.0 | 0 | 0 | 0 | 0 | 1 |
| CM11 | Roadside | Automatic | 97.1 | 97.1 | 1 | 0 | 0 | 1 | 0 |
| CM12 | Roadside | Automatic | 95.1 | 95.1 | - | 0 (69.69) | 1 (34.60) | 0 | 0 |
| CM13 | Roadside | Automatic | 97.9 | 97.9 | - | - | 0 (35.69) | 0 (100) | 0 |

Notes:

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

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

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

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

Table 2.5 – Annual Mean PM₁₀ Monitoring Results (µg/m³)

| Site ID | Site Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2020 (%) ⁽²⁾ | 2016 | 2017 | 2018 | 2019 | 2020 |
|---------|-----------|---|--|------|------|---------------------|---------------------|---------------------|
| CM1 | Roadside | 95.9 | 95.9 | 19.1 | 18.9 | 19.7 | 18.4 | 18.3 |
| CM6 | Roadside | 81.3 | 81.3 | 12.9 | 10.6 | 9.9 ⁽³⁾ | 17.4 | 17.7 |
| CM7 | Roadside | 66.6 | 66.6 | 13.2 | 11.1 | 12.5 ⁽³⁾ | 15.1 ⁽³⁾ | 15.6 ⁽³⁾ |
| CM8 | Roadside | 73.4 | 73.4 | 15.3 | 11.4 | 14.7 ⁽³⁾ | 18.6 ⁽³⁾ | 15.9 ⁽³⁾ |
| CM9 | Roadside | 96.0 | 96.0 | 14.4 | 9.7 | 11.4 | 16.0 | 18.3 |

Notes:

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

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

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

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

(3) 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.

Figure 2.23 – Trends in Annual Mean PM₁₀ Concentrations

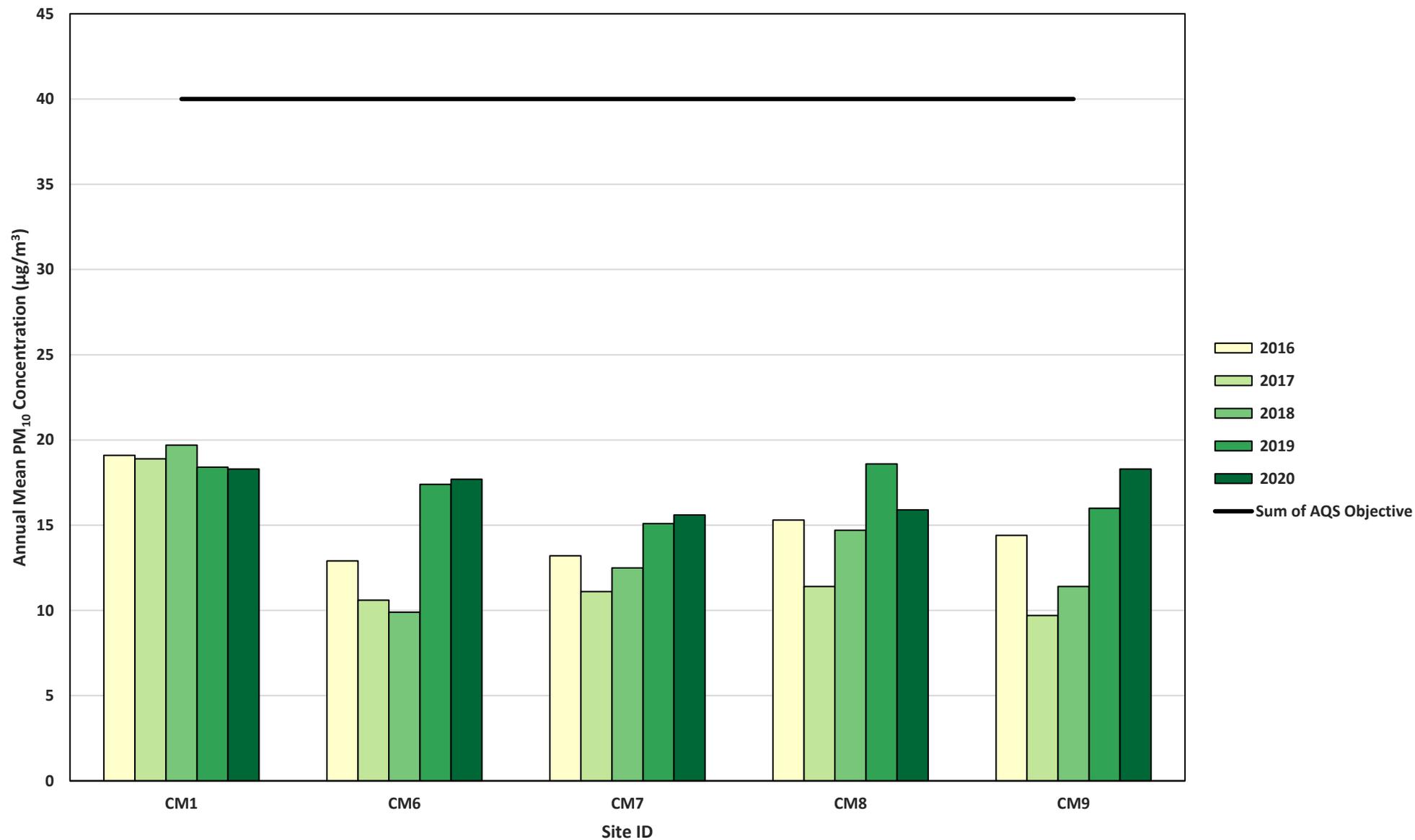


Table 2.6 – 24-Hour Mean PM₁₀ Monitoring Results, Number of PM₁₀ 24-Hour Means > 50µg/m³

| Site ID | Site Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2020 (%) ⁽²⁾ | 2016 | 2017 | 2018 | 2019 | 2020 |
|---------|-----------|---|--|------|------|-----------|----------|----------|
| CM1 | Roadside | 95.9 | 95.9 | 0 | 1 | 0 | 2 | 1 |
| CM6 | Roadside | 81.3 | 81.3 | 0 | 0 | 0 (15.03) | 0 | 1 |
| CM7 | Roadside | 66.6 | 66.6 | 0 | 0 | 0 (18.55) | 0 | 0 (25.0) |
| CM8 | Roadside | 73.4 | 73.4 | 1 | 0 | 0 (22.63) | 3 | 0 (22.4) |
| CM9 | Roadside | 96.0 | 96.0 | 0 | 0 | 0 (17.83) | 0 (22.8) | 0 |

Notes:

Exceedances of the PM₁₀ 24-hour mean objective (50µg/m³ not to be exceeded more than 35 times/year) are shown in **bold**.

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

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

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

Table 2.7 – PM_{2.5} Monitoring Results (µg/m³)

| Site ID | Site Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2020 (%) ⁽²⁾ | 2016 | 2017 | 2018 | 2019 | 2020 |
|---------|-----------|---|--|------|------|--------------------|--------------------|------|
| CM1 | Roadside | 86.3 | 86.3 | 13.4 | 14.6 | 12.9 | 9.9 | 7.9 |
| CM2 | Roadside | 98.0 | 98.0 | 10.1 | 10.0 | 10.9 | 9.3 | 11.4 |
| CM13 | Roadside | 97.8 | 97.8 | - | - | 7.3 ⁽³⁾ | 9.5 ⁽³⁾ | 10.8 |

Notes:

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

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

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

(3) All means have been “annualised” as per Boxes 7.9 and 7.10 in LAQM.TG16, valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Figure 2.24 – Trends in Annual Mean PM_{2.5} Concentrations

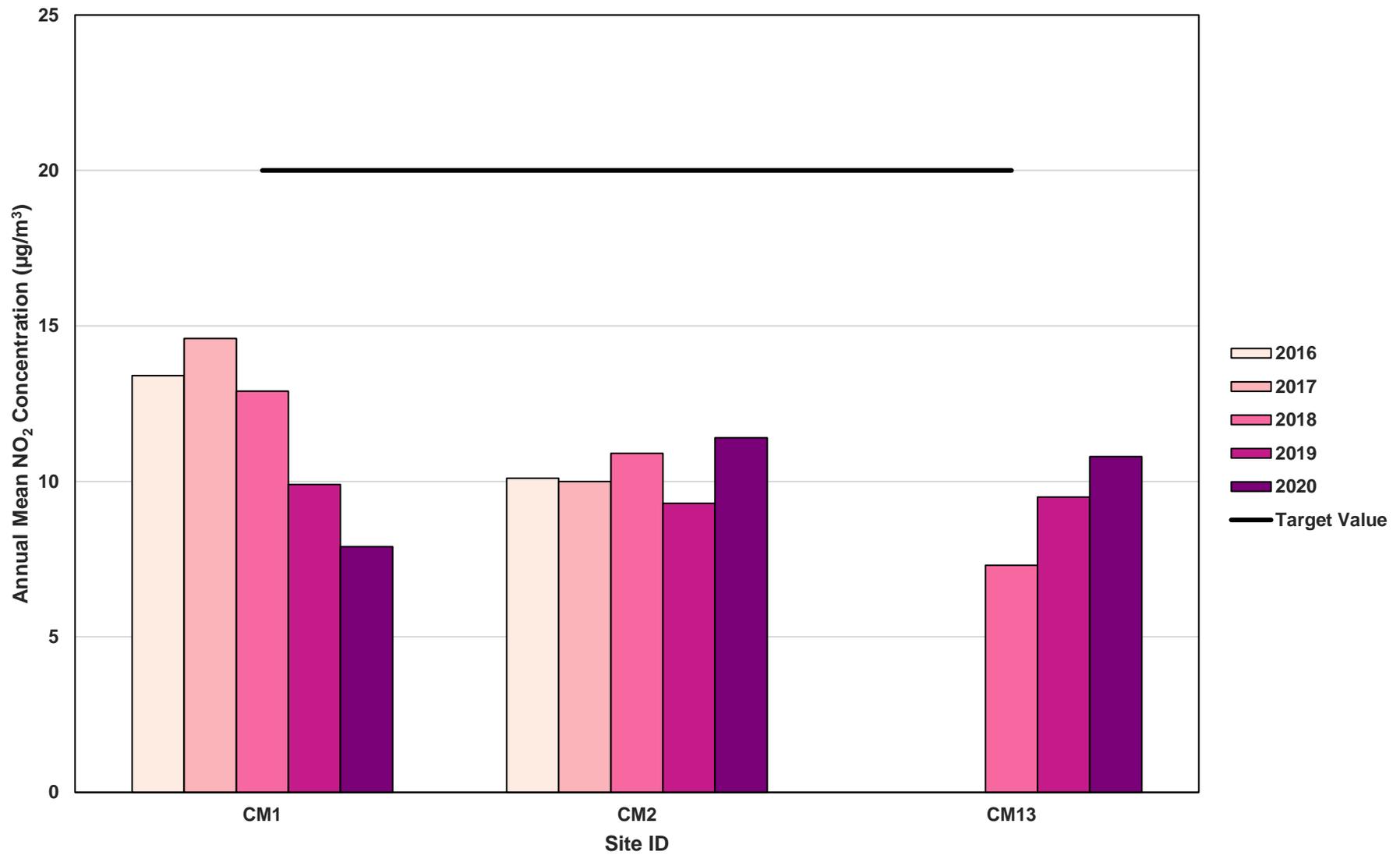


Table 2.8 – Results Automatic Ozone Monitoring, Number of 8-Hour Means > 100µg/m³

| Site ID | Site Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2021 (%) ⁽²⁾ | 2016 | 2017 | 2018 | 2019 | 2020 |
|---------|------------------|---|--|------|------|------|------|------|
| CM2 | Roadside | 52.7 | 52.7 | - | - | - | 7 | 13 |
| CM3 | Urban Background | 96.6 | 96.6 | - | - | - | 2 | 3 |
| CM4 | Roadside | 90.6 | 90.6 | - | - | - | 1 | 1 |
| CM5 | Roadside | 69.1 | 69.1 | - | - | - | 49 | 14 |

Table 2.9 – Results Automatic Sulphur Dioxide Monitoring 2020

| Site ID | Site Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2021 (%) ⁽²⁾ | 1-hour Means > 350µg/m ³ | 24-hour Means > 125µg/m ³ |
|---------|-----------|---|--|-------------------------------------|--------------------------------------|
| CM5 | Roadside | 96.6 | 96.6 | 0 | 0 |

Table 2.10 – Results Automatic Sulphur Dioxide Monitoring 2019

| Site ID | Site Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2021 (%) ⁽²⁾ | 1-hour Means > 350µg/m ³ | 24-hour Means > 125µg/m ³ |
|---------|-----------|---|--|-------------------------------------|--------------------------------------|
| CM5 | Roadside | 99.4 | 99.4 | 0 | 0 |

2.3 Comparison of 2020 Monitoring Results with Previous Years and the Air Quality Objectives

2.3.1 Nitrogen Dioxide (NO₂)

During 2020, no exceedances of the annual mean NO₂ AQS objective of 40µg/m³ were reported at any of the monitoring locations within Swansea. The maximum concentration was 34.2 µg/m³, reported at Site 459 which is located along Neath Road, outside of the Swansea AQMA.

Across all monitoring locations, the annual mean NO₂ concentrations had decreased from that reported in 2019. An average decrease of 0.2 µg/m³ is reported, and a maximum decrease of 7.9 µg/m³ at Site 107 located along Peniel Green Road in 2019. An average decrease of 6.8 µg/m³ is reported in 2021, this decrease across all monitoring locations is believed to be a result of the COVID-19 pandemic, whereby the UK and Welsh Governments issued guidelines to work from home and stay local, alongside enforcing lockdowns. Traffic levels were observed to have decreased across all urban areas within the UK, and consequently NO_x/NO₂ emissions would have decreased. Additional information on this can be found in Appendix E. It should be noted that the long-term impacts of COVID-19 on air quality conditions are not fully understood, and it is currently unknown whether 2020 will be an anomalous year.

Regardless of 2020 monitoring data, concentrations within the Swansea AQMA have been complaint since 2016.

No diffusion tube monitoring sites reported an annual mean NO₂ concentration greater than 60µg/m³, therefore in accordance with LAQM.TG(22) it is not believed that there have been any exceedances of the 1-hour NO₂ AQS objective in these areas. Additionally, the automatic monitoring locations in Swansea reported one exceedance of the 1-hour NO₂ concentrations greater than 200µg/m³ at CM5 in 2020 and at CM11 in 2019.

As all annual mean NO₂ concentrations reported below 36 µg/m³, fall-off with distance correction calculations have not been carried out for the 2020 monitoring year. The 2019 monitoring period reported 8 sites within 10% of the NO₂ AQS objective (8, 18, 59, 67, 121, 125, 340, 429 and 445), all sites under distance correction calculation reduced below 10% of the NO₂ AQS objective. No monitoring site had a data capture between 25-75%, annualisation has not been carried out, in accordance with LAQM.TG(22).

2.3.2 Particulate Matter (PM₁₀)

Annual mean concentrations of PM₁₀ reported at the automatic monitoring locations in Swansea are - well below the AQS objective of 40µg/m³ in 2020 and 2019. Overall, the annual mean concentration remains relatively consistent to what has previously been reported.

In regard to the 24-hour mean AQS objective whereby there should be no more than 35 24-hour mean concentrations greater than 50µg/m³, there were only two monitors that reported one exceedance in 2020. These were at sites CM1 and CM6, therefore well below the AQS objective.

Data capture at two automatic sites recorded less than 75% data capture, therefore annualisation was required to be carried out, in accordance with LAQM.TG(22) for CM7 and 8.

2.3.3 Particulate Matter (PM_{2.5})

The annual mean PM_{2.5} concentration reported at the automatic monitoring locations in Swansea in 2020 and 2019 were all low. There is no LAQM air quality objective for PM_{2.5}, however this concentration continues to remain low and consistent with what has previously been reported.

2.3.4 Other Pollutants Monitored (Ozone)

The St Thomas automatic monitor recorded no exceedances of the SO₂ AQS objectives in 2020 and 2019.

The maximum number of 8-hour mean O₃ concentrations greater than 100 µg/m³ reported at the three automatic monitoring locations in Swansea in 2020 was 14 at CM5, and 49 at CM5 in 2019. There is no LAQM air quality objective for O₃, CM4 does not exceed the UK National air quality objective of 100µg/m³ not to be exceeded more than 10 times a year, but CM5 exceeds the UK objective.

2.4 Summary of Compliance with AQS Objectives as of 2020

Swansea Council has examined the results from monitoring in the Swansea. Concentrations are all below the Objectives, therefore no further action is required.

3 New Local Developments

Table 3.1.1 to show the planning applications received in 2020.

Table 3.1 – Planning Applications

| App Ref No. | Location | Description |
|---------------|--|--|
| 2020/0097/FUL | Land North Of Jockey Street Swansea SA1 1NS | Construction of a 328 bed high rise purpose built student accommodation with associated car parking, access and infrastructure works  2020_0097_FUL-AIR_Q UALITY_ASSESSMENT- |

3.1 Road Traffic Sources (and Other Transport)

None

3.2 Industrial / Fugitive or Uncontrolled Sources / Commercial Sources

There have been no new Industrial Installations installed since the last assessment.

There are no new potential sources of fugitive or uncontrolled particulate matter since the last assessment.

3.3 Other Sources

During bonfire night, particulate monitors in Swansea often record elevated concentrations as a result of firework displays in the city.

Figure 3.1 - Figure 3.2 shows the peaks recorded in 2020 and 2019 on bonfire night (5th November).

Figure 3.1 – Diurnal PM₁₀ Concentration on the 5th November 2020

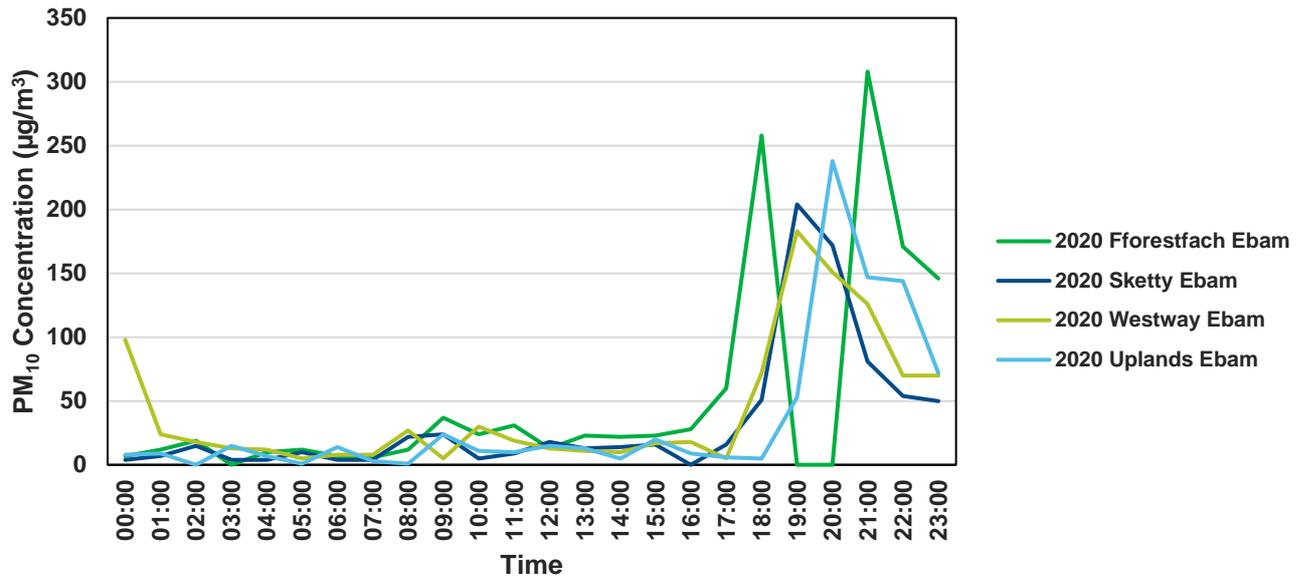
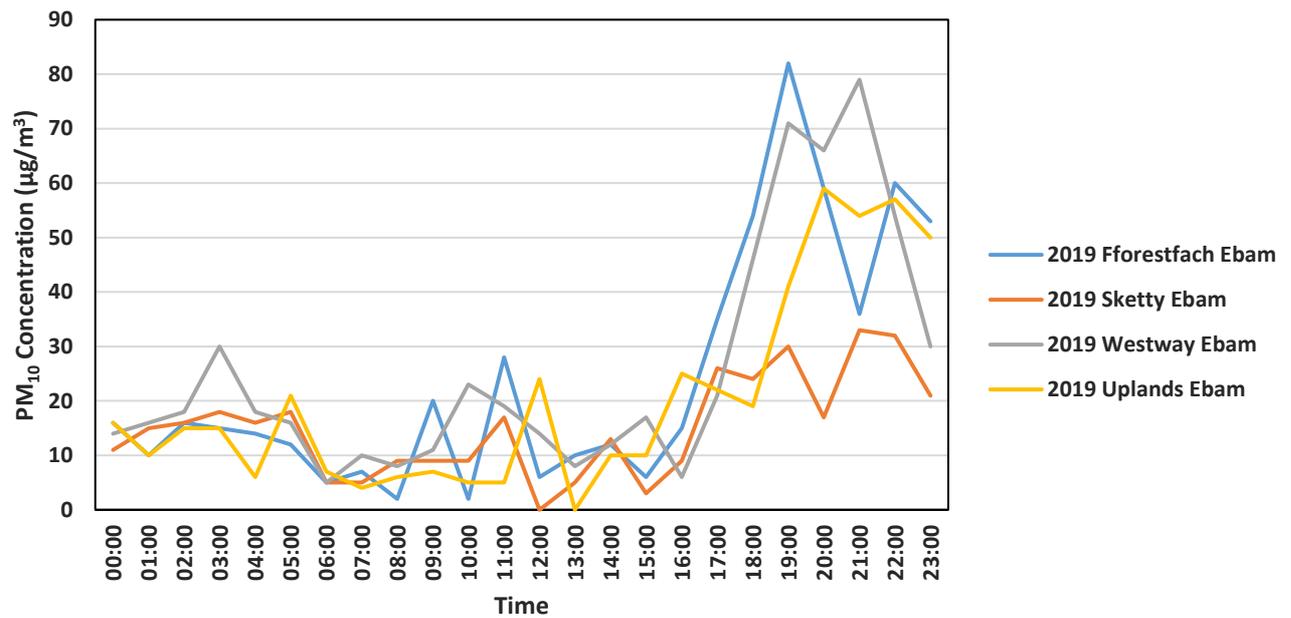


Figure 3.2 – Diurnal PM₁₀ Concentration on the 5th November 2019



4 Policies and Strategies Affecting Airborne Pollution

4.1 Local / Regional Air Quality Strategy

None

4.2 Air Quality Planning Policies

The Swansea Local Development Plan (LDP) was adopted on the 28th February 2019. Under the provisions of the Planning (Wales) Act, the LDP forms the statutory development plan for Swansea Council. It will be used as the primary material consideration to inform decisions on planning applications and development proposals.

