City of Doncaster Council

2023 Air Quality Annual Status Report (ASR)

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

Date: June, 2023

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Executive Summary: Air Quality in Our Area

Air Quality in Doncaster

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

The mortality burden of air pollution within the UK is equivalent to 29,000 to 43,000 deaths at typical ages[3], with a total estimated healthcare cost to the NHS and social care of £157 million in 2017[4].

There are eight areas of poorer air quality in Doncaster, referred to as “Air Quality Management Areas” (AQMAs). These AQMAs have been declared due the breaching (or exceedance) of legal air quality standards, set by central government, for the polluting gas nitrogen dioxide (NO2). Nitrogen dioxide is strongly associated with traffic emissions, and consequently our AQMAs are located adjacent to busy roads within Doncaster. In common with other UK towns and cities, our AQMAs have been declared due to exceedance of the annual mean objective for nitrogen dioxide, whilst one of our AQMAs (AQMA 7, Hickleton) has also been declared for exceedance of the one-hour mean objective for nitrogen dioxide.

The AQMAs are located near busy roads in the following areas; City Centre along A630 Church Way; Balby A630; Hyde Park along Carr House Road A18; Bawtry Road M18/A638; Conisbrough A630/Low Road; Skellow, adjacent to the A1, and Hickleton and Marr on the A635. A new air quality action plan has been created and is awaiting approval,

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

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

[3] Defra. Air quality appraisal: damage cost guidance, January 2023

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

this action plan will bring forward measures to work towards reducing emissions and ultimately achieving compliance with the objectives for nitrogen dioxide.

A general decline in nitrogen dioxide concentrations over the last decade has occurred in many locations across Doncaster, particularly so for the years 2019 to 2022, however parts of Doncaster continue to exceed. Lower nitrogen dioxide concentrations in 2020 to 2021 reflect the impact of reduced traffic levels in Doncaster due to the various pandemic lockdowns, resulting in fewer emissions from traffic. 2022 was not subject to any lockdown measures and therefore can be considered the first full post covid year. It is currently uncertain how longer term changes (if any) in driving habits due to the pandemic (more home working for instance); will impact on further reducing traffic emissions in future years.

Roadside nitrogen dioxide concentrations in Doncaster in 2022 have generally shown a minor increase on 2021 which can be attributed to removal of all lockdown measures. This makes prediction of air pollution concentrations within Doncaster more challenging and subsequent decisions to revoke (remove) any of our AQMAs. 2022 concentrations across Doncaster are still consistently below 2019 pre pandemic concentrations.

No other airborne pollutants breach legal air quality standards in Doncaster; however, we are aware of the health impact of airborne fine particles (PM10 and PM2.5 particles), which are monitored at four locations across Doncaster with an additional three installations due to be completed in 2023. Monitoring of PM2.5 particles in Doncaster will highlight progress on meeting the new PM2.5 targets in future years.

During 2022, there were no new major sources of pollution in Doncaster likely to have a significant impact on meeting the legal air quality standards or objectives. New developments in Doncaster are however expected to mitigate emissions where appropriate, in line with current best practice and the technical planning guidance, to prevent any deterioration in air quality.

In 2021, City of Doncaster Council embarked on an upgrade programme of its continuous air quality monitoring stations, which provide near real time information on the quality of the air we breathe in Doncaster. This work has continued throughout 2022 with monitoring stations at Conisbrough (CM5) and Carr House Road (CM1) now complete and Skellow (CM6), Warmsworth (CM3) and Bawtry Road (CM4) due to be completed in 2023. The continuous monitoring data is currently being published on the WeCare4Air website which is available via this link https://www.wecare4air.co.uk/.

Actions to Improve Air Quality

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

The Environmental Improvement Plan[5] sets out actions that will drive continued improvements to air quality and to meet the new national interim and long-term PM2.5 targets. The National Air Quality Strategy, due to be published in 2023, will provide more information on local authorities' responsibilities to work towards these new targets and reduce PM2.5 in their areas. The Road to Zero[6] details the approach to reduce exhaust emissions from road transport through a number of mechanisms; this is extremely important given that the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

An action to improve air quality which has been implemented in Doncaster is the Council's Cycling Strategy which has carried out £430k of improvements to the cycling network. The Trans Pennine Trail has received a total of 1.6km of improvements in the past 12 months with the aim of increasing the number of people cycling as well as the number of journeys undertaken by cycle.

The Quality Bus Partnership introduced a £2 flat fare and Marketing Campaign in 2022 to increase bus patronage across Doncaster. Progress has been made on the electric bus scheme across South Yorkshire which will see one or two buses running between Doncaster and Rotherham, these buses are currently on order. Bus priority measures have also been introduced to reduce bus journey times and improve reliability.