<https://www.swansea.gov.uk/ldp>

Within the LDP are the following policies regarding Air, Noise and Light Pollution:

RP 1: Safeguarding Public Health and Natural Resources

Development will not be permitted that would result in significant risk to life; human health and wellbeing; property; controlled waters; or the natural and historic environment, particularly in respect of:

- i. Air, noise or light pollution;
- ii. Flood risk;
- iii. The quality or quantity of water resources;
- iv. Land contamination;
- v. Land instability or subsidence;
- vi. Sustainable development of mineral resources;

and vii. Sustainable waste management.

Development will not be permitted if judged to have a significant adverse effect on the integrity of any European Designated Sites, either alone or in combination with other plans or projects.

RP 2: Noise Pollution

Where development could lead to exposure to a source of noise pollution it must be demonstrated that appropriate mitigation measures will be implemented, and incorporated into the design of the development to minimise the effects on existing and future occupants. Noise sensitive developments will not be permitted unless effective and appropriate mitigation is carried out to prevent exposure to existing noise generating uses. Development will not be permitted if it would cause, or result in, a significant increase in levels of environmental noise in an identified Noise Action Planning Priority Area, or would have unacceptable impacts on an identified Quiet Area or the characteristics of tranquillity that led to the designation of a Quiet Area.

RP 3: Air and Light Pollution

Where development could lead to exposure to a source of air or light pollution it must be demonstrated that appropriate mitigation measures will be implemented, and incorporated into the design of the development to minimise the effects on existing and future occupants.

4.3 Local Transport Plans and Strategies

LAQM.TG(22) paragraphs 4.30 – 4.31 indicates guidance on the inclusion within Progress Reports to those measures within the Local Transport Plan (LTP) that specifically relate to bringing about air quality improvements. Within Wales, the LPT had been replaced with the Regional Transport Plan (RTP). The South West Wales Integrated Transport Consortium (SWWITCH) was one of the four transport consortia in Wales which were required to produce a Regional Transport Plan. The SWWITCH consortia region relevant to the City & County of Swansea included a partnership with the neighbouring authorities of Neath Port Talbot County Borough Council, Carmarthenshire County Council and Pembrokeshire County Council. Unfortunately, the Welsh Assembly withdrew funding for the consortia from the end of the 2013/14 financial year. All staff had been redeployed following the withdrawal of funding. However, the Welsh Assembly Government reverted back to LT Ps for 2015-2020. The new Local Transport Plan was adopted in January 2015. Details of the adopted plan can be found at <http://www.swansea.gov.uk/localtransportplan>

The Active Travel (Wales) Act (2013) places a legal duty upon local authorities in Wales to map, plan for and promote active travel journeys.

The Active Travel (Wales) Act is a landmark piece of Welsh legislation brought forward in 2013 which aims to make it easier for people to walk and cycle in Wales, specifically to promote walking and cycling as viable modes of transport for everyday journeys such as to the shops, work or college.

The Integrated Network Map - Approved by the Welsh Government in February 2018. This map show the routes which the Council intends to deliver over the next fifteen years (up to 2033) https://www.swansea.gov.uk/media/25625/Integrated-Network-Map-Consultation-Report/pdf/Integrated_Network_Map_Consultation_Report_-_October_2017_3.pdf.

The Existing Route Map and Integrated Network Map will be reviewed and updated periodically in conformity to the requirements of the Act.

The Council also prepares annual reports which are submitted to the Welsh Government to monitor the costs and use of Active Travel within the City & County of Swansea. These reports can also be found in the downloads section <https://www.swansea.gov.uk/activetravelact>

4.4 Active Travel Plans and Strategies

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The Council also prepares annual reports which are submitted to the Welsh Government to monitor the costs and use of Active Travel within the City & County of Swansea. These

reports can also be found in the downloads section <https://www.swansea.gov.uk/activetravelact>

4.5 Local Authorities Well-being Objectives

The Corporate Plan describes the council's vision for Swansea, our 6 key council priorities (well-being objectives and improvement objectives) and our organisation values and principles that will underpin the delivery of our priorities and overall strategy.

The Corporate Plan has been refreshed for 2018/22. This follows the production by the Public Service Board (PSB) of its Well-being Plan, a review of progress and an assessment of the evidence, looking at how we can close any gaps and further maximise our contribution to the national goals.

A summary of the Council's well-being statement was updated and incorporated into the refreshed Corporate Plan 2018/22.

Note - the Council is rolling forward its five year Corporate Plan into 2019/20 following a review of our Well-Being Objectives.

Our priorities for 2018-22 that are set out within our Corporate Plan are:

- Safeguarding people from harm - so that our citizens are free from harm and exploitation
- Improving Education and Skills - so that every child and young person in Swansea gains the skills and qualifications they need to succeed in life
- Transforming our Economy and Infrastructure - so that Swansea has a thriving mixed use City Centre and a local economy that will support the prosperity of our citizens
- Tackling Poverty - so that every person in Swansea can achieve his or her potential
- Maintaining and enhancing Swansea's natural resources and biodiversity - so that we maintain and enhance biodiversity, reduce our carbon footprint, improve our knowledge and understanding of our natural environment and benefit health and well-being
- Transformation and Future Council development - so that we and the services that we provide are sustainable and fit for the future.

- This discharges our duties under the Well-Being of Future Generations (Wales) Act 2015 and Local Government Measure (Wales) 2009 to set Well-being Objectives and Improvement Objectives.

Our priorities show the council's contribution to Wales' 7 national goals described within the Well-Being of Future Generations Act (the 'Act') and describes how we will maximise this contribution to the national goals and to the social, cultural, environmental and economic well-being of Swansea by working in line with the sustainability principles set out within the Act.

4.6 Green Infrastructure Plans and Strategies

Swansea Central Area: Regenerating our City for Wellbeing and Wildlife

The green infrastructure strategy, published jointly by Swansea Council and Natural Resources Wales, is designed to bring more nature into the Swansea Central Area.

Green Infrastructure - commonly referred to as GI - is the term used to describe all the green space, soil, vegetation and water that provide the ecosystem services that make places more liveable. This includes, for example, streets trees, green roofs and walls, natural play spaces, wildlife / nature gardens, pollinator corridors, landscaping, drainage and air quality management solutions.

The vision is for a city with high quality multifunctional green infrastructure, which delivers resilience, prosperity, nature, health, wellbeing and happiness to the citizens and visitors of Swansea.

The 5 Principles of Green Infrastructure to be applied to achieve this vision:

1. Multifunctional - making sure that all GI in the city centre provides as many benefits as possible. For example, it may reduce pollution and/or flooding, offer shelter and/or food for native animals (birds, insects and/or small mammals), provide shade during hot summer days, and create attractive pleasant and/or calming spaces for people to meet, relax and play.
2. Adapted for climate change - absorbing water to reduce flooding, providing summer cooling and accommodating wildlife. GI also helps mitigate climate change by capturing and locking up carbon.

3. **Healthy** - helping our physical and mental health by absorbing pollution, providing clean air, clean water, food and space to exercise, socialise and play and space to have contact with nature.
4. **Biodiverse** - supporting a wide variety of native species providing shelter and food and creating green corridors across the city centre linking to existing strategic wildlife corridors.
5. **Smart and Sustainable** - providing solutions, techniques and technologies that are low maintenance and reduce pollution and waste and maximise the use of recycled or sustainably sourced materials.

Success will be measured via a number of performance indicators which will work towards targets to double (from 13% to 26%) GI by 2030 and to increase tree canopy cover to 20-25% by 2044.

The strategy is designed to support the Local Development Plan and the application of the Statutory SuDS Standard 2019. It also delivers the council's duties under the Well-being of Future Generations (Wales) Act 2015 and Environment (Wales) Act 2016 through the Council's Well-being Objective: Maintaining and enhancing Swansea's natural resources and biodiversity and, the Swansea Public Service Board's Working with Nature Objective.

<https://www.swansea.gov.uk/climateactiongreeninfrastructure>

4.7 Climate Change Strategies

Climate Change and Nature Strategy 2022 - 2030

Introduction

Climate change is the long-term alteration of temperature and typical weather patterns largely caused by human activity, like burning fossil fuels, like natural gas, oil, and coal. Burning these materials releases what are known as greenhouse gases into the atmosphere. Human health and well-being is vulnerable to such change. This shift is expected to cause fluctuating weather- heat and fire, drought and flood, an increase in waterborne diseases, poor air quality, threats to wildlife and loss of food sources.

The image below shows how the temperatures across Wales are already increasing year on year, setting a clear trend towards a hotter climate which will bring significant consequences.

We all have a responsibility to act now. A public sector target of 2030, ahead of the Welsh Government's target of 2050 for the whole of Wales, will give us our best chance of keeping global warming below 1.5°C.

This is the tipping point at which the climate impacts we're already experiencing will go from bad to potentially catastrophic. We'll see natural systems cross danger points, triggering lasting changes such as extreme storms, heatwaves, mass loss of natural habitats and species.

It is also recognised that our wellbeing and that of future generations are dependent upon the state of the natural environment. Our natural environment in Wales is under considerable pressure from over exploitation, habitat loss, pollution, climate change as well as invasive non-native species.

So, what are Swansea Council doing about it?

Legislation, Regulation and Policy

There is a range of well publicised legislation and policy helping to drive this change:

Globally

The international Paris Accord 2015 which seeks to keep global temperature increases well below 2 degrees.

The IPPC (Intergovernmental Panel on Climate Change) - In their Climate Change 2021 report, conclude that:

- There is still time to limit the worst effects of climate change
- Stabilising the climate will require the globe to reach net-zero CO₂ emissions by 2050
- Human activities have already caused around 1.1°C warming
- The planet's climate is warming faster than anything experienced
- Every part of our planet is already seeing multiple and increasing changes in their climate systems
- Global warming is very likely to reach 1.5°C by 2040
- Climate change is intensifying the water cycle affecting rainfall patterns
- Coastal areas will see continued sea-level rise throughout the 21st century
- Further warming will amplify impacts on frozen regions
- The ocean is warming and acidifying.

Locally

Following the Notice of Motion on Climate Change Emergency presented to Council on 27th June 2019, the Authority reaffirms its commitment to:

- Call upon the UK and Welsh governments to provide us with the necessary powers and resources to ensure Swansea Council becomes net zero by 2030.
- Publicise climate emergency and promote a greater awareness of the truth of climate change amongst the local population aiming for a county wide target of net zero by 2050
- Work with relevant experts in research and development to:
 - Review our current strategies and action plans for addressing climate change.
 - Identify any further policy changes or actions which we could undertake, within the scope of our powers and resources, to meet the challenge of climate emergency.
 - Seek the help of local partners such as Swansea University and other research bodies to, within one year, produce a report to share with the community, explaining work already underway and achievements already made, as well as targets for the future.
 - Update on further work undertaken by the Council in this area on an annual basis through the Council Annual Review of Performance Report section on corporate objective - Maintaining and enhancing Swansea's natural resources and biodiversity.
- The Council undertook a citizen's survey in March 2021, with excellent response, but the key message taken on board is 'Go Faster, Go Further'.
- Climate change survey 2021 – results
 - 967 people were surveyed and 93% were concerned about climate change
 - A Twitter check of 396 people found 66% were concerned about climate change

The journey so far

- Swansea Council have achieved a great deal over several years to mitigate the impacts of Climate Change such as:
- Swansea Council procures its energy using Crown Commercial Services Framework Agreements, via the National Procurement Service (NPS), for its energy supplies. All electricity procured via the NPS framework is from 100% renewable energy sources; 41% sourced from Wales (Apr 20 - Mar 21); Gas - Total Gas and Power (TGP)

procured as new gas supplier (from Apr 21), registered interest in purchasing 'Green Gas'- dependant on viability and cost impact.

- Refit Low Carbon Programme - Swansea Council is participating in the Welsh Government supported Refit Low Carbon Programme to implement energy efficiency saving opportunities in non-domestic buildings. A £1.3 million interest free loan has been secured from Welsh Government Wales Funding Programme (Salix) to deliver a Refit Cymru (Energy Efficiency) Phase 1 project comprising over 18 buildings which is projected to save an estimated 400 tCO₂e every year. Quantifying the energy savings delivered by the Energy Conservation Measures (ECMs) will be validated using the Measurement and Verification (M and V) process.
- Carbon Reduction Retrofit (phase 2): Working towards developing a business case to implement Energy Conservation Measures for Education Services - Schools.
- Swansea Council with the support of Welsh Government Energy Services are progressing towards the development of a 3MW Ground Mounted Solar PV farm located on a capped waste land filled area. It is predicted over the asset lifespan (35 years) that 101,302,731 kWh of renewable energy will be generated equating 28,454 t/CO₂. Part of this capital expenditure cost could be recovered as it would create revenue for the Authority, in the form of either Power Purchase Agreements (PPA) or private wire connection. There is the potential opportunity of extending the Solar PV site in future years as current additional waste land is capped.
- Public Sector Hub: Cabinet are considering moving from the Civic Centre to a new public sector hub in the heart of the city centre as part of Swansea Bay Central Phase 2, the £1bn project to revitalise the St David's area of the city centre. This is an opportunity for the Authority to show its commitment towards meeting its net zero carbon aspirations by 2030 incorporating renewable technologies into the design specifications.
- Progressing work towards a world-leading Swansea Bay Tidal Lagoon, estimated electricity generation of 504,854 MWh, equating to carbon emission savings of 94,913 mT CO₂e.

Swansea Council Net Zero Carbon by 2030

Swansea Council is monitoring its emissions and reporting annually to Welsh Government. It is taking all possible action to achieve net zero as demonstrated in the action plan:

Buildings and Energy

- Decarbonise our public estate by reviewing our asset management strategy.
- Reduce the energy consumed across the council's buildings and estate.
- Encourage employee behaviour change through training and process improvement
- Decarbonise street lighting with more LED's
- Ensure all new buildings are constructed to the highest possible sustainability standards.
- Fleet and Mobile Equipment
- Transition the Council's fleet to zero emission equivalents in accordance with the Welsh Government's expectation of light commercial vehicles by 2025 and other vehicles by 2030
- Establish a fleet vehicle charge point infrastructure that supports this transition
- Optimise fleet vehicle use and efficiency
- Establish integrated data systems for GHG measurement
- Revise and approve the appropriate supporting policies, procedures and working practices
- Decarbonise Grey Fleet travel
- Decarbonise mobile plant equipment

Land Use

- LDP policy reviewed to protect land soils and habitats rich in carbon
- Increase terrestrial Central Area GI to 26%
- Tree planting areas mapped county wide 1000s new trees planted
- 30% of protected sites (local nature reserves, etc.) in positive management for biodiversity

Waste

- Encourage circular economy values within Swansea Council - to minimise and prevent - reduce, reuse, recycle,
- Reduce operational single use plastics wherever possible
- Reduce operational waste e.g., food, paper
- Encourage operational recycle and repair.
- Reduce Construction Waste

New Ways of Working

- Develop emissions data monitoring processes
- Reduce commuting miles
- Deliver agile working policy
- Develop staff active travel plan
- Implement Healthy Travel Charter in Swansea Council
- Develop an Electric Vehicle Charging Strategy

Supply Chain

- Commit to Net Carbon Zero in our supply chain by 2050
- Through forward planning and innovation develop new specifications for our contracts that deliver Net Carbon Zero
- Map and monitor our progress, with appropriate prioritisation and target setting

Sustainable Transport Strategy

A great deal of positive work has been carried out in this area to date with all activity becoming part of this overarching strategy. This includes how the council deals with its Council fleet, the grey fleet (personal mileage by employees), its emissions from street lighting, the continued promotion of active travel and the development of a local and regional sustainable public transport system.

Some specifics include:

- Continuation of planning for, and improving the active travel network. Refresh of the current Active Travel maps and consult on potential new routes for development, through a new Active Travel Network Map in 2021.
- Increase levels of active travel through promotion, engagement and encouragement of active travel with the general public, businesses, communities and educational establishments, through a behaviour change campaign, Swansea Bayways.
- Further roll out of EV charging infrastructure.
- Continue to deliver a 5 % year on year reduction in council fleet emission via its green fleet strategy.
- The development of the ULEV strategy will support further emissions reductions. Targets will gradually increase over time up to 10% per annum to align with technological advances in coming years.

- Seek to embed the reductions in grey fleet mileage which achieved 50% and 1 million miles less in 2020/21 to date.
- South West Wales Metro - Continue the development of business cases for investment in active travel, bus and rail projects across the region.
- Investigate low-emission public transport alternatives through work with partners, such as Transport for Wales and First Cymru to establish how vehicle emissions could be reduced in the future.

Wider communication and engagement.

This will be established through a variety of routes:

- The Swansea Charter: Climate Change and Nature Action underpins the path to A Net Zero Swansea.
- The ultimate aim is 2050 Net Zero - City and County of Swansea (all emissions)
- A key milestone will be 2030 Net Zero - Swansea Council (in scope organisational emissions)
- Business, Citizens, the Council, Community, Partners, Government, Youth and the Voluntary sector all play their part. 'It is everyone's business'
- There will be a continued commitment to engage with local people, groups and businesses and help them be smarter and better prepared for the impacts of climate change and nature recovery. This will be enhanced via the Climate and Nature Charter and online pledge wall.
- Swansea Council recognises that it must lead by example and use its 'Sphere of Influence' to reach out to as many citizens and businesses as possible. The Leader and Cabinet Members have signed the charter, and a more generic version for Swansea Citizens and public sector, business, charities, schools, groups etc. will be used, alongside the more simplistic pledge wall as mechanisms to seek wider buy in across the whole city and county.

Involving partners will be paramount to success, and will help support Swansea Council's ambition to lead by example. Agreed strategies will provide structure and governance to ensure delivery.

Listening to and acting on community groups, school groups ideas will help shape the strategy.

Swansea council will commit to making long term and embedded behaviour change via training and support not only within its own authority but also across the City and County, for all citizens. We want everyone to shape Swansea's vision for reaching net zero carbon.

We can make changes on a huge scale if we all make small changes to how we move, shop, eat, think and live, together.

Reducing emissions and recovering nature needs businesses and households to change. We must use more renewable energy sources such as wind, solar and geothermal. We also have to change how we use energy, by cutting down on the power we use. We need to be more mindful of food sources, the nature surrounding us, its recovery and how our communities need to adapt for the future.

Swansea Council cannot make Swansea net zero carbon on its own. We need everyone in Swansea to act now and consider what they can do to reduce their impact on the planet. We all need to take action at home, in the workplace, and across the county as a whole.

The Council is well placed to work with others. We can make the most of Swansea's collective potential and create solutions together. There will need to be major investments. We will have to make changes to existing systems of how we use and interact with energy. We must change how we live our lives. We will have to redefine how we manage and interact with our environment.

Above all, to meet this challenge, we need collective leadership and shared ambition.

5 Conclusion and Proposed Actions

5.1 Conclusions from New Monitoring Data

The passive NO₂ monitoring data from 2020 shows that concentrations at all passive monitoring locations, with the exception of one site, - decreased from 2019, with an average decrease of decrease of 6.9 µg/m³. All sites annual mean NO₂ concentrations comply with the NO₂ annual mean AQS objective. The overall decrease is mostly likely attributed to the impacts COVID-19 influences throughout 2020.

During 2019, passive monitoring concentrations remained stable from 2018, with a minor decrease of 1% across all sites. The highest concentration was 39.9 µg/m³ at location 121, which is within 10% of the AQS objective for NO₂. This site continually reports the highest concentration throughout the monitoring network; this site is located in Swansea AQMA 2010 (Hafod) and the Council will continue to closely monitor this location going forward.

The nineteen new monitoring locations commissioned in 2019 reported compliance in the first year of monitoring. However, three sites reported concentrations within 10% of the NO₂ AQS objective. These sites are 427, 443 and 445, with concentrations 37.2 µg/m³, 36.0 µg/m³ and 37.7 µg/m³.

Monitored NO₂, PM₁₀ and PM_{2.5} concentrations at all automatic monitoring stations continue to report annual means well below the AQS objectives for NO₂, PM₁₀ and PM_{2.5} in 2020 and 2019. In regard to the short term AQS objective for NO₂, in which the 200µg/m³ must not be exceeded more than 18 times/year, and the PM₁₀ AQS objective whereby there should be no more than 35 24-hour mean concentrations greater than 50µg/m³, there were no exceedances reported for both pollutants in 2020 and 2019.

5.2 Conclusions relating to New Local Developments

Ongoing implementation and development of local strategies, as detailed in Table 1.2, will continue to assist in reducing pollutant concentrations and emissions. The Council also continues to request air quality assessments for new planning applications where relevant, to ensure that there is no significant degradation of air quality or that no new sensitive receptors are being introduced into areas of existing poor air quality.

5.3 Other Conclusions

The existing diffusion tube network within Swansea allows the council to closely monitor hotspot areas and help highlight areas of concern, the monitoring network in 2020 has shown compliance across all monitoring locations except one location located within the Swansea AQMA. Despite compliance, 2020 was largely affected by government lockdowns, causing an anomalous year. In relation to the designated AQMA, monitoring results show full compliance within Swansea AQMA 2010, taking into account an anomalous year, there is no intention to start a revocation process. The Council will continue to use its monitoring network to closely monitor concentrations at these locations.

5.4 Proposed Actions

Swansea Council will continue to actively monitor NO₂ concentrations, reviewing the diffusion tube network where necessary. Whilst annual mean NO₂ concentrations decreased during 2020, this is believed to have been influenced by COVID - 19, therefore the Council do not intend to revoke any AQMAs. If concentrations in future years continue to remain low and well below the AQS objective, then the Council will pursue revocation of these AQMAs where appropriate.

References

- I. Technical Guidance LAQM.TG(22)
- II. Air Quality (Wales) Regulations 2000, No. 1940 (Wales 138)
- III. Air Quality (Amendment) (Wales) Regulations 2002, No 3182 (Wales 298)
- IV. City & County of Swansea Progress Report 2019

Appendices

Appendix A: Monthly Diffusion Tube Monitoring Results

Appendix B: A Summary of Local Air Quality Management

Appendix C: Air Quality Monitoring Data QA/QC

Appendix D: AQMA Boundary Maps

Appendix E: Impact of COVID-19 upon LAQM

Appendix A: Quality Assurance / Quality Control (QA/QC) Data

Table A.1 – Full Monthly Diffusion Tube Results for 2020 ($\mu\text{g}/\text{m}^3$)

| Site ID | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Raw Data | Bias Adjusted (0.72) and Annualised ⁽¹⁾ | Distance Corrected to Nearest Exposure ⁽²⁾ |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|----------|--|---|
| 5 | - | 21.0 | 25.7 | 18.7 | 16.8 | 18.3 | 12.7 | 22.8 | 29.8 | 25.8 | 25.8 | 28.8 | 22.4 | 16.2 | |
| 6 | 34.1 | 25.4 | 22.8 | 14.7 | 13.2 | 16.2 | 13.1 | 15.7 | - | 21.0 | 24.6 | 24.6 | 20.5 | 14.8 | |
| 7 | 43.7 | 40.2 | 30.2 | 23.7 | 21.9 | 25.2 | 20.8 | 39.1 | 41.5 | 34.7 | 42.7 | 36.5 | 33.4 | 24.2 | |
| 8 | 54.6 | 36.6 | 29.2 | 31.1 | 23.7 | 27.3 | 23.3 | 36.0 | 47.8 | 36.4 | 49.5 | 46.6 | 36.8 | 26.7 | |
| 10 | 29.9 | - | - | 13.8 | 12.0 | | 8.8 | 15.6 | 20.6 | 20.5 | 24.1 | 23.6 | 18.8 | 13.6 | |
| 11 | 43.1 | 24.0 | 25.7 | 23.8 | 18.7 | 24.1 | 15.6 | 24.5 | 34.3 | 29.5 | 39.8 | 34.1 | 28.1 | 20.4 | |
| 12 | 53.6 | - | 31.7 | 24.8 | 21.5 | 29.6 | 24.3 | 29.7 | 41.1 | 35.2 | 36.3 | 41.1 | 33.5 | 24.3 | |
| 14 | 26.3 | 17.8 | 23.4 | 17.1 | - | - | - | - | - | - | - | - | 21.1 | 14.5 | |
| 15 | 31.1 | 23.0 | 24.7 | 16.2 | - | - | - | - | - | - | - | - | 23.8 | 16.3 | |
| 16 | 34.8 | 24.5 | 24.5 | 19.5 | 15.9 | 16.4 | 13.9 | 21.9 | 27.1 | 23.0 | | 29.0 | 22.8 | 16.5 | |
| 18 | 59.0 | 32.0 | 36.9 | 35.7 | 30.2 | 35.6 | 17.6 | 41.2 | 45.7 | 37.8 | 53.3 | 46.2 | 39.3 | 28.5 | |
| 19 | 47.3 | 39.1 | 32.0 | 21.9 | 23.5 | 28.8 | 21.1 | - | 41.8 | 36.9 | 39.1 | 41.0 | 33.9 | 24.5 | |
| 20 | 45.1 | 27.0 | 27.0 | 23.7 | 16.6 | 21.3 | 14.5 | 26.2 | 30.6 | 29.3 | 40.5 | 38.9 | 28.4 | 20.6 | |
| 22 | 37.8 | 24.6 | 22.5 | 18.4 | 16.1 | 17.7 | 15.5 | 21.2 | 27.6 | 25.4 | 36.6 | 31.6 | 24.6 | 17.8 | |
| 26 | 44.2 | 31.4 | 33.1 | 27.2 | 21.9 | 23.7 | 13.5 | 27.9 | 33.7 | 28.3 | 39.4 | 35.3 | 30.0 | 21.7 | |
| 27 | 46.3 | 29.7 | 31.5 | 26.0 | 23.3 | 24.3 | 13.4 | 26.4 | 30.7 | 30.7 | 36.5 | 41.7 | 30.0 | 21.8 | |
| 29 | 37.6 | 21.8 | 21.0 | 22.6 | - | 17.2 | - | 22.5 | 27.5 | 24.6 | 32.5 | 29.6 | 25.7 | 18.6 | |
| 32 | 40.0 | 25.4 | 24.8 | 21.0 | 20.0 | 23.2 | 19.9 | 25.1 | 36.3 | 30.0 | 30.1 | 32.2 | 27.3 | 19.8 | |
| 33 | 40.8 | 27.8 | 26.5 | 21.1 | 19.3 | 26.7 | - | 22.5 | 31.2 | 25.7 | 31.8 | - | 27.3 | 19.8 | |
| 35 | 46.8 | 28.8 | 28.1 | 26.2 | 19.7 | 23.1 | 17.3 | 23.2 | 33.2 | 21.1 | 38.5 | 34.4 | 28.4 | 20.6 | |
| 36 | - | 29.4 | 23.2 | 19.9 | 16.9 | 18.4 | 15.3 | 21.5 | 31.8 | 28.3 | 32.8 | 35.1 | 24.8 | 18.0 | |
| 40 | - | - | 18.6 | 17.3 | 15.5 | - | - | 17.6 | 23.2 | 21.7 | 28.2 | - | 20.3 | 14.3 | |
| 41 | 45.2 | - | 30.0 | 27.2 | 23.7 | 18.9 | - | 29.6 | 32.1 | 39.6 | - | 36.6 | 31.4 | 22.8 | |
| 43 | 46.1 | 33.7 | 26.0 | 21.1 | 17.7 | 20.6 | 15.7 | 25.7 | 29.4 | 31.1 | 39.2 | 39.1 | 28.8 | 20.9 | |
| 44 | 38.6 | 21.2 | 14.0 | 16.4 | 13.2 | 15.8 | 15.1 | 21.1 | 24.5 | 21.9 | 30.0 | 24.4 | 21.3 | 15.5 | |
| 45 | 33.5 | 22.4 | 26.2 | 22.2 | 18.2 | 18.8 | - | 22.5 | 27.8 | 24.0 | 28.2 | 32.7 | 25.1 | 18.2 | |
| 48 | 28.4 | 21.2 | 15.9 | 11.7 | 9.2 | - | 8.7 | 13.5 | 17.8 | - | 22.6 | 20.7 | 17.0 | 12.3 | |

| Site ID | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Raw Data | Bias Adjusted (0.72) and Annualised ⁽¹⁾ | Distance Corrected to Nearest Exposure ⁽²⁾ |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|----------|--|---|
| 50 | 49.0 | 32.9 | 30.4 | 24.3 | 22.1 | 24.4 | 17.6 | 25.8 | 27.1 | 31.4 | 39.2 | - | 29.5 | 21.4 | |
| 54 | 43.6 | 31.6 | 25.9 | 21.5 | 21.9 | 21.5 | 18.1 | 25.9 | 27.7 | 27.0 | 33.4 | 28.5 | 27.2 | 19.7 | |
| 55 | 45.9 | 26.9 | 26.4 | 23.0 | 20.9 | 12.5 | 17.3 | 22.3 | 30.9 | - | 34.3 | 35.4 | 26.9 | 19.5 | |
| 56 | 53.5 | 40.9 | 31.7 | 22.9 | 18.5 | 25.4 | 23.7 | 30.6 | 33.6 | 29.0 | 37.3 | 34.7 | 31.8 | 23.1 | |
| 58 | 45.5 | 38.5 | 15.3 | 21.2 | 18.7 | 19.7 | 16.6 | 21.3 | 35.3 | 31.4 | 34.5 | 36.1 | 27.8 | 20.2 | |
| 59 | 57.0 | 35.4 | 39.4 | 30.7 | 26.7 | 29.0 | 23.3 | 35.3 | 43.3 | 41.9 | 47.1 | 47.9 | 38.1 | 27.6 | |
| 61 | 43.2 | 29.5 | 29.9 | 25.1 | 22.3 | 23.6 | 14.7 | 26.0 | 33.6 | 26.2 | 35.0 | 30.4 | 28.3 | 20.5 | |
| 63 | 27.0 | 14.7 | 18.5 | 13.8 | 9.9 | 12.5 | 7.2 | 16.4 | 20.3 | 16.0 | 22.7 | 18.4 | 16.4 | 11.9 | |
| 64 | 1.0 | - | 25.7 | 18.9 | 17.9 | 24.9 | 21.3 | 30.9 | 40.6 | 34.7 | 39.2 | 35.9 | 26.5 | 19.2 | |
| 65 | 29.5 | 16.4 | 19.9 | 15.2 | 12.3 | 13.4 | 9.9 | 18.9 | 23.7 | 19.4 | 27.7 | 21.9 | 19.0 | 13.8 | |
| 66 | 35.4 | 22.6 | 23.1 | 14.9 | 12.4 | 15.1 | 15.9 | 20.4 | 29.3 | 26.2 | 29.2 | 28.4 | 22.7 | 16.5 | |
| 67 | 55.9 | 47.3 | 37.6 | 29.5 | 26.5 | 25.9 | 20.5 | - | 37.0 | - | 41.1 | 44.0 | 36.5 | 26.5 | |
| 68 | 40.8 | 28.8 | 29.5 | 19.8 | 19.2 | 21.5 | 14.5 | 22.4 | 32.1 | 27.2 | 31.2 | 25.0 | 26.0 | 18.8 | |
| 70 | 38.3 | 26.2 | 24.1 | 17.2 | 14.8 | 15.9 | 14.2 | 20.7 | 24.6 | - | 28.9 | 32.4 | 23.4 | 16.9 | |
| 75 | 47.9 | 34.8 | 29.9 | 20.2 | 18.3 | 21.3 | 17.9 | 25.6 | 32.8 | 30.6 | 40.8 | 31.6 | 29.3 | 21.2 | |
| 83 | - | 20.6 | 20.2 | 14.0 | - | - | - | - | - | - | - | - | 18.3 | 12.9 | |
| 84 | 38.7 | 30.2 | 24.6 | 15.9 | 14.8 | 20.2 | 13.8 | - | 29.1 | 27.8 | 31.8 | 27.3 | 24.9 | 18.1 | |
| 85 | 40.2 | 31.3 | 25.7 | 16.1 | - | 20.8 | 18.5 | 23.0 | 28.8 | 27.5 | 30.0 | 25.5 | 26.1 | 18.9 | |
| 86 | 31.9 | 21.4 | 17.3 | 14.1 | 11.0 | 15.8 | 10.0 | 18.3 | 23.4 | 21.2 | 24.0 | 23.6 | 19.3 | 14.0 | |
| 87 | 21.5 | 10.8 | 12.3 | 10.6 | 7.8 | 8.3 | 7.0 | 11.5 | 16.2 | 13.2 | 19.6 | 15.9 | 12.9 | 9.3 | |
| 88 | 32.2 | 23.4 | 22.0 | 17.8 | 14.8 | 15.6 | 13.9 | 20.5 | 27.0 | 22.2 | 26.3 | 32.3 | 22.3 | 16.2 | |
| 89 | 23.5 | 18.4 | 17.9 | 13.2 | 13.1 | 13.7 | 10.3 | 13.7 | 20.5 | 17.7 | 24.3 | 20.5 | 17.2 | 12.5 | |
| 90 | 35.3 | 23.1 | 25.6 | 20.9 | 15.3 | 18.0 | 9.6 | 19.2 | 25.0 | 20.4 | 30.6 | 24.8 | 22.3 | 16.2 | |
| 91 | 30.7 | 20.8 | 21.0 | 17.9 | 15.4 | 16.4 | 12.1 | 20.3 | 27.7 | 21.6 | 23.4 | - | 20.7 | 15.0 | |
| 94 | 38.3 | 21.6 | 19.7 | 16.4 | 14.8 | 17.4 | 9.7 | 19.7 | 24.9 | 23.0 | 29.2 | 27.2 | 21.8 | 15.8 | |
| 95 | 26.9 | - | 19.1 | 17.2 | 12.4 | - | 10.6 | 16.1 | 22.4 | 18.6 | - | - | 17.9 | 13.5 | |
| 96 | 34.6 | 22.4 | 20.1 | 16.6 | 13.6 | - | 13.4 | 19.0 | 25.4 | 20.8 | 27.7 | 25.0 | 21.7 | 15.7 | |
| 97 | 40.2 | 24.6 | 28.1 | 25.4 | 20.5 | 22.9 | 15.5 | 23.9 | 33.0 | 28.2 | - | 33.8 | 26.9 | 19.5 | |
| 98 | 39.2 | 28.5 | 24.6 | 21.0 | 17.5 | 19.1 | 14.8 | 23.9 | 30.4 | 26.4 | 37.6 | 33.4 | 26.4 | 19.1 | |
| 99 | 36.0 | 22.0 | - | 17.8 | 16.6 | 17.1 | 12.7 | 16.3 | 26.4 | 22.4 | 30.3 | 26.3 | 22.2 | 16.1 | |
| 102 | 42.1 | 24.3 | - | 19.7 | - | - | - | - | - | - | - | - | 28.7 | 19.3 | |
| 104 | 35.0 | 21.8 | 25.4 | 26.4 | 19.0 | 18.4 | 11.4 | 18.8 | 22.7 | 23.2 | 33.0 | 32.3 | 23.9 | 17.4 | |
| 107 | 44.3 | 29.9 | 24.2 | 24.8 | - | - | - | - | - | - | - | - | 30.8 | 21.1 | |
| 110 | 30.7 | 18.2 | 14.7 | 20.0 | 14.2 | 15.0 | 10.0 | 17.7 | 22.1 | 20.1 | 27.1 | 25.7 | 19.6 | 14.2 | |
| 115 | 45.7 | 28.2 | 10.7 | 20.5 | 17.3 | 19.2 | 14.6 | 22.1 | 30.6 | | 35.4 | 30.2 | 25.0 | 18.1 | |