Ricardo Energy and Environment have completed both a Vehicle Emission study and a subsequent Modelling report for AQMA 7. These reports have been relied upon when

[5] Defra. Environmental Improvement Plan 2023, January 2023

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

formulating measures for the new AQAP to address the exceedance of air quality standards. The Ricardo reports will be made publicly available once approved.

The priority for the City of Doncaster Council is to continue to implement the measures in the air quality action plan while also progressing newly identified measures that could bring forward compliance with legal standards, in particular facilitating the change to cleaner vehicles and active travel, as well as improving air quality in Doncaster as a whole.

In 2021, we stated that the action plan will be renewed in 2022 and will incorporate any identified measures needed for the AQMA at Marr. This revision was delayed as we waited for further guidance from Central Government on how to improve local air quality, following the passing of the Environment Act 2021, the new action plan has now been completed and is in the process of consultation and approval.

We have upgraded two monitoring stations in 2022 and are currently in the process of upgrading another three in 2023 to be able to monitor PM2.5 concentrations and provide real time air pollution data to our residents via the WeCare4Air website. Completion of the upgrade in 2023 will be a priority for City of Doncaster Council.

Securing continuing funding for actions within the Action Plan remains a risk to implementation of these actions. Furthermore, the potential development of Clean Air Zones (CAZs) within the wider region outside of Doncaster is ongoing. The impact of these CAZs is still unknown and one the Council is monitoring. The Sheffield City Clean Air Zone went live on the 27th February 2023 and we are in communication with the other local authorities to keep up to date with developments

Conclusions and Priorities

Following the pandemic and subsequent lockdowns in 2020 and 2021, nitrogen dioxide concentrations declined significantly at roadside and exceedances of legal air quality standards occurred in only two of Doncaster's AQMAs. Nitrogen dioxide data from 2022 reveals that concentrations have not returned to pre-pandemic levels (2019). Therefore, although 2022 data are slightly raised compared to 2021, the longer-term trend continues to be downwards in Doncaster.

This annual status report has been compiled using the latest data gathered throughout 2022. As with the 2020 and 2021 data reported in previous year's annual status reports, it is uncertain whether the effects of the pandemic are still being felt on traffic levels and this

makes it challenging to draw any firm conclusions on whether Doncaster's AQMAs should be revoked at this point. Further monitoring will continue in 2023, and it is hoped that the additional monitoring data will assist in determining the impact of longer-term traffic trends (post pandemic lockdowns) on air pollution concentrations in Doncaster.

At this time, all eight AQMA designations will therefore remain in place, due to the uncertainties with future traffic flows. No developments from 2022 have been identified that will significantly affect air quality in Doncaster.

Concentrations in AQMA7A demonstrate that this AQMA is now in compliance with air quality standards and as such while it is included within the new AQAP no specific measures are required. The challenge in 2023 remains obtaining the funding and resources necessary to identify further measures so that City of Doncaster Council can achieve compliance with the objective in all of Doncaster's AQMAs in the shortest possible time.

City of Doncaster Council will prioritise those measures that can be implemented and completed within 2023.

Local Engagement and How to get Involved

City of Doncaster Council publishes the Annual Status Report and Air Quality Action Plan on its website[7]. We publish daily air quality information on the WeCare4Air website to inform residents, schools and businesses of the current levels of air quality[8]. We also engage with a small number of Parish Councils and residents on air quality matters specific to their areas.

A steering group, made up of departments from across the Council, oversees the production and implementation of the Air Quality Action Plan. This group will be widened out to involve other stakeholders as necessary. City of Doncaster Council currently engages with South Yorkshire Passenger Transport Executive and as such bus operators, the Sheffield City Region and individual South Yorkshire Councils and to some extent National Highways. City of Doncaster Council is also an active member of the Yorkshire and Lincolnshire Pollution Advisory Group (YALPAG).

[7]Annual Status Report and Air Quality Action Plan on City of Doncaster website https://www.doncaster.gov.uk/services/environmental/air-quality-reports-available-to-the-public

[8] WeCare4Air website Air Quality Service and Data throughout the UK - We Care 4 Air

Local residents, businesses and organisations are key to improving air quality. Individuals can improve air quality by considering the mode of travel they choose carefully, considering purchasing vehicles with the best environmental benefits where possible, sharing knowledge and reducing domestic emissions by considering the impact of choices of heating on the local environment. Further information can be found online at https://www.doncaster.gov.uk/ or through the contact details at the front of this report

Local Responsibilities and Commitment

This ASR was prepared by the Regulation and Enforcement team of Doncaster Council: with the support and agreement of the following officers and departments:

Kerry Perruzza (Transportation Unit), Richard Speight (Transport Services), Caroline Temperton (Public Health), Lisa Croft (Policy, Insight and Change), Richard Smith (Sustainability Unit), David Snell (Highways Infrastructure).