| Site ID | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Raw Data | Bias Adjusted (0.72) and Annualised ⁽¹⁾ | Distance Corrected to Nearest Exposure ⁽²⁾ |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|----------|--|---|
| 116 | 48.7 | 36.1 | 19.4 | 23.6 | 21.6 | 23.6 | 15.9 | 30.1 | 34.5 | 27.4 | 41.4 | 34.7 | 29.7 | 21.6 | |
| 117 | 45.7 | 32.9 | 28.1 | 20.4 | 18.7 | 18.6 | 19.3 | 22.9 | 34.6 | 32.3 | 42.4 | 35.9 | 29.3 | 21.2 | |
| 118 | 41.3 | 27.9 | 28.8 | 18.2 | 16.3 | 17.2 | 11.0 | 15.7 | 21.2 | 16.3 | 28.8 | 24.7 | 22.3 | 16.1 | |
| 119 | 44.2 | 30.2 | 24.8 | 20.3 | 18.1 | 17.4 | 11.5 | 15.9 | 19.4 | 20.2 | 27.2 | 29.2 | 23.2 | 16.8 | |
| 121 | 59.8 | 42.9 | | 27.5 | 27.5 | 26.2 | 21.3 | 28.6 | 39.0 | 38.7 | 43.1 | 40.0 | 35.9 | 26.0 | |
| 122 | 41.2 | 24.1 | 33.2 | 28.0 | 19.5 | 19.6 | 13.1 | 21.7 | 33.1 | 27.3 | 32.7 | 33.4 | 27.2 | 19.7 | |
| 123 | 50.2 | 24.7 | 39.7 | 26.4 | 24.8 | 25.7 | 20.3 | 31.8 | 39.1 | 30.2 | 39.5 | 39.1 | 32.6 | 23.6 | |
| 124 | 42.7 | 15.5 | 28.4 | 26.8 | 21.9 | 25.5 | 16.6 | 29.3 | 37.1 | 31.1 | 35.6 | 37.5 | 29.0 | 21.0 | |
| 125 | 51.5 | 40.6 | 36.5 | 25.4 | 22.8 | 28.8 | 22.4 | 32.2 | 39.5 | 31.6 | 40.0 | | 33.8 | 24.5 | |
| 126 | 44.9 | 31.0 | 22.5 | 24.0 | 18.9 | 18.8 | 13.4 | 25.6 | 33.4 | 29.4 | | 43.1 | 27.7 | 20.1 | |
| 128 | 35.8 | 25.7 | 24.6 | 16.3 | 13.6 | 14.7 | 13.2 | | | 24.3 | 28.8 | 27.5 | 22.4 | 16.3 | |
| 129 | 40.9 | 28.6 | 28.5 | 27.8 | 19.5 | 19.9 | 12.5 | 19.6 | 27.6 | 26.7 | 31.8 | 34.8 | 26.5 | 19.2 | |
| 131 | 47.7 | 43.2 | 31.4 | 19.4 | 17.6 | 20.3 | 18.4 | 26.2 | 36.7 | 34.1 | 34.8 | 36.9 | 30.6 | 22.1 | |
| 132 | 34.3 | 20.7 | 30.1 | 20.9 | 16.1 | 14.6 | 9.3 | 21.3 | 28.4 | 25.0 | 37.8 | 35.6 | 24.5 | 17.8 | |
| 134 | 45.0 | 39.4 | 34.6 | 18.8 | 17.6 | | 18.7 | 26.6 | 35.3 | 33.0 | 37.7 | 35.7 | 31.1 | 22.6 | |
| 180 | 39.7 | 26.5 | 20.5 | 16.2 | 14.4 | 16.9 | 13.9 | 23.8 | 26.8 | 25.9 | 33.9 | 30.8 | 24.1 | 17.5 | |
| 182 | 35.8 | 26.1 | 23.1 | 19.7 | 16.6 | 20.8 | 12.6 | 19.1 | 24.9 | 23.7 | 28.3 | 24.7 | 23.0 | 16.6 | |
| 197 | 40.7 | 27.2 | 23.1 | 22.3 | 19.7 | 20.6 | 14.9 | 24.7 | 27.8 | 24.2 | 27.0 | 32.0 | 25.4 | 18.4 | |
| 198 | 40.7 | 28.8 | 25.2 | 24.5 | 21.3 | 23.9 | 16.4 | 27.1 | 29.4 | 27.1 | 34.5 | 31.2 | 27.5 | 19.9 | |
| 206 | 46.9 | | 33.2 | 19.3 | | 25.9 | 22.1 | 29.9 | 36.9 | 27.4 | 34.8 | 32.7 | 30.9 | 22.4 | |
| 207 | 37.8 | 27.8 | 26.4 | 16.5 | 15.9 | 22.7 | 20.2 | 27.5 | 34.3 | 26.7 | 32.1 | 33.8 | 26.8 | 19.4 | |
| 208 | 37.6 | 26.0 | 27.1 | 17.7 | 16.7 | 24.4 | 21.0 | 27.1 | 33.4 | 26.1 | 30.5 | 31.6 | 26.6 | 19.3 | |
| 209 | 35.5 | 27.5 | 22.7 | 20.6 | 19.9 | 25.3 | 18.9 | 29.0 | 31.9 | 24.6 | 33.2 | 22.2 | 25.9 | 18.8 | |
| 210 | 32.1 | 23.4 | 18.2 | 18.0 | 16.6 | 21.1 | 15.6 | 23.9 | 30.1 | 22.3 | 28.1 | 22.3 | 22.6 | 16.4 | |
| 211 | 33.7 | 22.6 | 22.8 | 20.4 | 19.2 | 22.6 | 16.2 | 25.1 | 27.2 | 21.5 | 31.0 | 25.9 | 24.0 | 17.4 | |
| 212 | 23.7 | 15.2 | 22.1 | 16.1 | 12.4 | 15.1 | 9.1 | 16.5 | 22.2 | 17.0 | 20.3 | 22.2 | 17.7 | 12.8 | |
| 213 | 37.8 | 24.6 | 14.9 | 22.0 | 16.9 | 22.3 | 14.5 | 23.1 | | 19.9 | 28.7 | 26.0 | 22.8 | 16.5 | |
| 240 | 41.6 | 24.7 | 28.5 | 24.7 | 17.4 | 22.7 | 13.5 | 25.8 | 30.9 | 28.2 | 33.6 | 16.0 | 25.6 | 18.6 | |
| 241 | 37.5 | 18.8 | 25.1 | 23.7 | | | | | | | | | 26.3 | 18.0 | |
| 242 | 47.1 | 28.6 | 35.6 | 23.7 | 23.3 | 21.7 | 18.7 | 27.9 | 33.8 | 28.2 | 29.2 | 35.8 | 29.5 | 21.4 | |
| 243 | 39.0 | 33.4 | 27.6 | 21.3 | 21.9 | 24.3 | 23.3 | 27.3 | 35.8 | 36.1 | 39.5 | 34.6 | 30.3 | 22.0 | |
| 244 | 57.3 | 42.4 | 34.0 | 34.0 | 29.6 | 36.0 | 24.5 | 38.4 | | 30.0 | 52.2 | 41.7 | 38.2 | 27.7 | |
| 245 | 51.2 | 32.2 | 31.9 | 31.2 | | | | | | | | | 36.6 | 25.1 | |
| 247 | 42.1 | 23.3 | 27.5 | 27.5 | 19.8 | 21.3 | 13.0 | 24.2 | 30.1 | | 35.9 | 33.1 | 27.1 | 19.6 | |
| 249 | 42.8 | 27.4 | 27.0 | 23.8 | 18.3 | 20.2 | 13.1 | 24.0 | 29.3 | 25.8 | 32.8 | 27.6 | 26.0 | 18.8 | |

| Site ID | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Raw Data | Bias Adjusted (0.72) and Annualised ⁽¹⁾ | Distance Corrected to Nearest Exposure ⁽²⁾ |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|----------|--|---|
| 251 | 38.6 | 24.1 | 23.7 | 25.2 | - | - | - | - | - | - | - | - | 27.9 | 19.1 | |
| 256 | 46.6 | 37.8 | 35.0 | 25.5 | 20.5 | 22.8 | 21.1 | 29.4 | 36.8 | 35.7 | 40.4 | 43.3 | 32.9 | 23.8 | |
| 275 | 29.7 | 24.9 | 19.9 | 18.8 | 13.4 | 15.4 | 11.7 | 16.6 | 22.2 | 18.5 | 24.2 | 30.6 | 20.5 | 14.8 | |
| 276 | 39.5 | 24.8 | 25.3 | 23.1 | 19.9 | 21.2 | 16.6 | 23.9 | 31.0 | 27.3 | 36.1 | 32.2 | 26.7 | 19.4 | |
| 277 | 43.8 | 27.4 | 25.1 | 24.6 | 22.5 | 24.1 | 16.4 | 27.8 | 33.7 | 28.4 | 36.8 | 25.4 | 28.0 | 20.3 | |
| 278 | 38.4 | 27.4 | 25.0 | 27.9 | 22.5 | 24.9 | 14.8 | 26.4 | 32.9 | 28.9 | 36.6 | 28.4 | 27.8 | 20.2 | |
| 279 | 53.7 | 31.9 | 31.2 | 28.4 | 23.1 | 28.9 | 22.5 | 30.2 | 30.2 | 37.8 | - | 25.0 | 31.2 | 22.6 | |
| 280 | 50.8 | 40.2 | 34.4 | 31.8 | 25.8 | 26.7 | 14.2 | 30.9 | 36.7 | 24.2 | 44.5 | 38.7 | 33.2 | 24.1 | |
| 281 | 53.5 | 34.9 | 18.4 | 24.0 | 22.3 | 28.9 | 20.6 | 29.0 | 40.9 | - | 40.5 | 39.2 | 32.0 | 23.2 | |
| 282 | 53.8 | 42.5 | 31.7 | 28.0 | 24.8 | 28.6 | 23.6 | 32.1 | - | 39.6 | 45.3 | 43.7 | 35.8 | 25.9 | |
| 284 | 37.0 | 22.1 | 22.2 | 19.4 | 19.5 | 22.4 | - | 25.1 | 32.1 | 27.8 | 30.3 | 33.4 | 26.5 | 19.2 | |
| 285 | 43.6 | - | 26.3 | 20.9 | 19.4 | 19.0 | 16.1 | 25.0 | 29.8 | 29.2 | 39.7 | 37.6 | 27.9 | 20.2 | |
| 286 | 46.0 | 25.5 | 21.6 | 18.7 | 17.4 | 22.9 | 14.8 | 25.2 | 30.9 | 29.0 | 34.9 | 33.6 | 26.7 | 19.4 | |
| 287 | 36.5 | - | 26.5 | 23.1 | 17.4 | 17.5 | 12.2 | 21.7 | 27.5 | - | 33.2 | - | 24.0 | 17.4 | |
| 288 | 43.8 | 19.1 | 26.9 | 20.9 | 17.3 | 17.7 | 13.1 | 21.3 | 30.4 | 28.3 | 34.7 | 34.0 | 25.6 | 18.6 | |
| 289 | 40.7 | 31.3 | 31.5 | 23.0 | 18.0 | 18.7 | 14.3 | 21.5 | 29.3 | 28.8 | 37.2 | 40.4 | 27.9 | 20.2 | |
| 291 | 58.1 | 39.4 | 33.9 | 18.6 | 17.3 | 25.7 | 25.3 | 31.2 | 36.1 | 32.1 | - | 36.5 | 32.2 | 23.3 | |
| 295 | 42.0 | 31.8 | 25.1 | 21.0 | 17.7 | 21.5 | 15.5 | 24.5 | 30.3 | 27.2 | 32.0 | 34.4 | 26.9 | 19.5 | |
| 296 | - | 33.5 | 26.0 | 25.7 | 23.4 | 23.9 | 17.6 | 27.5 | 30.5 | 29.4 | - | 32.2 | 27.0 | 19.5 | |
| 323 | 46.1 | - | - | 22.2 | 18.6 | 19.7 | 15.0 | 16.5 | 33.7 | - | 32.6 | 33.1 | 26.4 | 19.1 | |
| 331 | 47.3 | 28.7 | 28.8 | 24.2 | 20.1 | 21.8 | 16.3 | 26.8 | 36.6 | 29.1 | 38.0 | 33.3 | 29.2 | 21.2 | |
| 334 | 40.8 | 25.3 | 29.3 | 20.6 | 19.5 | 18.1 | 10.5 | 22.0 | 29.8 | 25.1 | 30.8 | 29.9 | 25.1 | 18.2 | |
| 335 | 32.5 | 23.8 | 29.6 | 21.2 | 18.3 | 19.4 | 10.8 | - | 26.4 | 22.4 | 30.6 | 31.4 | 24.2 | 17.5 | |
| 336 | 42.6 | 30.2 | 35.8 | 24.3 | 21.3 | 20.2 | 14.8 | 23.0 | 31.9 | 28.0 | 37.1 | 43.8 | 29.4 | 21.3 | |
| 337 | 55.7 | 37.2 | 44.4 | 26.3 | - | 27.7 | 23.4 | 31.7 | 40.4 | 33.9 | 35.9 | 36.4 | 35.7 | 25.9 | |
| 338 | 41.7 | 30.0 | 28.2 | 24.6 | 19.7 | - | 13.6 | 25.9 | 34.4 | - | 35.2 | 34.8 | 28.8 | 20.9 | |
| 339 | 43.2 | 33.5 | 35.8 | 30.5 | 24.4 | 25.8 | 15.3 | - | - | 33.3 | 39.9 | 41.4 | 32.3 | 23.4 | |
| 340 | 56.7 | 45.8 | 41.7 | 25.9 | 25.5 | 33.4 | 24.9 | 34.0 | 38.5 | 34.5 | 41.8 | 32.3 | 36.3 | 26.3 | |
| 341 | 54.4 | 39.8 | 36.9 | 24.9 | 23.1 | 24.4 | 21.3 | 32.3 | 38.1 | 35.7 | 43.8 | 41.2 | 34.7 | 25.1 | |
| 342 | 45.1 | - | 24.3 | 25.4 | 24.9 | 25.6 | 13.6 | 32.3 | 36.1 | 32.9 | 42.2 | 37.9 | 30.9 | 22.4 | |
| 343 | 37.4 | 27.7 | 27.3 | 18.9 | 16.4 | 17.6 | 13.3 | 19.1 | 28.5 | 26.1 | 34.4 | 33.9 | 25.1 | 18.2 | |
| 344 | 42.7 | 27.5 | 34.2 | 24.1 | - | - | - | - | - | - | - | - | 32.1 | 22.0 | |
| 345 | 36.8 | - | 29.6 | 25.6 | - | - | - | - | - | - | - | - | 30.7 | 19.8 | |
| 346 | 38.1 | - | 31.0 | 21.1 | 18.2 | 18.1 | 13.5 | 22.6 | - | - | - | 36.5 | 24.9 | 18.5 | |
| 347 | 37.7 | 25.9 | 27.7 | 19.1 | 17.6 | 17.9 | 15.0 | 23.0 | 30.5 | 25.6 | 27.0 | 28.0 | 24.6 | 17.8 | |

| Site ID | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Raw Data | Bias Adjusted (0.72) and Annualised ⁽¹⁾ | Distance Corrected to Nearest Exposure ⁽²⁾ |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|----------|--|---|
| 348 | 42.1 | 31.9 | 28.8 | 20.7 | 18.2 | 19.3 | 13.9 | 24.2 | 33.1 | 30.2 | 35.0 | 30.1 | 27.3 | 19.8 | |
| 349 | 38.5 | 28.7 | 28.1 | 18.3 | 18.4 | 20.6 | 16.1 | 28.2 | 35.3 | 24.5 | 31.0 | 32.9 | 26.7 | 19.4 | |
| 350 | 51.1 | 34.2 | 36.9 | 23.5 | 23.7 | 23.1 | 14.9 | 34.9 | 40.7 | 34.2 | 31.3 | 39.1 | 32.3 | 23.4 | |
| 351 | - | 42.1 | - | - | - | - | - | - | - | - | - | - | - | - | |
| 356 | 40.0 | 22.7 | 28.7 | 22.0 | 18.4 | 18.3 | 11.3 | 17.2 | 24.9 | 22.8 | 32.2 | 28.3 | 23.9 | 17.3 | |
| 362 | 42.2 | 29.2 | 35.3 | 17.0 | 14.4 | 15.0 | 11.7 | 20.9 | 35.8 | 30.7 | 40.4 | 35.8 | 27.4 | 19.8 | |
| 363 | 36.7 | 23.9 | - | 14.3 | 11.4 | 10.9 | 8.8 | 19.6 | - | 26.3 | - | - | 19.0 | 14.9 | |
| 364 | 47.5 | 39.8 | 19.3 | 13.7 | 11.8 | 11.0 | 10.9 | 20.7 | 36.2 | 32.5 | 38.7 | 37.3 | 26.6 | 19.3 | |
| 373 | 37.0 | 13.1 | 25.6 | 20.4 | 18.9 | 20.8 | 21.8 | 24.1 | 31.2 | 25.6 | 33.9 | 32.7 | 25.4 | 18.4 | |
| 375 | 21.8 | 26.4 | 14.4 | 13.3 | 10.3 | 9.5 | 6.3 | 11.2 | 15.7 | 14.7 | 21.5 | 20.2 | 15.4 | 11.2 | |
| 376 | 35.8 | 24.5 | 27.9 | 20.1 | 18.6 | 21.2 | 17.8 | 26.2 | 29.7 | 25.8 | 30.3 | 32.8 | 25.9 | 18.8 | |
| 377 | 42.8 | - | 29.1 | 22.9 | 20.3 | 21.2 | 19.3 | 27.7 | 34.3 | 31.3 | 37.2 | 31.9 | 28.9 | 20.9 | |
| 385 | 36.6 | 20.0 | 22.0 | 18.0 | 14.3 | 15.3 | 9.9 | 17.0 | 22.7 | 21.1 | 42.5 | 27.9 | 22.3 | 16.1 | |
| 386 | 39.7 | 30.7 | 12.4 | 17.8 | 17.7 | 19.1 | 18.4 | 24.6 | 28.4 | 27.7 | 29.0 | - | 24.1 | 17.5 | |
| 387 | 27.3 | 19.6 | 13.8 | 11.5 | - | - | - | - | - | - | - | - | 18.0 | 12.4 | |
| 388 | 27.9 | 18.8 | 14.2 | 10.5 | 9.0 | 10.9 | 8.4 | 13.3 | 16.5 | 16.6 | 21.0 | 17.2 | 15.4 | 11.1 | |
| 389 | 53.3 | 27.6 | 35.1 | 22.5 | - | - | - | - | - | - | - | - | 34.6 | 23.7 | |
| 390 | 48.6 | 36.5 | 28.1 | 17.0 | 16.3 | 21.1 | 19.8 | 26.1 | 33.0 | 30.8 | 35.8 | 29.0 | 28.5 | 20.7 | |
| 391 | 40.7 | 28.6 | 24.5 | 18.8 | 18.4 | 21.2 | 17.7 | 26.1 | 29.1 | - | 31.7 | - | 25.7 | 18.6 | |
| 393 | 27.0 | 14.9 | 13.5 | 11.3 | - | - | - | - | - | - | - | - | 16.7 | 11.4 | |
| 394 | 25.3 | 15.5 | 14.0 | 8.3 | 7.0 | 9.6 | 9.2 | 8.7 | 16.6 | 14.3 | 18.1 | 18.1 | 13.7 | 9.9 | |
| 395 | 24.8 | 14.2 | 14.3 | 10.2 | - | - | - | - | - | - | - | - | 15.9 | 10.9 | |
| 396 | 25.0 | 18.0 | 15.8 | 10.7 | 9.4 | 12.1 | 10.1 | 13.1 | 18.8 | 14.5 | 22.1 | 20.9 | 15.9 | 11.5 | |
| 397 | 38.8 | 12.7 | 19.1 | 14.8 | - | - | - | - | - | - | - | - | 21.3 | 14.6 | |
| 398 | 25.4 | - | 15.4 | 13.4 | 12.1 | - | 9.2 | 14.3 | 19.3 | - | 22.4 | 33.2 | 18.3 | 13.3 | |
| 399 | 30.9 | 24.8 | 26.0 | 23.8 | 20.6 | 21.0 | 13.3 | 24.2 | 30.2 | - | 31.0 | 33.1 | 25.4 | 18.4 | |
| 400 | 34.1 | 27.2 | 19.1 | 18.4 | - | - | - | - | - | - | - | - | 24.7 | 16.9 | |
| 401 | 42.5 | 24.2 | 24.0 | 20.4 | 18.9 | 17.7 | 13.8 | 22.1 | 31.3 | 20.6 | 39.7 | 34.6 | 25.8 | 18.7 | |
| 403 | 46.5 | - | 20.9 | 19.0 | | 17.8 | 16.7 | 24.1 | 34.4 | 22.4 | 38.6 | 32.6 | 27.3 | 19.8 | |
| 404 | 38.4 | 19.8 | 26.4 | 25.6 | 20.9 | 21.4 | 15.3 | 7.5 | 29.2 | 29.7 | 39.3 | 28.6 | 25.2 | 18.2 | |
| 405 | 25.1 | 14.1 | 10.7 | 11.0 | - | - | - | - | - | - | - | - | 15.2 | 10.4 | |
| 406 | 56.2 | 37.4 | 37.0 | 29.0 | 26.5 | 33.7 | 24.0 | 33.4 | 41.0 | 32.0 | 46.9 | 40.8 | 36.5 | 26.4 | |
| 407 | 32.9 | 18.9 | 17.9 | 15.7 | 13.0 | 13.6 | 10.5 | 15.7 | 22.4 | 24.2 | 29.0 | 26.4 | 20.0 | 14.5 | |
| 408 | 44.8 | 45.1 | 32.3 | 21.7 | 17.2 | 20.0 | 17.7 | 27.6 | 38.1 | 31.2 | 38.0 | 31.9 | 30.5 | 22.1 | |
| 410 | - | 27.5 | - | - | - | - | 14.8 | - | - | - | 36.6 | - | 26.3 | 19.3 | |

| Site ID | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Raw Data | Bias Adjusted (0.72) and Annualised ⁽¹⁾ | Distance Corrected to Nearest Exposure ⁽²⁾ |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|----------|--|---|
| 412 | 35.2 | - | 22.4 | 19.5 | 16.1 | 19.2 | 14.8 | 20.4 | 26.6 | 22.3 | 31.9 | 31.7 | 23.6 | 17.1 | |
| 413 | 36.0 | 25.3 | 25.6 | 15.9 | 13.8 | 16.3 | 11.4 | 26.3 | 30.7 | 24.1 | 33.7 | 37.1 | 24.7 | 17.9 | |
| 414 | 25.4 | 16.8 | 18.1 | 17.2 | - | - | - | - | - | - | - | - | 19.4 | 13.3 | |
| 415 | 48.6 | 31.0 | 26.0 | 21.9 | 19.4 | 21.7 | 20.0 | 29.0 | 32.0 | 25.3 | 40.2 | 33.5 | 29.0 | 21.1 | |
| 416 | 35.3 | 21.0 | 17.3 | 13.7 | 11.9 | 16.6 | | 17.4 | 21.8 | 19.8 | 26.1 | 24.6 | 20.5 | 14.9 | |
| 417 | 41.8 | 21.8 | 22.6 | 18.3 | 14.2 | 18.0 | 14.0 | 20.8 | 26.2 | 21.7 | 32.7 | 26.5 | 23.2 | 16.8 | |
| 418 | 36.8 | 26.4 | - | 16.2 | - | - | - | - | 26.2 | 26.1 | 29.6 | 28.1 | 27.1 | 17.8 | |
| 419 | 42.3 | - | 20.3 | 18.7 | 15.4 | 18.9 | - | 21.3 | 25.9 | | 33.1 | 26.1 | 24.7 | 17.9 | |
| 421 | 22.7 | 11.6 | 15.2 | 14.1 | - | - | - | - | - | - | - | - | 15.9 | 10.9 | |
| 422 | 29.0 | 15.9 | 17.6 | 16.6 | 12.2 | 8.9 | 8.1 | 14.9 | 18.2 | 17.5 | 22.9 | 22.5 | 17.0 | 12.3 | |
| 423 | 18.2 | 9.8 | 13.4 | 13.6 | 10.2 | 12.2 | 5.4 | 9.7 | 13.6 | 13.4 | 19.2 | 16.8 | 13.0 | 9.4 | |
| 424 | 35.6 | 26.2 | 22.9 | 18.4 | 13.9 | 15.1 | 11.1 | 18.4 | 39.2 | 20.5 | 26.0 | - | 22.5 | 16.3 | |
| 425 | 41.1 | 23.7 | 19.5 | 23.6 | 19.8 | 19.3 | 13.9 | 23.1 | 31.8 | 26.6 | 34.1 | 33.5 | 25.8 | 18.7 | |
| 426 | 50.9 | 36.8 | 31.3 | 26.5 | 24.8 | 26.5 | 24.5 | 29.1 | 43.2 | 37.5 | 47.3 | 51.8 | 35.8 | 26.0 | |
| 427 | 53.6 | 27.5 | 25.7 | 36.6 | 31.2 | 43.3 | 27.8 | 55.8 | 47.4 | 41.1 | 58.1 | 48.7 | 41.4 | 30.0 | |
| 428 | 18.6 | 11.2 | 14.1 | 12.2 | 9.4 | 10.0 | 7.9 | 9.8 | 15.9 | 14.7 | 18.3 | 19.3 | 13.4 | 9.7 | |
| 429 | 27.2 | - | 19.0 | 17.5 | 14.7 | 13.3 | 9.7 | - | 20.6 | 19.4 | - | 25.5 | 18.5 | 13.4 | |
| 430 | 23.1 | 14.5 | 14.5 | 10.3 | 8.9 | 9.5 | 6.8 | 9.5 | 14.8 | 14.2 | 22.1 | 17.1 | 13.8 | 10.0 | |
| 431 | 22.9 | 15.4 | 15.0 | 10.4 | 9.8 | 12.2 | 8.5 | 12.5 | 17.0 | 15.2 | 19.1 | 17.1 | 14.6 | 10.6 | |
| 432 | 31.8 | 18.5 | 17.5 | 17.2 | 12.0 | 13.8 | 8.4 | 15.5 | 20.1 | - | 28.1 | 25.6 | 19.0 | 13.7 | |
| 433 | 34.2 | 22.5 | 12.2 | 15.7 | 12.9 | 14.1 | 11.0 | 17.3 | 22.3 | 20.8 | 29.7 | 25.5 | 19.8 | 14.4 | |
| 434 | 36.5 | 24.1 | 26.0 | 19.8 | 17.2 | 19.4 | 13.2 | 21.7 | 29.4 | 23.2 | 33.8 | 33.8 | 24.8 | 18.0 | |
| 435 | - | 19.8 | 18.0 | 14.2 | 12.0 | 11.3 | 10.5 | 13.4 | 19.9 | 14.0 | 25.0 | 24.6 | 16.6 | 12.0 | |
| 436 | 29.3 | 20.3 | 18.2 | 14.3 | 13.2 | 14.1 | 10.4 | 27.4 | 22.6 | 20.2 | 28.2 | 19.5 | 19.8 | 14.4 | |
| 437 | 43.4 | 31.4 | 26.1 | 15.2 | 15.6 | 18.6 | 15.3 | 23.6 | 27.7 | 26.9 | 34.0 | 27.4 | 25.4 | 18.4 | |
| 438 | 33.3 | 19.8 | 22.6 | 17.6 | 15.3 | 15.1 | 13.7 | 22.3 | 25.6 | 20.2 | | 34.1 | 21.8 | 15.8 | |
| 439 | 32.2 | 21.7 | 18.6 | 12.6 | 11.8 | 14.7 | 12.9 | 18.2 | 19.8 | 17.8 | 25.6 | 21.5 | 19.0 | 13.7 | |
| 440 | 29.7 | 15.7 | 17.2 | - | - | 13.9 | 9.0 | 18.3 | 18.9 | - | - | 21.1 | 18.0 | 13.6 | |
| 441 | 43.2 | 24.7 | 25.0 | 21.7 | 19.2 | 18.4 | 17.1 | - | 25.9 | 23.7 | 31.5 | 27.8 | 25.3 | 18.3 | |
| 442 | 37.8 | 26.4 | 23.7 | 14.8 | 16.2 | 19.3 | 22.4 | 20.4 | 27.1 | 22.4 | 28.9 | 20.8 | 23.3 | 16.9 | |
| 444 | 38.4 | 27.2 | 26.2 | 19.5 | 20.6 | 24.6 | 23.5 | 27.7 | 34.8 | 27.9 | 31.6 | 30.4 | 27.7 | 20.1 | |
| 445 | 57.0 | 35.4 | 33.9 | 29.5 | 28.6 | 26.4 | - | 28.8 | 30.2 | 27.0 | 39.8 | 31.4 | 33.5 | 24.2 | |
| 446 | 47.9 | 31.2 | 35.0 | 38.2 | 31.8 | 39.2 | - | 22.4 | 32.7 | 25.3 | 23.1 | 29.3 | 32.4 | 23.5 | |
| 447 | 30.9 | 18.0 | 19.2 | 13.8 | 12.2 | 12.6 | - | 17.2 | 20.8 | 18.2 | 26.2 | 19.5 | 19.0 | 13.7 | |
| 448 | 39.8 | 24.8 | 17.7 | 16.9 | 15.2 | 18.9 | 15.7 | 23.9 | 25.0 | 25.9 | 33.7 | 20.9 | 23.2 | 16.8 | |

| Site ID | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Raw Data | Bias Adjusted (0.72) and Annualised ⁽¹⁾ | Distance Corrected to Nearest Exposure ⁽²⁾ |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|----------|--|---|
| 449 | - | 19.7 | 24.0 | 15.2 | 15.1 | 17.6 | 19.2 | 21.1 | 23.2 | 24.3 | 31.9 | 29.7 | 21.9 | 15.9 | |
| 450 | 36.3 | 25.5 | 22.5 | 19.5 | 18.2 | 24.4 | 17.0 | - | 32.6 | 24.9 | 33.6 | 28.3 | 25.7 | 18.6 | |
| 451 | 28.2 | 21.2 | 20.7 | 13.5 | 12.6 | 15.6 | 13.1 | 18.3 | 24.5 | 18.8 | 27.4 | - | 19.4 | 14.1 | |
| 452 | 22.1 | 13.9 | 11.2 | 12.0 | 8.9 | 12.0 | 10.8 | 14.5 | 18.1 | 14.2 | 20.6 | - | 14.4 | 10.4 | |
| 453 | 14.7 | 7.8 | 11.0 | 8.0 | 5.3 | 6.0 | 2.9 | 6.1 | 8.9 | 7.2 | 14.5 | 13.1 | 8.8 | 6.4 | |
| 454 | 37.8 | 22.0 | 21.7 | 18.3 | 15.3 | 16.9 | 12.1 | 19.8 | | 22.4 | 31.2 | 30.5 | 22.5 | 16.3 | |
| 455 | 38.6 | 22.0 | 23.0 | 23.4 | 19.5 | 18.9 | 13.7 | 22.2 | 31.9 | 23.5 | 35.0 | 28.6 | 25.0 | 18.1 | |
| 456 | 33.9 | 26.1 | 23.5 | 14.8 | - | - | - | - | - | - | - | - | 24.6 | 16.8 | |
| 457 | - | 18.3 | 21.9 | 15.6 | 14.9 | 16.3 | 12.0 | 18.2 | - | - | - | - | 16.7 | 13.4 | |
| 458 | - | - | 29.2 | 17.4 | 21.3 | 23.3 | 26.6 | 24.1 | 34.6 | 30.0 | 35.9 | 33.2 | 27.6 | 20.0 | |
| 459 | - | - | - | - | - | - | 31.6 | 50.5 | 51.5 | 49.4 | 42.5 | 59.3 | 47.5 | 34.2 | |
| 460 | - | - | - | - | - | - | - | - | 24.0 | 23.6 | 28.4 | 0.5 | 19.1 | 12.4 | |

Notes:

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

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

(1) See Appendix C for details on bias adjustment and annualisation.

(2) Distance corrected to the nearest relevant public exposure

Table A.2 – Full Monthly Diffusion Tube Results for 2019 ($\mu\text{g}/\text{m}^3$)

| Site ID | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Raw Data | Bias Adjusted (0.72) and Annualised ⁽¹⁾ | Distance Corrected to Nearest Exposure ⁽²⁾ |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|----------|--|---|
| 5 | 47.5 | 37.2 | 30.6 | 37.2 | 33.8 | 27.7 | 25.0 | 21.1 | 27.9 | 34.2 | 46.8 | 35.6 | 33.7 | 24.3 | |
| 6 | 37.2 | 31.7 | 28.5 | 26.7 | 27.0 | 23.6 | 22.0 | 24.2 | 25.8 | 29.5 | 38.1 | 29.4 | 28.6 | 20.6 | |
| 7 | 44.7 | 57.2 | 45.3 | 57.2 | 42.0 | 40.0 | - | - | 41.2 | 44.2 | 48.3 | 49.3 | 46.9 | 33.8 | |
| 8 | 65.9 | 55.5 | 51.6 | 60.3 | 47.6 | 42.0 | 43.5 | 38.0 | 41.9 | 50.9 | 68.7 | 53.0 | 51.6 | 37.1 | 30.2 |
| 10 | 32.5 | 33.1 | 25.9 | 31.0 | 23.0 | 20.9 | 19.4 | 17.3 | 20.5 | 20.9 | 35.5 | 28.9 | 25.7 | 18.5 | |
| 11 | 48.5 | 47.3 | 35.1 | 50.3 | 32.5 | 31.5 | 31.2 | 29.1 | 33.7 | 41.4 | 43.0 | 40.6 | 38.7 | 27.8 | |
| 12 | 62.9 | 60.4 | 47.5 | 52.9 | 38.1 | 35.9 | 56.5 | 36.2 | 29.6 | 43.2 | 51.0 | 49.0 | 46.9 | 33.8 | |
| 14 | 26.9 | 31.2 | 23.0 | 33.5 | 19.5 | 20.6 | 16.3 | 11.8 | 20.6 | 26.4 | 41.6 | 29.2 | 25.0 | 18.0 | |
| 15 | 35.2 | 35.5 | 25.8 | 35.8 | 25.0 | 21.9 | 19.2 | 15.3 | 24.8 | 34.3 | 39.9 | 29.8 | 28.5 | 20.5 | |
| 16 | 39.8 | 36.0 | 37.1 | 37.3 | 28.5 | 26.2 | 27.0 | 21.1 | 26.5 | 34.0 | 42.0 | 33.0 | 32.4 | 23.3 | |
| 18 | 54.5 | 69.7 | 42.5 | 67.1 | 42.0 | 43.2 | 41.2 | 31.3 | 43.9 | 53.3 | 64.9 | 56.7 | 50.9 | 36.6 | 31.1 |
| 19 | 63.5 | 45.3 | 55.0 | 48.7 | 47.9 | 41.8 | 41.1 | 37.0 | - | 47.8 | 59.9 | 49.8 | 48.9 | 35.2 | |
| 20 | 51.7 | 49.1 | 36.0 | 49.4 | 34.6 | 29.8 | 28.3 | 23.9 | 34.1 | 42.3 | 45.1 | 48.7 | 39.4 | 28.4 | |
| 22 | 49.6 | 48.1 | 13.5 | 29.8 | 26.2 | 20.9 | 21.1 | 21.1 | 25.6 | 34.3 | 41.7 | 42.3 | 31.2 | 22.4 | |
| 26 | 46.8 | 51.2 | 33.8 | 50.7 | 32.0 | 28.6 | 28.0 | 25.3 | 31.9 | 40.6 | 53.8 | 45.8 | 39.0 | 28.1 | |
| 27 | 36.5 | 54.1 | 35.8 | 49.1 | 34.1 | 28.6 | 30.5 | 26.4 | 33.7 | 39.2 | 52.9 | 46.0 | 38.9 | 28.0 | |
| 29 | 38.7 | 40.9 | 46.2 | 39.7 | 24.6 | 22.3 | - | - | 24.4 | 30.8 | - | 50.3 | 35.3 | 25.4 | |
| 32 | 50.1 | 43.1 | 34.2 | 39.9 | 35.5 | 30.3 | 29.5 | 26.8 | 33.7 | - | 50.2 | 37.6 | 37.4 | 26.9 | |
| 33 | 44.0 | 40.8 | 34.3 | 38.7 | 29.7 | 26.8 | 24.7 | 25.5 | 29.5 | 37.8 | 49.7 | 36.8 | 34.9 | 25.1 | |
| 35 | 49.0 | - | - | 43.5 | 33.8 | 26.1 | 29.1 | - | 35.0 | 40.6 | 46.6 | 39.3 | 38.1 | 27.4 | |
| 36 | 47.7 | 40.7 | 31.6 | 32.2 | 29.5 | 23.0 | - | - | - | - | - | - | 34.1 | 22.6 | |
| 40 | 37.7 | 33.8 | 28.2 | 28.1 | 24.2 | 21.3 | 20.9 | 18.7 | 23.0 | 27.0 | 40.8 | - | 27.6 | 19.9 | |
| 41 | 35.5 | 52.0 | - | 53.2 | 32.1 | 29.1 | 28.3 | 25.9 | 31.2 | 39.1 | 48.9 | 44.2 | 38.1 | 27.4 | |
| 43 | 45.2 | 52.1 | 39.6 | 37.7 | 29.1 | 27.6 | 27.0 | 27.2 | 32.3 | 39.3 | 44.9 | 37.6 | 36.6 | 26.4 | |
| 44 | 35.2 | 42.0 | 30.5 | 31.1 | 24.7 | 21.6 | 22.4 | - | 24.4 | 29.1 | 31.9 | 39.5 | 30.2 | 21.7 | |
| 45 | 47.3 | 29.8 | 31.3 | 36.6 | 28.3 | - | 22.2 | 17.9 | 25.5 | 34.5 | 44.9 | 33.1 | 31.9 | 23.0 | |
| 48 | 33.4 | 29.6 | 24.8 | 23.8 | 20.2 | 14.5 | 15.4 | 16.4 | 20.3 | 27.1 | 28.7 | 28.1 | 23.5 | 16.9 | |
| 50 | 49.3 | 38.4 | 39.1 | 36.8 | 30.0 | 26.5 | 28.1 | 27.9 | 30.3 | 38.5 | 45.3 | 48.8 | 36.6 | 26.3 | |
| 54 | 28.4 | 47.7 | 37.7 | 37.3 | 28.9 | 25.4 | - | 26.3 | 28.9 | - | 36.6 | 42.8 | 34.0 | 24.5 | |
| 55 | 42.2 | 39.8 | 30.1 | 37.6 | - | 24.9 | 26.5 | 31.0 | 28.0 | 35.7 | 38.2 | 41.8 | 34.2 | 24.6 | |
| 56 | 43.6 | 55.1 | 47.4 | 38.0 | 34.3 | 18.4 | 33.2 | 34.0 | 34.6 | 33.6 | 38.9 | 51.4 | 38.5 | 27.7 | |
| 58 | 53.8 | 53.6 | 45.6 | 41.9 | 34.6 | 33.7 | 28.7 | 28.1 | 36.4 | 45.8 | 52.4 | 45.6 | 41.7 | 30.0 | |
| 59 | 63.4 | 65.2 | 49.5 | 55.4 | 44.6 | 38.2 | 42.4 | 36.4 | 40.9 | 47.6 | 64.1 | 56.2 | 50.3 | 36.2 | 29.2 |

| Site ID | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Raw Data | Bias Adjusted (0.72) and Annualised ⁽¹⁾ | Distance Corrected to Nearest Exposure ⁽²⁾ |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|----------|--|---|
| 60 | - | 55.8 | 33.5 | 45.7 | 30.6 | 1.4 | 26.8 | 22.3 | 30.2 | 37.4 | - | - | 31.5 | 22.7 | |
| 61 | 40.8 | 55.5 | 31.2 | 49.8 | 34.7 | - | 27.3 | 20.8 | 33.7 | 35.1 | 48.2 | 43.7 | 38.3 | 27.5 | |
| 63 | 35.9 | 30.1 | 23.1 | 29.6 | 23.9 | 21.6 | 18.5 | 15.3 | 21.4 | 21.7 | 34.4 | 24.1 | 25.0 | 18.0 | |
| 64 | 54.2 | 55.3 | - | 47.5 | - | 36.7 | 35.6 | 34.4 | 39.7 | 41.9 | 52.5 | 47.7 | 44.6 | 32.1 | |
| 65 | 35.2 | 37.7 | 20.7 | 35.9 | 23.6 | 19.4 | 20.6 | 16.0 | 21.7 | 26.4 | 35.4 | 28.0 | 26.7 | 19.2 | |
| 66 | 42.5 | 33.8 | 31.1 | 29.6 | 30.0 | 24.9 | 21.9 | 21.9 | 24.0 | 25.6 | - | 29.3 | 28.6 | 20.6 | |
| 67 | 51.0 | 69.4 | 55.8 | 64.6 | 59.1 | 46.7 | 41.9 | 38.4 | 44.9 | 52.2 | 61.4 | 56.6 | 53.5 | 38.5 | 31.2 |
| 68 | 37.7 | 52.4 | 33.5 | 44.1 | 32.6 | 30.4 | - | 28.5 | 30.9 | 37.5 | 40.0 | 37.2 | 36.8 | 26.5 | |
| 70 | 44.7 | 42.8 | 30.9 | 35.2 | 25.1 | 19.0 | 23.9 | 24.0 | 26.2 | 34.6 | 36.5 | 37.9 | 31.7 | 22.8 | |
| 71 | 37.9 | 37.8 | 27.2 | - | 21.3 | 19.4 | 20.5 | - | 22.2 | - | - | - | 26.6 | 20.6 | |
| 75 | 44.1 | 56.5 | 21.5 | 35.9 | 33.7 | 32.0 | 30.8 | 33.5 | 36.3 | 41.6 | - | 49.6 | 37.8 | 27.2 | |
| 83 | 36.0 | 35.2 | 27.2 | 28.4 | 27.5 | 26.4 | 22.1 | 20.7 | 24.4 | 28.7 | 39.2 | 32.3 | 29.0 | 20.9 | |
| 84 | 42.4 | 44.2 | - | 30.8 | 32.5 | 27.9 | 25.9 | 30.0 | 28.4 | 33.2 | 42.5 | 37.1 | 34.1 | 24.5 | |
| 85 | 46.8 | - | 35.8 | 37.2 | 31.3 | 27.2 | 28.3 | 27.3 | 29.7 | 35.1 | 37.5 | 40.4 | 34.2 | 24.6 | |
| 86 | 38.0 | 33.1 | 26.0 | 33.7 | 20.7 | 20.2 | 20.6 | 15.7 | 22.8 | 26.9 | 38.0 | 31.3 | 27.2 | 19.6 | |
| 87 | 26.0 | 25.8 | 19.3 | - | 18.4 | 14.9 | 15.1 | - | 14.2 | 19.7 | 27.4 | 19.5 | 20.0 | 14.4 | |
| 88 | - | 42.0 | 38.0 | 33.2 | - | 27.8 | 26.9 | 26.5 | 29.9 | 34.4 | 42.2 | 35.3 | 33.6 | 24.2 | |
| 89 | 25.1 | 31.6 | 19.9 | 31.5 | 21.6 | 20.4 | 17.3 | 16.5 | 20.3 | 23.3 | 30.3 | 23.2 | 23.4 | 16.8 | |
| 90 | 33.1 | 45.1 | 26.1 | 48.5 | 28.8 | 28.3 | 26.3 | 21.3 | 26.2 | 29.3 | 41.1 | 30.7 | 32.1 | 23.1 | |
| 91 | 37.4 | 33.5 | 27.2 | 33.7 | 29.1 | 28.0 | 20.4 | 16.2 | 26.9 | 30.8 | 43.3 | 29.5 | 29.7 | 21.3 | |
| 94 | 41.0 | 37.3 | 32.2 | 32.5 | 27.4 | 20.6 | 22.8 | 20.9 | 25.6 | 28.9 | 42.0 | 22.0 | 29.4 | 21.2 | |
| 95 | 32.4 | - | 23.4 | 30.3 | 23.9 | 17.1 | 18.1 | 15.6 | 21.2 | 29.1 | 34.5 | 28.7 | 24.9 | 17.9 | |
| 96 | 27.9 | 33.2 | 27.0 | 32.4 | 23.9 | 22.6 | 21.6 | 19.9 | - | - | - | 30.6 | 26.6 | 19.1 | |
| 97 | 47.4 | 31.5 | 36.8 | 41.1 | 33.7 | 30.8 | 28.8 | 25.9 | 29.1 | 34.8 | - | 37.7 | 34.3 | 24.7 | |
| 98 | 50.2 | 50.5 | 31.9 | 41.0 | 32.8 | 24.3 | 29.3 | 26.0 | 36.1 | 35.2 | 47.7 | 40.4 | 37.1 | 26.7 | |
| 99 | 49.3 | 36.9 | 34.3 | 33.4 | 28.5 | 22.6 | 23.7 | 20.4 | 26.1 | 33.4 | 42.6 | 33.8 | 32.1 | 23.1 | |
| 102 | 50.6 | 37.6 | 32.2 | 31.8 | 32.5 | 23.9 | 22.8 | - | - | 36.1 | 44.5 | 38.1 | 35.0 | 25.2 | |
| 104 | - | 38.4 | - | 37.1 | 22.0 | 21.4 | 21.9 | 18.1 | 23.3 | 31.6 | 36.5 | 35.7 | 28.6 | 20.6 | |
| 107 | 5.9 | 4.7 | 32.4 | - | 28.6 | 25.0 | 25.9 | 26.2 | 26.0 | 34.7 | - | - | 23.3 | 16.7 | |
| 110 | 37.5 | 31.2 | 27.7 | 29.3 | 24.5 | 18.5 | 18.0 | 15.2 | 20.9 | 21.8 | 37.1 | 30.3 | 26.0 | 18.7 | |
| 115 | 40.9 | 54.8 | 34.7 | 50.4 | 32.1 | 31.1 | 30.0 | 27.2 | 29.9 | 40.5 | 44.9 | 42.9 | 38.3 | 27.5 | |
| 116 | 45.1 | 51.5 | 40.1 | 46.7 | - | 33.4 | 32.1 | 30.5 | 36.6 | 40.3 | 40.9 | 45.4 | 40.2 | 28.9 | |
| 117 | 56.2 | 48.8 | 42.3 | 45.3 | 36.4 | 35.7 | 29.8 | 27.3 | 30.3 | 44.1 | 51.5 | 38.3 | 40.5 | 29.1 | |
| 118 | 40.4 | 47.1 | 30.0 | 39.7 | 27.2 | 24.5 | 24.0 | 23.3 | 35.3 | 31.8 | 41.8 | 38.5 | 33.6 | 24.2 | |
| 119 | 40.8 | 54.6 | 34.0 | 41.4 | 29.3 | 28.2 | 28.0 | 28.9 | 32.1 | 38.0 | 43.6 | 43.3 | 36.8 | 26.5 | |

| Site ID | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Raw Data | Bias Adjusted (0.72) and Annualised ⁽¹⁾ | Distance Corrected to Nearest Exposure ⁽²⁾ |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|----------|--|---|
| 121 | 65.3 | 68.9 | 52.1 | 65.2 | 53.5 | 49.8 | 46.5 | 46.2 | 49.3 | 53.8 | 58.4 | 57.0 | 55.5 | 39.9 | 26.8 |
| 122 | 46.2 | 53.3 | 36.9 | 46.1 | 37.4 | 39.0 | 32.0 | 28.1 | 34.2 | 38.3 | 50.3 | 33.3 | 39.6 | 28.5 | |
| 123 | 55.4 | 53.1 | 50.4 | 51.9 | 49.0 | 42.0 | 42.6 | 36.6 | 36.2 | 47.4 | 52.5 | 52.2 | 47.4 | 34.1 | |
| 124 | 38.5 | 53.6 | 43.1 | 56.4 | 37.9 | | 41.7 | | | 45.8 | 57.3 | 42.8 | 46.3 | 33.3 | |
| 125 | 63.9 | 60.7 | 56.4 | 57.8 | 46.3 | 46.3 | 45.7 | 40.3 | 44.1 | 51.7 | 53.5 | 50.7 | 51.5 | 37.0 | 30.5 |
| 126 | 46.4 | 44.1 | 39.6 | 52.6 | 37.6 | 30.5 | 31.8 | 28.2 | 35.7 | 42.8 | 50.3 | 41.4 | 40.1 | 28.8 | |
| 127 | 44.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 128 | 42.9 | 40.6 | 31.2 | 36.3 | 26.2 | 24.2 | 22.4 | 21.0 | 29.1 | 35.9 | 38.8 | 39.1 | 32.3 | 23.2 | |
| 129 | 51.6 | 50.8 | 35.6 | 47.4 | 33.7 | 33.1 | 28.3 | 22.7 | 31.7 | 42.7 | 43.4 | 42.3 | 38.6 | 27.8 | |
| 131 | 46.7 | 55.8 | 32.6 | 43.9 | 35.2 | 33.6 | 31.6 | 34.6 | 38.8 | 44.7 | 48.9 | 49.7 | 41.3 | 29.7 | |
| 132 | 41.4 | 41.5 | 29.1 | 41.3 | 31.2 | 25.3 | 25.1 | 19.5 | 29.4 | 36.8 | 54.1 | 34.2 | 34.1 | 24.5 | |
| 134 | 54.9 | 55.9 | 43.4 | 49.2 | 40.2 | 36.3 | | 39.1 | 38.5 | 45.9 | 47.7 | 49.5 | 45.5 | 32.7 | |
| 180 | 32.1 | 43.5 | 31.0 | 35.8 | 28.1 | 25.4 | 27.7 | 23.5 | 30.4 | 35.3 | 46.2 | 38.5 | 33.1 | 23.8 | |
| 182 | 31.5 | 35.8 | 33.7 | 33.5 | 29.8 | 24.0 | 23.1 | 20.4 | 26.3 | 30.6 | 39.5 | 34.6 | 30.2 | 21.8 | |
| 197 | 40.6 | 48.0 | 37.0 | 44.2 | 31.9 | 26.8 | 29.2 | 28.7 | 30.3 | 36.2 | 39.0 | 40.8 | 36.1 | 25.9 | |
| 198 | 35.6 | 51.0 | 38.5 | 46.7 | 35.7 | 30.4 | 28.6 | 31.0 | 29.9 | 36.2 | 43.4 | 46.5 | 37.8 | 27.2 | |
| 206 | 47.5 | 53.0 | 45.5 | 48.2 | 40.5 | 37.0 | 35.9 | 33.5 | 38.4 | 37.0 | 41.0 | 42.3 | 41.7 | 30.0 | |
| 207 | 46.8 | 40.1 | 39.5 | - | 35.9 | 35.7 | 30.7 | 30.4 | 32.3 | 35.2 | 43.7 | 35.4 | 36.9 | 26.5 | |
| 208 | 47.4 | 42.8 | 40.9 | 36.4 | 35.1 | 35.4 | 30.1 | 28.9 | 27.2 | 33.5 | 40.7 | 36.1 | 36.2 | 26.0 | |
| 209 | 32.8 | 51.2 | 47.9 | 43.5 | 36.8 | 35.4 | 33.3 | 28.2 | 32.8 | 32.3 | 42.5 | 37.9 | 37.9 | 27.3 | |
| 210 | 41.6 | 41.6 | 35.9 | 40.5 | 29.6 | 30.6 | 27.3 | - | 35.0 | 36.5 | 42.2 | 34.4 | 35.9 | 25.8 | |
| 211 | 34.4 | 43.5 | 34.1 | 45.2 | - | - | - | 26.4 | 30.2 | - | 42.9 | 34.0 | 36.3 | 23.5 | |
| 212 | 25.3 | 28.3 | 24.9 | 32.1 | 24.0 | 23.8 | 19.0 | 14.6 | 22.3 | - | 33.8 | 22.9 | 24.6 | 17.7 | |
| 213 | 36.9 | 46.4 | 35.5 | 41.7 | 30.9 | 30.8 | 29.3 | 24.3 | 25.9 | - | 43.2 | 32.9 | 34.3 | 24.7 | |
| 240 | 43.0 | 44.7 | 30.4 | 46.0 | 27.7 | 26.2 | 24.0 | 24.4 | 28.8 | 36.6 | 39.8 | - | 33.8 | 24.3 | |
| 241 | 38.4 | 44.3 | 29.9 | 42.4 | 27.5 | 25.8 | - | - | 29.7 | 35.3 | 42.1 | 39.2 | 35.5 | 25.5 | |
| 242 | 54.0 | 56.2 | 41.9 | 51.3 | 42.9 | 38.4 | 34.8 | 36.4 | 39.6 | 44.7 | 53.1 | 48.3 | 45.1 | 32.5 | |
| 243 | 53.3 | 44.6 | 40.5 | 38.2 | 36.5 | 29.5 | 29.5 | 30.8 | 34.8 | 36.3 | 48.8 | 43.2 | 38.8 | 27.9 | |
| 244 | 39.4 | 68.9 | 39.4 | 53.1 | 41.2 | 34.4 | 37.7 | - | 40.9 | 39.8 | 59.6 | 54.9 | 46.3 | 33.3 | |
| 245 | 43.7 | 49.5 | 37.0 | 59.8 | 36.8 | 32.2 | 32.4 | 27.3 | 39.5 | 39.6 | 54.3 | 53.4 | 42.1 | 30.3 | |
| 247 | 43.4 | 48.3 | 29.7 | - | 28.0 | 24.0 | 22.0 | 22.6 | 28.5 | 36.2 | 45.1 | 39.4 | 33.4 | 24.0 | |
| 249 | 36.7 | 47.9 | 26.8 | 41.6 | 24.1 | 23.3 | 21.7 | 22.1 | 26.4 | 36.2 | 43.4 | 38.5 | 32.4 | 23.3 | |
| 251 | 41.3 | 22.2 | 27.2 | 41.1 | 21.9 | 25.3 | - | 21.4 | 26.7 | 32.6 | 44.8 | 3.8 | 28.0 | 20.2 | |
| 256 | 57.1 | 51.9 | 45.1 | - | 33.7 | 32.2 | 33.4 | 36.3 | 40.6 | 44.4 | 51.8 | 47.3 | 43.1 | 31.0 | |
| 275 | 37.9 | 37.7 | 28.0 | 27.7 | 20.4 | 18.7 | 17.3 | 16.1 | 22.0 | 29.1 | 37.2 | 34.6 | 27.2 | 19.6 | |

| Site ID | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Raw Data | Bias Adjusted (0.72) and Annualised ⁽¹⁾ | Distance Corrected to Nearest Exposure ⁽²⁾ |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|----------|--|---|
| 276 | 42.4 | - | 33.8 | 38.0 | 28.8 | 27.1 | 27.2 | 27.5 | 36.2 | 32.6 | 42.2 | - | 33.6 | 24.2 | |
| 277 | 41.6 | 50.1 | 35.3 | 43.6 | 30.8 | 26.6 | 29.0 | 29.2 | 32.7 | 32.2 | 40.6 | 42.2 | 36.2 | 26.0 | |
| 278 | 35.6 | 44.6 | 34.1 | 44.2 | 32.2 | 25.2 | 29.4 | 27.1 | 31.2 | 35.0 | 39.9 | 39.3 | 34.8 | 25.0 | |
| 279 | 62.0 | 54.4 | 52.0 | 51.1 | 41.2 | 38.5 | 37.2 | 33.9 | 40.7 | 48.3 | 54.1 | 53.4 | 47.2 | 34.0 | |
| 280 | 40.7 | 59.1 | 36.1 | 63.4 | 36.2 | 32.9 | 31.9 | 29.2 | 36.4 | 45.8 | 56.2 | 50.6 | 43.2 | 31.1 | |
| 281 | 58.3 | 54.2 | 45.5 | 51.7 | 35.7 | 37.5 | 35.5 | 31.1 | 36.5 | 43.8 | 54.3 | 51.7 | 44.7 | 32.1 | |
| 282 | 46.1 | 54.0 | 47.0 | 48.1 | 46.8 | 34.9 | 37.6 | 37.5 | 40.2 | 48.1 | 52.3 | 54.3 | 45.6 | 32.8 | |
| 284 | 27.0 | 36.3 | 31.0 | 38.0 | 30.1 | 30.8 | 28.6 | 24.1 | 29.9 | 36.5 | - | 31.3 | 31.2 | 22.5 | |
| 285 | 46.9 | 46.1 | - | 44.7 | 28.3 | 24.0 | 23.8 | 22.8 | 30.0 | 41.0 | 49.0 | 44.0 | 36.4 | 26.2 | |
| 286 | 31.2 | 48.5 | - | 36.9 | 30.0 | 26.0 | 26.3 | 24.2 | 29.4 | 37.6 | 48.1 | - | 33.8 | 24.3 | |
| 287 | 47.8 | 43.2 | 30.7 | - | 31.0 | 26.2 | 23.3 | 20.3 | 27.3 | - | 46.6 | - | 32.9 | 23.7 | |
| 288 | 45.5 | 47.7 | 37.8 | 46.1 | 35.0 | 27.0 | 27.3 | 26.3 | 33.5 | 38.0 | 47.6 | 41.2 | 37.7 | 27.2 | |
| 289 | 54.5 | 50.7 | 38.3 | 44.3 | 24.3 | 28.3 | 31.2 | 25.9 | 30.4 | 35.2 | 47.8 | 43.9 | 37.9 | 27.3 | |
| 291 | 52.7 | 54.2 | 46.6 | 49.7 | 41.6 | - | 39.3 | 36.6 | 39.5 | 46.6 | 51.0 | 50.1 | 46.2 | 33.2 | |
| 295 | 35.8 | 41.5 | 43.7 | 44.8 | 32.7 | 30.5 | 30.2 | - | 31.8 | - | 44.1 | 42.0 | 37.7 | 27.1 | |
| 296 | 47.7 | 42.5 | 42.0 | 47.3 | 32.4 | 30.0 | 30.5 | 29.0 | 34.1 | - | 42.7 | 44.0 | 38.4 | 27.6 | |
| 323 | 46.5 | 50.2 | 38.2 | 42.6 | 34.0 | 27.9 | 30.4 | 29.8 | 33.8 | 32.9 | 46.7 | 42.2 | 37.9 | 27.3 | |
| 331 | 41.8 | 56.6 | 36.5 | 51.0 | 36.5 | 36.4 | 32.7 | 33.0 | 37.3 | 42.3 | 51.5 | 45.2 | 41.7 | 30.0 | |
| 334 | - | 48.2 | 32.4 | 46.6 | 36.5 | 33.7 | 29.0 | 25.8 | 29.7 | - | 48.7 | 47.6 | 37.8 | 27.2 | |
| 335 | 33.5 | 46.1 | 31.9 | 44.9 | 33.6 | 32.0 | 27.5 | 22.2 | 29.4 | 36.4 | 42.9 | 32.6 | 34.4 | 24.8 | |
| 336 | 49.6 | 47.6 | 33.7 | 49.9 | 39.6 | 32.6 | 31.4 | 14.9 | 35.3 | 42.5 | 53.2 | 42.9 | 39.4 | 28.4 | |
| 337 | 60.2 | 54.4 | 49.9 | 44.9 | 47.0 | 39.4 | - | - | 40.6 | - | 55.3 | 53.6 | 49.5 | 35.6 | |
| 338 | 48.5 | 48.9 | 36.9 | 48.4 | 36.2 | 33.4 | 30.8 | 28.5 | 35.1 | 39.3 | 52.9 | - | 39.9 | 28.7 | |
| 339 | 48.6 | 55.6 | 38.9 | 63.6 | 42.3 | 37.9 | 34.3 | 31.2 | 39.2 | 47.3 | 58.8 | 48.5 | 45.5 | 32.7 | |
| 340 | 64.0 | 64.6 | 58.4 | 59.5 | 54.1 | 47.2 | 45.8 | 51.2 | 38.5 | 53.2 | 60.8 | 62.8 | 55.0 | 39.6 | 33.0 |
| 341 | 56.4 | 54.0 | 47.5 | 57.2 | 43.2 | 43.4 | 39.7 | 35.3 | 42.1 | 52.6 | 56.6 | 51.7 | 48.3 | 34.8 | |
| 342 | - | 59.5 | 43.8 | 67.7 | 40.4 | 41.3 | - | 33.0 | 39.1 | 48.4 | 58.2 | 47.3 | 47.9 | 34.4 | |
| 343 | 36.2 | - | 38.6 | 42.9 | 33.7 | 31.9 | 29.0 | 26.0 | 32.6 | 39.3 | 47.4 | 39.6 | 36.1 | 26.0 | |
| 344 | - | 51.3 | 39.2 | 59.7 | 45.3 | 41.3 | 33.7 | 26.9 | 37.9 | - | 51.9 | 43.0 | 43.0 | 30.9 | |
| 345 | 50.8 | 45.9 | - | 41.8 | 39.3 | 33.6 | - | - | 30.7 | 37.3 | 60.4 | 42.9 | 42.5 | 30.6 | |
| 346 | 47.3 | 43.9 | 37.0 | 40.7 | 31.7 | 27.1 | - | - | 31.9 | 45.3 | 55.7 | 40.4 | 40.1 | 28.8 | |
| 347 | 30.5 | 42.2 | 32.2 | 37.1 | 29.3 | 26.9 | 25.9 | 27.3 | 30.8 | 36.6 | 46.4 | 37.6 | 33.6 | 24.1 | |
| 348 | 46.2 | 44.1 | 39.6 | 42.4 | 33.8 | 29.9 | 30.9 | 22.0 | 31.7 | 39.6 | 49.4 | 40.3 | 37.5 | 27.0 | |
| 349 | 44.1 | 43.4 | - | 37.7 | 34.4 | 26.6 | 27.9 | 25.3 | - | 36.6 | 43.7 | 38.5 | 35.8 | 25.8 | |
| 350 | 49.4 | - | 43.6 | 44.8 | 34.1 | 33.0 | 33.3 | 34.4 | 37.0 | 40.6 | 45.7 | 44.9 | 40.1 | 28.8 | |

| Site ID | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Raw Data | Bias Adjusted (0.72) and Annualised ⁽¹⁾ | Distance Corrected to Nearest Exposure ⁽²⁾ |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|----------|--|---|
| 351 | 32.9 | 42.1 | 25.3 | 38.1 | 26.9 | 23.3 | 22.1 | 17.8 | - | - | - | - | 28.6 | 21.5 | |
| 352 | 38.0 | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 356 | 38.0 | 49.3 | 33.4 | 42.8 | 29.6 | 25.8 | 24.3 | 21.2 | 26.9 | 35.1 | 44.5 | 37.8 | 34.1 | 24.5 | |
| 358 | 43.3 | 45.4 | 32.4 | 37.7 | 28.0 | 26.4 | 25.1 | 23.2 | 30.2 | | | | 32.4 | 23.3 | |
| 362 | 51.0 | 51.9 | 41.9 | 52.0 | 39.2 | 38.4 | - | 29.1 | 38.1 | 44.2 | 50.8 | 43.1 | 43.6 | 31.4 | |
| 363 | 44.6 | 45.4 | 34.7 | 42.6 | 30.7 | 30.5 | 38.3 | 23.1 | 33.6 | 34.2 | 47.4 | 36.3 | 36.8 | 26.5 | |
| 364 | 50.3 | 55.9 | 38.7 | 39.8 | 38.3 | 36.6 | 28.1 | 32.7 | 41.2 | 41.4 | 53.1 | 44.5 | 41.7 | 30.0 | |
| 365 | 33.9 | 49.3 | 31.7 | 37.3 | 28.1 | 23.3 | 21.1 | - | - | - | - | - | 32.1 | 22.8 | |
| 367 | 49.2 | 45.0 | 38.6 | 35.5 | 30.7 | 25.3 | 22.7 | - | 29.5 | - | - | - | 34.6 | 25.1 | |
| 373 | 54.2 | 39.0 | 38.7 | 34.8 | 30.6 | 30.6 | 17.1 | 26.4 | 31.5 | 35.4 | 43.9 | 38.6 | 35.1 | 25.2 | |
| 375 | 28.1 | 25.6 | 15.2 | 21.8 | 15.0 | 13.8 | 12.6 | 10.3 | 14.8 | 17.8 | 28.6 | 20.1 | 18.6 | 13.4 | |
| 376 | 34.9 | - | 35.2 | 38.7 | 30.9 | 28.7 | 25.0 | 22.2 | 29.1 | 35.2 | 44.4 | 37.0 | 32.8 | 23.6 | |
| 377 | - | 48.4 | 40.1 | 32.4 | 34.9 | 29.8 | 31.9 | 29.0 | 32.2 | 40.0 | 48.6 | 42.5 | 37.3 | 26.8 | |
| 385 | 32.7 | 39.7 | 24.9 | 34.5 | 24.4 | 22.0 | 22.9 | 18.4 | - | - | 38.6 | 34.1 | 29.2 | 21.0 | |
| 386 | 43.6 | 40.9 | 35.4 | 34.3 | 28.9 | 21.1 | 27.3 | 30.1 | 29.9 | 34.5 | 44.4 | 43.2 | 34.5 | 24.8 | |
| 387 | 32.3 | 29.6 | 21.2 | 24.5 | 22.6 | 15.2 | 15.1 | 14.6 | 17.9 | 25.1 | 32.0 | 27.5 | 23.1 | 16.6 | |
| 388 | 31.5 | 29.3 | 23.1 | 22.5 | 21.5 | 13.7 | 15.5 | 14.8 | 17.2 | 23.3 | 30.9 | 26.1 | 22.4 | 16.2 | |
| 389 | 61.9 | 64.3 | 50.3 | 55.3 | 45.7 | 45.2 | 42.2 | 39.1 | 46.3 | 52.7 | 50.0 | 54.0 | 50.6 | 36.4 | |
| 390 | 49.9 | 40.5 | 40.5 | 43.2 | 28.6 | 31.6 | 30.9 | 32.6 | 36.4 | 36.2 | 42.5 | 44.3 | 38.1 | 27.4 | |
| 391 | 40.1 | 44.8 | 40.5 | 37.4 | 33.0 | 27.1 | 27.4 | 27.4 | 24.8 | 29.6 | - | 38.5 | 33.7 | 24.2 | |
| 393 | 29.0 | 28.8 | 21.5 | 20.5 | 19.6 | 17.2 | 14.3 | 12.7 | 17.6 | 22.4 | 27.8 | 23.0 | 21.2 | 15.3 | |
| 394 | 22.8 | 26.6 | 20.9 | 20.0 | 16.9 | 20.6 | 13.6 | 11.2 | 15.4 | 19.4 | 30.5 | 21.9 | 20.0 | 14.4 | |
| 395 | 34.6 | 27.1 | 19.9 | 20.9 | 20.1 | 14.3 | 13.1 | 11.7 | 16.4 | 20.9 | 31.7 | 20.2 | 20.9 | 15.0 | |
| 396 | 32.6 | 27.5 | - | 20.1 | 25.6 | 17.0 | 16.3 | 15.9 | 21.0 | 23.0 | 37.7 | 23.0 | 23.6 | 17.0 | |
| 397 | 33.5 | 33.8 | 24.1 | 25.8 | 23.4 | 17.4 | 19.0 | 15.2 | 21.1 | 27.2 | 36.4 | 30.4 | 25.6 | 18.4 | |
| 398 | 19.9 | 29.3 | 20.3 | 24.7 | 20.5 | 16.7 | 15.7 | - | 18.2 | 23.3 | 31.3 | 25.1 | 22.3 | 16.0 | |
| 399 | 43.6 | 46.8 | 29.7 | 47.5 | 30.8 | 24.6 | 30.4 | 23.9 | 33.8 | 41.5 | 48.6 | 41.7 | 36.9 | 26.6 | |
| 400 | 32.3 | 39.2 | 25.7 | 37.8 | 23.9 | 20.1 | 19.4 | 18.8 | 24.2 | 27.5 | - | 32.2 | 27.4 | 19.7 | |
| 401 | 38.8 | 37.3 | 32.4 | 41.5 | 26.3 | - | 27.9 | 23.5 | 33.2 | - | - | 38.0 | 33.2 | 23.9 | |
| 403 | 46.8 | 51.3 | 38.2 | 50.0 | 40.0 | 33.0 | 34.3 | - | 37.8 | 39.4 | 44.3 | 44.3 | 41.8 | 30.0 | |
| 404 | 40.2 | 40.6 | 28.7 | 50.6 | 33.1 | 24.2 | 43.9 | 24.0 | 30.7 | 35.1 | 41.4 | 36.4 | 35.7 | 25.7 | |
| 405 | 27.5 | 28.1 | 17.2 | 20.2 | 17.6 | 14.1 | 13.6 | - | 14.3 | 21.2 | 25.2 | 22.6 | 20.1 | 14.5 | |
| 406 | 50.3 | 55.6 | 28.7 | 54.2 | 37.1 | 32.4 | 31.8 | 35.4 | 37.2 | 45.0 | - | 36.5 | 40.4 | 29.1 | |
| 407 | 34.3 | - | 25.5 | 28.5 | 21.2 | - | 16.0 | 16.7 | 20.8 | 24.3 | 33.6 | 33.5 | 25.4 | 18.3 | |
| 408 | 61.9 | 58.0 | 45.4 | 46.7 | 39.6 | 34.7 | 33.8 | 33.8 | 39.9 | 41.1 | 51.5 | 50.2 | 44.7 | 32.2 | |

| Site ID | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Raw Data | Bias Adjusted (0.72) and Annualised ⁽¹⁾ | Distance Corrected to Nearest Exposure ⁽²⁾ |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|----------|--|---|
| 410 | - | - | 32.0 | - | - | - | - | - | - | - | - | - | - | - | |
| 412 | 38.8 | 34.9 | 31.7 | 29.5 | 24.8 | 22.2 | 24.6 | 21.1 | 24.3 | 28.9 | 39.8 | 31.9 | 29.4 | 21.1 | |
| 413 | 40.5 | 33.2 | 31.8 | 43.1 | 27.5 | 27.8 | 25.2 | 21.7 | 25.6 | 35.2 | 47.9 | 36.8 | 33.0 | 23.8 | |
| 414 | 31.3 | 31.6 | 23.3 | 31.4 | 20.5 | 20.1 | 18.8 | 15.6 | 20.8 | 26.9 | 25.9 | 24.5 | 24.2 | 17.4 | |
| 415 | 43.2 | 43.9 | 39.0 | 37.6 | 32.8 | 25.3 | 27.9 | 31.7 | 32.7 | 34.2 | 39.9 | 43.4 | 36.0 | 25.9 | |
| 416 | 34.6 | 33.8 | 27.3 | 24.4 | 20.2 | 17.7 | 20.2 | 18.3 | 21.7 | 25.1 | 31.2 | 28.7 | 25.3 | 18.2 | |
| 417 | 43.7 | 39.5 | 32.8 | 36.0 | 26.3 | 22.0 | 23.6 | 21.3 | 27.2 | 31.5 | 39.2 | 35.0 | 31.5 | 22.7 | |
| 418 | 32.1 | 33.3 | 27.2 | 27.9 | 21.8 | 24.3 | 22.5 | 21.0 | 29.8 | 33.1 | 39.1 | 37.5 | 29.1 | 21.0 | |
| 419 | 42.4 | 47.2 | 32.4 | 32.3 | 25.7 | 22.6 | 23.5 | 20.9 | 25.9 | 32.0 | 38.1 | 38.7 | 31.8 | 22.9 | |
| 420 | 21.5 | 25.8 | 18.1 | 21.3 | 14.2 | 15.1 | 13.7 | - | - | - | 28.3 | - | 19.7 | 13.2 | |
| 421 | 30.0 | 25.2 | 16.5 | 27.3 | 19.2 | 14.5 | 12.2 | 9.8 | 16.3 | 20.4 | 25.3 | 20.6 | 19.8 | 14.2 | |
| 422 | 32.0 | 33.0 | 18.8 | 28.8 | 17.4 | 15.7 | 14.8 | 13.2 | 19.0 | 27.2 | 35.9 | 25.7 | 23.5 | 16.9 | |
| 423 | 23.6 | 18.0 | 15.6 | 20.9 | 15.1 | 11.4 | 10.1 | 7.5 | 13.3 | 17.4 | 25.9 | 15.2 | 16.2 | 11.6 | |
| 424 | 38.4 | 39.3 | 26.2 | 30.6 | 21.6 | 17.8 | 19.8 | 17.3 | 22.4 | 29.6 | 39.5 | 40.0 | 28.5 | 20.5 | |
| 425 | 43.4 | 39.9 | 29.1 | 45.4 | - | 35.8 | 25.4 | 24.4 | 31.3 | 33.4 | 49.8 | 37.5 | 36.0 | 25.9 | |
| 426 | 68.9 | 59.9 | 41.5 | 48.9 | 38.9 | 33.2 | 35.1 | 30.7 | 38.4 | 50.2 | 56.0 | 49.8 | 46.0 | 33.1 | |
| 427 | 29.6 | 67.8 | 37.5 | 65.7 | 46.9 | 45.0 | 51.7 | 45.6 | 51.8 | - | 72.8 | 54.5 | 51.7 | 37.2 | 18.6 |
| 428 | 31.8 | 16.1 | 18.2 | 19.6 | 14.0 | 14.2 | 12.5 | 9.4 | 12.7 | 19.1 | 23.7 | 20.0 | 17.6 | 12.7 | |
| 429 | 34.8 | 30.9 | 23.1 | 30.3 | 21.8 | 20.2 | 16.2 | 13.9 | 22.4 | 23.7 | 40.0 | 27.4 | 25.4 | 18.3 | |
| 430 | 20.3 | 18.7 | - | 14.2 | 13.6 | 11.8 | 12.7 | 12.8 | 15.4 | 18.5 | 26.7 | 19.8 | 16.8 | 12.1 | |
| 431 | 23.6 | 26.0 | 15.1 | 16.9 | 15.7 | 29.9 | 13.1 | 11.0 | 16.6 | 16.9 | 27.5 | 21.7 | 19.5 | 14.0 | |
| 432 | 31.9 | 41.3 | - | - | - | 15.4 | 15.5 | 13.4 | 18.2 | 22.7 | 33.5 | 28.0 | 24.4 | 17.6 | |
| 433 | 34.7 | 37.2 | 24.9 | 29.3 | 18.1 | 18.3 | 18.2 | 18.9 | 23.2 | 26.7 | 31.0 | 35.5 | 26.3 | 18.9 | |
| 434 | 48.5 | 38.5 | 33.4 | 35.8 | 29.1 | 22.1 | 23.0 | 18.3 | 24.9 | 32.5 | 46.1 | 38.1 | 32.5 | 23.4 | |
| 435 | 33.7 | 26.5 | 23.7 | - | 20.3 | 17.7 | - | 15.5 | 22.4 | - | 41.7 | 28.3 | 25.5 | 18.4 | |
| 436 | 27.7 | 27.1 | 22.0 | 26.2 | 24.7 | 19.4 | 19.0 | 17.0 | 23.6 | 27.4 | 34.2 | 29.4 | 24.8 | 17.8 | |
| 437 | - | 53.6 | 38.9 | 36.6 | 34.0 | 30.0 | 30.0 | 28.7 | 33.5 | 41.9 | 45.0 | 40.9 | 37.6 | 27.0 | |
| 438 | - | - | - | - | - | - | - | 17.8 | - | 28.2 | 37.3 | 35.4 | 29.7 | 21.3 | |
| 439 | - | - | - | - | - | - | - | - | 28.7 | 29.0 | 32.8 | 28.2 | 29.7 | 20.0 | |
| 440 | - | - | - | - | - | - | - | - | 29.2 | 26.9 | 34.5 | 26.5 | 29.3 | 19.7 | |
| 441 | - | - | - | - | - | - | - | - | 41.6 | 39.7 | 53.4 | 33.7 | 42.1 | 28.4 | |
| 442 | - | - | - | - | - | - | - | - | 36.7 | 33.0 | 37.5 | 27.8 | 33.7 | 22.7 | |
| 443 | - | - | - | - | - | - | - | - | 52.8 | 49.5 | 56.8 | 43.8 | 50.7 | 34.2 | |
| 444 | - | - | - | - | - | - | - | - | 39.3 | 40.5 | 45.3 | 26.3 | 37.8 | 25.5 | |
| 445 | - | - | - | - | - | - | - | - | 53.3 | 50.3 | 59.6 | 49.5 | 53.2 | 35.9 | |

| Site ID | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Raw Data | Bias Adjusted (0.72) and Annualised ⁽¹⁾ | Distance Corrected to Nearest Exposure ⁽²⁾ |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|----------|--|---|
| 446 | - | - | - | - | - | - | - | - | 49.5 | 48.6 | 53.2 | 43.7 | 48.8 | 32.9 | |
| 447 | - | - | - | - | - | - | - | - | 28.3 | 28.0 | 36.9 | 25.1 | 29.6 | 19.9 | |
| 448 | - | - | - | - | - | - | - | - | 34.8 | 36.8 | 42.1 | 32.8 | 36.6 | 24.7 | |
| 449 | - | - | - | - | - | - | - | - | 31.3 | 30.6 | 43.2 | 30.9 | 34.0 | 22.9 | |
| 450 | - | - | - | - | - | - | - | - | 39.7 | 35.9 | 47.4 | 22.2 | 36.3 | 24.5 | |
| 451 | - | - | - | - | - | - | - | - | - | - | 41.6 | 28.1 | - | - | |
| 452 | - | - | - | - | - | - | - | - | - | - | 36.5 | 22.6 | - | - | |
| 453 | - | - | - | - | - | - | - | - | - | - | 26.5 | 12.9 | - | - | |
| 454 | - | - | - | - | - | - | - | - | - | - | - | 36.0 | - | - | |
| 455 | - | - | - | - | - | - | - | - | - | - | 49.6 | 32.8 | - | - | |
| 456 | - | - | - | - | - | - | - | - | - | - | - | 37.4 | - | - | |

Appendix B: A Summary of Local Air Quality Management

Purpose of an Annual Progress Report

This report fulfils the requirements of the Local Air Quality Management (LAQM) process as set out in the Environment Act 1995, as amended by the Environment Act 2021, and associated government guidance. 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 being achieved. Where exceedances occur, or are likely to occur, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) within 18 months of declaration setting out the measures it intends to put in place in pursuit of the objectives. Action plans should then be reviewed and updated where necessary at least every five years.

For Local Authorities in Wales, an Annual Progress Report replaces all other formal reporting requirements and have a very clear purpose of updating the general public on air quality, including what ongoing actions are being taken locally to improve it if necessary.

Air Quality Objectives

The air quality objectives applicable to LAQM in Wales are set out in the Air Quality (Wales) Regulations 2000, No. 1940 (Wales 138), Air Quality (Amendment) (Wales) Regulations 2002, No 3182 (Wales 298), and are shown in Table B.1.

The table shows the objectives in units of micrograms per cubic metre $\mu\text{g}/\text{m}^3$ (milligrams per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedances in each year that are permitted (where applicable).

Table B.1 – Air Quality Objectives Included in Regulations for the Purpose of LAQM in Wales

| Pollutant | Air Quality Objective: Concentration | Air Quality Objective: Measured as | Date to be achieved by |
|---|---|---|-------------------------------|
| Nitrogen Dioxide (NO₂) | 200µg/m ³ not to be exceeded more than 18 times a year | 1-hour mean | 31.12.2005 |
| Nitrogen Dioxide (NO₂) | 40µg/m ³ | Annual mean | 31.12.2005 |
| Particulate Matter (PM₁₀) | 50µg/m ³ , not to be exceeded more than 35 times a year | 24-hour mean | 31.12.2010 |
| Particulate Matter (PM₁₀) | 40µg/m ³ | Annual mean | 31.12.2010 |
| Sulphur dioxide (SO₂) | 350µg/m ³ , not to be exceeded more than 24 times a year | 1-hour mean | 31.12.2004 |
| Sulphur dioxide (SO₂) | 125µg/m ³ , not to be exceeded more than 3 times a year | 24-hour mean | 31.12.2004 |
| Sulphur dioxide (SO₂) | 266µg/m ³ , not to be exceeded more than 35 times a year | 15-minute mean | 31.12.2005 |
| Benzene | 16.25µg/m ³ | Running annual mean | 31.12.2003 |
| Benzene | 5µg/m ³ | Annual mean | 31 12 2010 |
| 1,3 Butadiene | 2.25µg/m ³ | Running annual mean | 31.12.2003 |
| Carbon Monoxide | 10.0mg/m ³ | Maximum Daily Running 8-Hour mean | 31.12.2003 |
| Lead | 0.25µg/m ³ | Annual Mean | 31.12.2008 |

Appendix C: Air Quality Monitoring Data QA/QC

QA/QC of Diffusion Tube Monitoring

Swansea Council employs the services of SOCOTEC, formerly ESG Didcot for the diffusion tube network. The method used is 50% TEA in acetone and the Bias factor for 2020 was 0.76 and 0.75 for 2019 (spreadsheet version 03/23).

Diffusion Tube Annualisation

The [LAQM.TG\(22\)](#) states that annualisation is required for any site which has a data capture of less than 75%, but greater than 25%. Annualisation was completed using version 1.2 of the 'Diffusion Tube Data Processing Tool'. Thirty diffusion tube sites required annualisation in 2020, and 20 sites in 2019. Calculations are shown in Table C.2 and Table C.3.

Four continuous background monitoring locations were used, the four locations within a 50 mile radius selected to annualise the data are:

- Swansea Cwm Level Park;
- Cardiff Centre;
- Cwmbran Crownbridge; and
- Newport

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2019/2020 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. [LAQM.TG22](#) provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO₂ continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Swansea Council have applied a local bias adjustment factor of 0.72 to the 2020 and 2019 monitoring data. A summary of bias adjustment factors used by Swansea Council over the past five years is presented in Table C.1.

Table C.1 – Bias Adjustment Factor

| Year | Local or National | If National, Version of National Spreadsheet | Adjustment Factor |
|------|-------------------|--|-------------------|
| 2020 | Local | - | 0.72 |
| 2019 | Local | - | 0.72 |
| 2018 | Local | - | 0.72 |
| 2017 | Local | - | 0.74 |
| 2016 | Local | - | 0.89 |

NO₂ Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO₂ concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO₂ fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO₂ concentrations corrected for distance are presented in Table C.4

The annual mean NO₂ concentration was corrected for distance to relevant exposure at eight diffusion tube sites in 2019 (8, 18, 59, 67, 121 125, 340, 427). These diffusion tubes were subject to the fall-off with distance correction due to the annual mean concentrations greater than 36 µg/m³ and the site not located at a point of relevant exposure. After distance correction calculations, all sites reported concentrations below 10% of the NO₂ AQS objective.

QA/QC of Automatic Monitoring

Swansea AURN

This calibration data is automatically logged as invalid by the analyser. In addition, officers from this authority performed routine fortnightly manual calibrations. The analyser is subjected zero cylinder generated zero air to assess the analyser's response to zero air. The analyser is also subjected to traceable calibration gases at a known concentration and the response of the analyser recorded. All manual calibration data is then forwarded to

Ricardo to perform data management procedures. The data is then further subjected to full network QA/QC procedure's undertaken by Ricardo on behalf of the Department of Environment, Food and Rural Affairs (DEFRA). The station is serviced and maintained twice yearly by Enviro Technology Services Plc. In addition, the authority has a 5 day call out response for any on-site equipment problems with Enviro Technology Services Plc. All equipment on site is fully audited twice yearly by Ricardo together with the calibration gases stored on site.

Swansea Morriston Roadside

This calibration data is automatically logged as invalid by the data-logger. In addition, officers from this authority perform routine fortnightly manual calibrations. The analysers are subjected to scrubbed internal generated zero air to assess the analyser's response to zero air. The analysers are also subjected to traceable calibration gases at a known concentration and the response of the analyser and data-logger is recorded. All manual calibration data is recorded as invalid data by the data-logger and is removed from any subsequent analysis.

The station is operated and calibrated in accordance with the UK National Network Local Site Operators manual. The station is serviced and maintained twice yearly by Enviro Technology Services Ltd. In addition, the authority has a 5 day call out response for any on-site equipment problems with Enviro Technology Services Plc. Since the awarding of the contract by the Welsh Assembly Government to Ricardo (formally AEA Energy & Environment) to run the Welsh Air Quality Forum in April 2004, all equipment on site will be fully audited yearly by Ricardo AEA together with the calibration gases stored on site. The L40 span gas cylinders are replaced on a regular basis and are to a certified and traceable standard.

Swansea Cwm Level Park

The API gas analysers have been configured so that a daily automatic calibration is carried out (between 00:30 hours and 01:00 hours). This calibration data is automatically logged as invalid by the data-logger. In addition, officers from this authority perform routine monthly manual calibrations. The analysers are subjected to scrubbed internal generated zero air to assess the analyser's response to zero air.

The NO_x analyser is subjected to traceable calibration gas at a known concentration and the response of the analyser and data-logger is recorded. The internal span calibration is used with the ozone analyser. All manual calibration data is recorded as invalid data by the data-logger and is removed from any subsequent analysis.

The station is operated and calibrated in accordance with the UK National Network Local Site Operators manual. The station is serviced and maintained twice yearly by Enviro Technology Services Ltd. In addition, the authority has a 5 day call out response for any on-site equipment problems with Enviro Technology Services Plc. Since the awarding of the contract by the Welsh Assembly Government to Ricardo to run the Welsh Air Quality Forum in April 2004, all equipment on site will be fully audited yearly by Ricardo AEA, together with an audit of the calibration gases stored on site. Data is re-scaled by Ricardo following the authority supplying routine monthly

calibration reports. The L10 span gas cylinders (NO) will be replaced on a regular basis and are to a certified and traceable standard.

Swansea Hafod DOAS

- QA/QC for NO, Nitrogen Dioxide and Ozone

If (C1 >0 and C3 > 10) then result: = C1 else result: = C0

C0 – Null value

C1 – Pollutant Concentration

C2 – Standard Deviation of pollutant

C3 – Light Level of pollutant

- QA/QC for Benzene

If (C1 >0 and C3 > 40) then result: = C1 else result: = C0

C0 – Null value

C1 – Pollutant Concentration

C2 – Standard Deviation of pollutant

C3 – Light Level of pollutant

It should be noted that the data presented here represents the spatial average over the whole of the 250-meter measurement path and not a "point measurement" as seen within other "traditional or conventional" monitoring equipment/locations. It should also be noted that the DOAS methodology of monitoring does not comply with the EU Directive methods of measurement (chemiluminescent for NO₂, UV fluorescence for SO₂ etc.) at present but the system has achieved MCERTS certification and TUV certification.

The station is now subject to Xenon lamp changes on a quarterly basis, with zero and span calibrations now taking place on an annual basis. These works are undertaken by Enviro Technology Plc, the UK distributor for Opsis of Sweden.

Swansea St Thomas DOAS

All individual measurement points that have not met the QA/QC conditions (detailed below) are replaced with null values within the new dataset. The user can then compile 5 minute means from the validated dataset and undertake analysis.

- QA/QC for SO₂, Nitrogen Dioxide and Ozone

If (C1 >0 and C3 > 10) then result: = C1 else result: = C0

C0 – Null value

C1 – Pollutant Concentration

C2 – Standard Deviation of pollutant

C3 – Light Level of pollutant

- QA/QC for Benzene

If (C1 >0 and C3 > 40) then result: = C1 else result: = C0

C0 – Null value

C1 – Pollutant Concentration

C2 – Standard Deviation of pollutant

C3 – Light Level of pollutant

The station is subject to Xenon lamp changes on a 6 monthly basis with zero and span calibrations now taking place on a yearly basis. These works are undertaken by Enviro Technology Plc, the UK distributor for Opsis of Sweden. The frequency of lamp change differs to that of the Hafod DOAS as this station does not measure the NO channel and as such does not suffer the drop off/degradation in lamp intensity during the 5th and 6th months of operation. Changing the Xenon lamps every 6 months does not invoke any data issue concerns at this site.

Swansea Station Court High Street

In addition, officers from this authority perform routine fortnightly manual calibrations. The analyser is subjected to scrubbed internal generated zero air to assess the analyser's response to zero air. The NO_x analyser is subjected to traceable calibration gas at a known

concentration and the response of the analyser and data-logger is recorded. All manual calibration data is recorded as invalid data by the data-logger and is removed from any subsequent analysis.

The station is operated and calibrated in accordance with the UK National Network Local Site Operators manual. The station is serviced and maintained twice yearly by Enviro Technology Services Ltd. In addition, the authority has a 5 day call out response for any on-site equipment problems with Enviro Technology Services Plc. At present, the data is collected by the Welsh Air Quality Forum, but it does not form part of the QA/QC contract with Ricardo. The L10 span gas cylinder (NO) will be replaced on a regular basis and is to a certified and traceable standard.

PM₁₀ and PM_{2.5} Monitoring Adjustment

The MetOne PM₁₀ units are indicative measurements and no adjustment factors have been applied.

The Bam1020 PM₁₀ data reported in the document has been ratified as part of the AURN network and so Swansea Council has not applied any factors to the dataset.

The Bam1020 PM_{2.5} data is reported from a SMART Bam and so no offset is applied.

Automatic Monitoring Annualisation

The LAQM.TG(22) states that annualisation is required for any site which has a data capture of less than 75%, but greater than 25%. Four automatic monitoring sites recorded below the acceptable data capture in 2020 and 2019 for NO₂ and PM₁₀ and PM_{2.5}, therefore required annualisation. Annualisation was carried out for the annual mean NO₂ and PM_{2.5} at Swansea Port Tennant in 2019 with data capture of 73.0% and 74.3% for each pollutant, respectively, in 2020 Sketty Ebam and Uplands Ebam with data captures of 73.4% and 66.6% for each pollutant, respectively and in 2019 Westway Ebam with a data capture of 72.7%. A total of four continuous background monitoring locations were used; the following locations within a 50 mile radius were selected to annualise the data:

- Cardiff Centre;
- Newport;
- Narberth; and
- Bristol St Paul's

NO₂ Fall-off with Distance from the Road

No automatic NO₂ monitoring locations within Swansea required distance correction during 2020 and 2019.

Table C.2 – 2020 Annualisation Summary (concentrations presented in µg/m³)

| Site ID | Annualisation Factor Narberth | Annualisation Factor Newport | Average Annualisation Factor | Raw Data Annual Mean | Annualised Annual Mean | Comments |
|---------|-------------------------------|------------------------------|------------------------------|----------------------|------------------------|----------|
| 14 | 1.0159 | 0.8730 | 0.9444 | 21.1 | 20.0 | |
| 15 | 1.0159 | 0.8730 | 0.9444 | 23.8 | 22.4 | |
| 40 | 0.9147 | 1.0270 | 0.9709 | 20.3 | 19.7 | |
| 83 | 1.0016 | 0.9511 | 0.9763 | 18.3 | 17.8 | |
| 95 | 1.0048 | 1.0734 | 1.0391 | 17.9 | 18.6 | |
| 102 | 1.0078 | 0.8524 | 0.9301 | 28.7 | 26.7 | |
| 107 | 1.0159 | 0.8730 | 0.9444 | 30.8 | 29.1 | |
| 241 | 1.0159 | 0.8730 | 0.9444 | 26.3 | 24.8 | |
| 245 | 1.0159 | 0.8730 | 0.9444 | 36.6 | 34.6 | |
| 251 | 1.0159 | 0.8730 | 0.9444 | 27.9 | 26.3 | |
| 344 | 1.0159 | 0.8730 | 0.9444 | 32.1 | 30.3 | |
| 345 | 0.9270 | 0.8535 | 0.8903 | 30.7 | 27.3 | |
| 346 | 1.0148 | 1.0392 | 1.0270 | 24.9 | 25.6 | |
| 363 | 1.0634 | 1.1038 | 1.0836 | 19.0 | 20.6 | |
| 387 | 1.0159 | 0.8730 | 0.9444 | 18.0 | 17.0 | |
| 389 | 1.0159 | 0.8730 | 0.9444 | 34.6 | 32.7 | |
| 393 | 1.0159 | 0.8730 | 0.9444 | 16.7 | 15.7 | |
| 395 | 1.0159 | 0.8730 | 0.9444 | 15.9 | 15.0 | |
| 397 | 1.0159 | 0.8730 | 0.9444 | 21.3 | 20.2 | |
| 400 | 1.0159 | 0.8730 | 0.9444 | 24.7 | 23.3 | |
| 405 | 1.0159 | 0.8730 | 0.9444 | 15.2 | 14.4 | |
| 410 | 1.0072 | 1.0190 | 1.0131 | 26.3 | 26.6 | |
| 414 | 1.0159 | 0.8730 | 0.9444 | 19.4 | 18.3 | |
| 418 | 0.9595 | 0.8588 | 0.9092 | 27.1 | 24.6 | |
| 421 | 1.0159 | 0.8730 | 0.9444 | 15.9 | 15.0 | |
| 440 | 1.0956 | 0.9979 | 1.0468 | 18.0 | 18.8 | |
| 456 | 1.0159 | 0.8730 | 0.9444 | 24.6 | 23.2 | |
| 457 | 1.0420 | 1.1741 | 1.1081 | 16.7 | 18.6 | |
| 459 | 0.9927 | 0.9960 | 0.9943 | 47.5 | 47.2 | |
| 460 | 0.9300 | 0.8629 | 0.8964 | 19.1 | 17.1 | |

Table C.3 – 2019 Annualisation Summary (concentrations presented in µg/m³)

| Site ID | Annualisation Factor Narberth | Annualisation Factor Newport | Average Annualisation Factor | Raw Data Annual Mean | Annualised Annual Mean | Comments |
|---------|-------------------------------|------------------------------|------------------------------|----------------------|------------------------|----------|
| 36 | 0.8681 | 0.9725 | 0.9203 | 34.1 | 31.4 | |
| 71 | 1.0677 | 1.0875 | 1.0776 | 26.6 | 28.7 | |
| 211 | 0.9134 | 0.8869 | 0.9001 | 36.3 | 32.7 | |
| 351 | 0.9853 | 1.1032 | 1.0442 | 28.6 | 29.8 | |
| 365 | 0.9268 | 1.0457 | 0.9863 | 32.1 | 31.7 | |
| 367 | 0.9512 | 1.0685 | 1.0098 | 34.6 | 34.9 | |
| 420 | 0.8934 | 0.9643 | 0.9288 | 19.7 | 18.3 | |
| 438 | 1.1023 | 0.8926 | 0.9974 | 29.7 | 29.6 | |
| 439 | 1.0284 | 0.8459 | 0.9371 | 29.7 | 27.8 | |
| 440 | 1.0284 | 0.8459 | 0.9371 | 29.3 | 27.5 | |
| 441 | 1.0284 | 0.8459 | 0.9371 | 42.1 | 39.5 | |
| 442 | 1.0284 | 0.8459 | 0.9371 | 33.7 | 31.6 | |
| 443 | 1.0284 | 0.8459 | 0.9371 | 50.7 | 47.5 | |
| 444 | 1.0284 | 0.8459 | 0.9371 | 37.8 | 35.5 | |
| 445 | 1.0284 | 0.8459 | 0.9371 | 53.2 | 49.8 | |
| 446 | 1.0284 | 0.8459 | 0.9371 | 48.8 | 45.7 | |
| 447 | 1.0284 | 0.8459 | 0.9371 | 29.6 | 27.7 | |
| 448 | 1.0284 | 0.8459 | 0.9371 | 36.6 | 34.3 | |
| 449 | 1.0284 | 0.8459 | 0.9371 | 34.0 | 31.9 | |
| 450 | 1.0284 | 0.8459 | 0.9371 | 36.3 | 34.0 | |

Table C.4 – 2020 Local Bias Adjustment Calculations

| | Local Bias Adjustment Input 1 | Local Bias Adjustment Input 2 |
|--|----------------------------------|----------------------------------|
| Periods used to calculate bias | 10 | 11 |
| Bias Factor A | 0.73 (0.67 - 0.8) | - |
| Bias Factor B | 37% (25% - 49%) | - |
| Diffusion Tube Mean ($\mu\text{g}/\text{m}^3$) | 25.8 | 12.7 |
| Mean CV (Precision) | 5.4% | 3.6% |
| Automatic Mean ($\mu\text{g}/\text{m}^3$) | 18.8 | 9.1 |
| Data Capture | 99% | 100% |
| Adjusted Tube Mean ($\mu\text{g}/\text{m}^3$) | 19 (17 - 21) | - |

Notes:

A combined local bias adjustment factor of 0.72 has been used to bias adjust the 2020 diffusion tube results.

Table C.5 – 2019 Local Bias Adjustment Calculations

| | Local Bias Adjustment Input 1 | Local Bias Adjustment Input 2 |
|--|----------------------------------|----------------------------------|
| Periods used to calculate bias | 12 | 10 |
| Bias Factor A | 0.74 (0.69 - 0.8) | 0.7 (0.59 - 0.87) |
| Bias Factor B | 35% (26% - 45%) | 43% (15% - 70%) |
| Diffusion Tube Mean ($\mu\text{g}/\text{m}^3$) | 32.3 | 17.4 |
| Mean CV (Precision) | 5.9% | 5.8% |
| Automatic Mean ($\mu\text{g}/\text{m}^3$) | 23.9 | 12.2 |
| Data Capture | 100% | 100% |
| Adjusted Tube Mean ($\mu\text{g}/\text{m}^3$) | 24 (22 - 26) | 12 (10 - 15) |

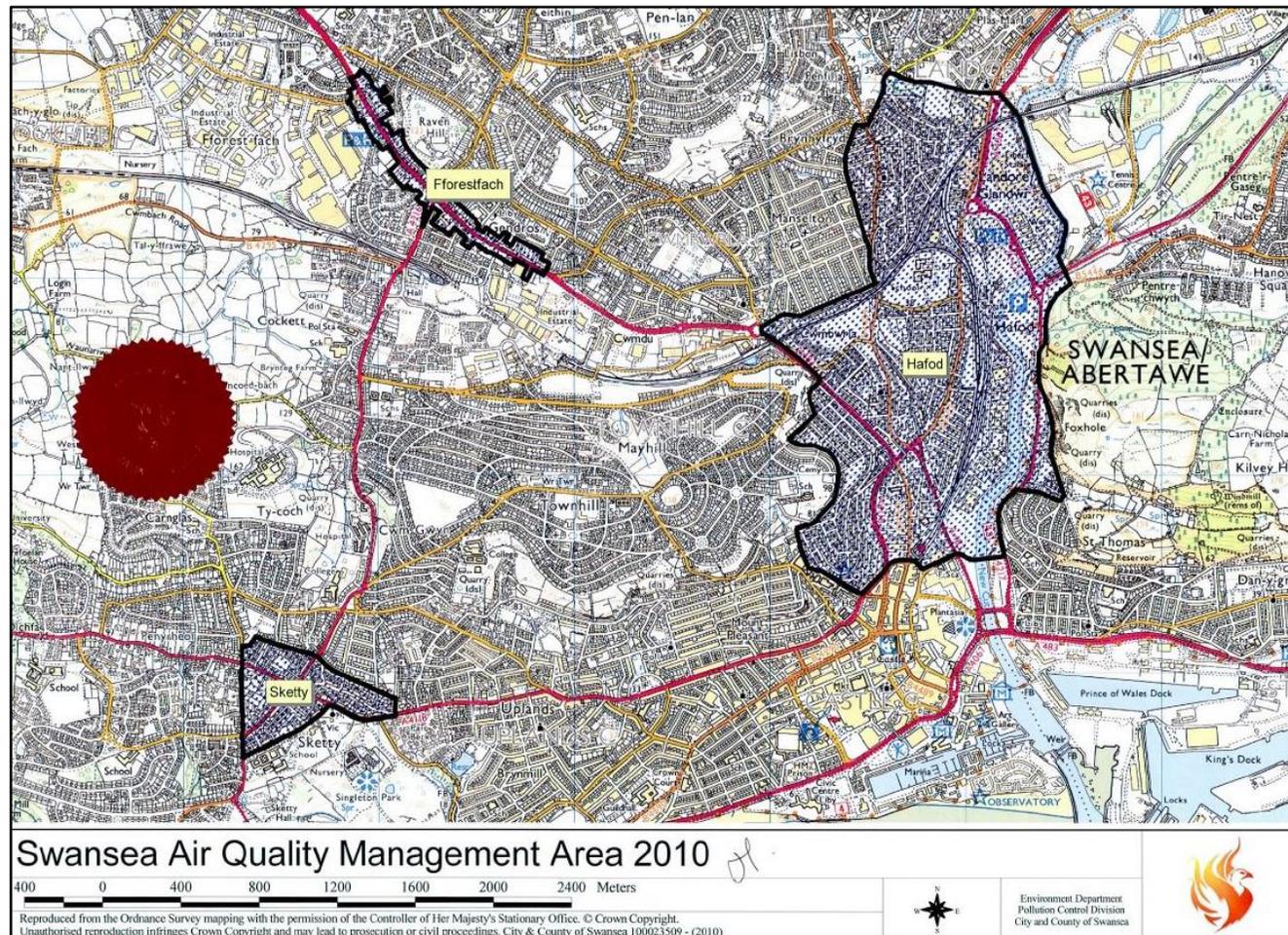
Notes: A combined local bias adjustment factor of 0.72 has been used to bias adjust the 2019 diffusion tube results.

Table C.6 – 2019 NO₂ Fall off With Distance Calculations (concentrations presented in µg/m³)

| 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 |
|---------|---|-----------------------------------|---|-----------------------------|---|---|
| 8 | 2.5 | 7.0 | 37.1 | 9.8 | 30.2 | |
| 18 | 0.4 | 1.4 | 36.6 | 10.2 | 31.1 | |
| 59 | 1.0 | 4.0 | 36.2 | 11.2 | 29.2 | |
| 67 | 2.0 | 7.0 | 38.5 | 13.8 | 31.2 | |
| 121 | 1.1 | 11.1 | 39.9 | 12.2 | 26.8 | |
| 125 | 1.0 | 4.0 | 37.0 | 13.8 | 30.5 | |
| 340 | 3.0 | 8.0 | 39.6 | 13.8 | 33.0 | |
| 427 | 3.0 | 36.5 | 37.2 | 8.4 | 18.6 | <i>Warning: your receptor is more than 20m further from the kerb than your monitor - treat result with caution.</i> |

Appendix D: AQMA Boundary Maps

Figure D.1 – Swansea AQMA 2010



Appendix E: Impact of COVID-19 upon LAQM

The COVID-19 pandemic has impacted air quality at local, regional and national scales and presented challenges to Local Authorities in undertaking statutory LAQM duties. This section outlines the impact of COVID 19 on air quality in Swansea Council during 2020. Further detail on air quality impacts at the national scale can be viewed through the [Reports & Seminars section of airquality.gov.wales](#).

Impacts of COVID-19 on Air Quality within Swansea Council

Reductions of NO₂ concentrations were recorded across all monitoring locations for 2020.

The data used in the collaborative research carried out by Swansea Council and Swansea University, 'Estimation of ambient NO₂ and PM_{2.5} concentration change in Wales during COVID-19 outbreak', indicates a significant reduction in the daily median volume for traffic count for roads in and around the existing Swansea AQMA 2010 (Hafod Area).

There were no identifiable impacts as a consequence of COVID-19 upon air quality within Swansea Council for Particulate Matter.

Opportunities Presented by COVID-19 upon LAQM within Swansea

During the lockdown period of the Coronavirus Pandemic, collaborative research was carried out by Swansea Council and Swansea University. The attached paper 'Estimation of ambient NO₂ and PM_{2.5} concentration change in Wales during COVID-19 outbreak' was produced. The research showed that there had been a reduction in NO₂ concentrations however there had been an increase in PM_{2.5} concentrations for the time period that had been attributed to transboundary episodes.



Estimation of
ambient NO₂ and PM

Challenges and Constraints Imposed by COVID-19 upon LAQM within Swansea

No challenges or constraints relating to LAQM have arisen during 2020 as a consequence of COVID-19 within Swansea Council.

Table E.1 – Impact Matrix

| Category | Impact Rating: None | Impact Rating: Small | Impact Rating: Medium | Impact Rating: High |
|--|--|--|---|--|
| Automatic Monitoring – Data Capture (%) | More than 75% data capture | 50 to 75% data capture | 25 to 50% data capture | Less than 25% data capture |
| Automatic Monitoring – QA/QC Regime | Adherence to requirements as defined in LAQM.TG16 | Routine calibrations taken place frequently but not to normal regime. Audits undertaken alongside service and maintenance programmes | Routine calibrations taken place infrequently and service and maintenance regimes adhered to. No audit achieved | Routine calibrations not undertaken within extended period (e.g. 3 to 4 months). Interruption to service and maintenance regime and no audit achieved |
| Passive Monitoring – Data Capture (%) | More than 75% data capture | 50 to 75% data capture | 25 to 50% data capture | Less than 25% data capture |
| Passive Monitoring – Bias Adjustment Factor | Bias adjustment undertaken as normal | <25% impact on normal number of available bias adjustment colocation studies (2020 vs 2019) | 25-50% impact on normal number of available bias adjustment studies (2020 vs 2019) | >50% impact on normal number of available bias adjustment studies (2020 vs 2019) and/or applied bias adjustment factor studies not considered representative of local regime |
| Passive Monitoring – Adherence to Changeover Dates | Defra diffusion tube exposure calendar adhered to | Tubes left out for two exposure periods | Tubes left out for three exposure periods | Tubes left out for more than three exposure periods |
| Passive Monitoring – Storage of Tubes | Tubes stored in accordance with laboratory guidance and analysed promptly. | Tubes stored for longer than normal but adhering to laboratory guidance | Tubes unable to be stored according to be laboratory guidance but analysed prior to expiry date | Tubes stored for so long that they were unable to be analysed prior to expiry date. Data unable to be used |
| AQAP – Measure Implementation | Unaffected | Short delay (<6 months) in development of a new AQAP, but is on-going | Long delay (>6 months) in development of a new AQAP, but is on-going | No progression in development of a new AQAP |
| AQAP – New AQAP Development | Unaffected | Short delay (<6 months) in development of a new AQAP, but is on-going | Long delay (>6 months) in development of a new AQAP, but is on-going | No progression in development of a new AQAP |

Glossary of Terms

| Abbreviation | Description |
|-------------------|---|
| AQAP | Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the LA 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 |
| APR | Air quality Annual Progress Report |
| AURN | Automatic Urban and Rural Network (UK air quality monitoring network) |
| Defra | Department for Environment, Food and Rural Affairs |
| DMRB | Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England |
| FDMS | Filter Dynamics Measurement System |
| LAQM | Local Air Quality Management |
| NO ₂ | Nitrogen Dioxide |
| NO _x | Nitrogen Oxides |
| PM ₁₀ | Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less |
| PM _{2.5} | Airborne particulate matter with an aerodynamic diameter of 2.5µm or less |
| QA/QC | Quality Assurance and Quality Control |
| SO ₂ | Sulphur Dioxide |