This ASR has been signed off by Rachael Leslie Acting Director of Public Health.

If you have any comments on this ASR please send them to Mathew Julian at: Doncaster Council, Pollution Control, Civic Office, Waterdale, Doncaster, DN1 3BU. 01302 737573 pollution.control@doncaster.gov.uk

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1 Local Air Quality Management

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

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

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

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

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

A summary of AQMAs declared by City of Doncaster Council can be found in Table 2.1. The table presents a description of the eight AQMAs that are currently designated within Doncaster. Appendix D: Maps of Monitoring Locations and AQMAs provides maps of AQMAs and also the air quality monitoring locations in relation to the AQMAs. The air quality objectives pertinent to the current AQMA designations are as follows:

- NO2 annual mean (all AQMAs);
- NO2 hourly mean (AQMA 7 only).

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Number of Years Compliant with Air Quality Objective	Name and Date of AQAP Publication	Web Link to AQAP
AQMA1	August 1st 2001	NO2 Annual Mean	An area along A630 Church Way through the town centre of Doncaster encompassing the main shopping precinct, transport interchange, college and residential properties.	NO	53	34	3 years	Doncaster Air Quality Action Plan 2018	Air quality reports available to the public - City of Doncaster Council
AQMA2	August 1st 2001	NO2 Annual Mean	An area along the A630 from Balby to the A1 at Warmsworth encompassing residential properties.	YES	53	42	Not compliant	Doncaster Air Quality Action Plan 2018	Air quality reports available to the public - City of Doncaster Council
AQMA3	August 1st 2001	NO2 Annual Mean	An area encompassing residential properties along the A18	NO	43	33	4 year	Doncaster Air Quality Action Plan 2018	Air quality reports available to the public - City of Doncaster Council

AQMA4	June 1st 2003	NO2 Annual Mean	An area encompassing a residential estate following the M18 where it crosses the A638.	YES	43	31	4 year	Doncaster Air Quality Action Plan 2018	Air quality reports available to the public - City of Doncaster Council
AQMA5	April 1st 2012	NO2 Annual Mean	A residential area along the A630 in Conisbrough including the junction with Low Road.	NO	49	37	3 years	Doncaster Air Quality Action Plan 2018	Air quality reports available to the public - City of Doncaster Council
AQMA6	December 1st 2013	NO2 Annual Mean	A residential area along the A1	YES	51	31	3 years	Doncaster Air Quality Action Plan 2018	Air quality reports available to the public - City of Doncaster Council
AQMA7	February 1st 2015	NO2 Annual Mean	A village with residential properties along the A635	YES	86	55	Not compliant	Doncaster Air Quality Action Plan 2018	Air quality reports available to the public - City of Doncaster Council
AQMA7	February 1st 2015	NO2 1 Hour Mean	A village with residential properties along the A635	YES	38	30	4 years	Doncaster Air Quality Action Plan 2018	Air quality reports available to the public - City of Doncaster Council

AQMA7A	August 3rd 2020	NO2 Annual Mean	A village with residential properties along the A635	YES	38	30	4 years	This AQMA has been considered in the new Action Plan which is awaiting approval	

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

☒ **Doncaster Council confirm that all current AQAPs have been submitted to Defra.**

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

Defra's appraisal of last year's ASR concluded

1. No action plan is currently in place for AQMA 7A, declared in 2020. It is understood that this was delayed during 2021 due to factors beyond the control of DMBC and will be published during the next reporting year instead.

2. The Council has included a comprehensive discussion and review of its monitoring strategy, informed by the results of monitoring network from previous reporting years. This demonstrates the Council's proactive and dedicated approach to improving air quality across the area. The council is highly encouraged to review the AQMA designations for AQMAs 3 and 4, where all sites have again remained compliant in 2021 for future reporting years.

3. DMBC provides a comprehensive discussion and analysis for the annual mean concentrations of NO2 and PM10 against the Air Quality Objectives in the report, which is commended. The Council is highly encouraged to do the same for $PM_{2.5}$ also in future reporting years.

4. There are several formatting issues present within the report. For example, in Table 2.2 some column headings are bolded while others are not. In the Appendix section, there is inconsistency in the naming of Figures; some figures are named in the format "Figure A.1 c" while others are named as "Figure A.1.k". The Council is encouraged to correct these issues in future reporting years.

5. It is encouraging to see the Council considered the comments made during the previous appraisal and actively made an effort to address all of these actions for this year's ASR.

6. Extensive Trend graphs have been provided for all monitoring data, which is commended.

7. The Council has provided a comprehensive list of key actions which they are planning to undertake to improve air quality over the next reporting year. This is commended.

8. The Council has decided to include DT15-20 inclusive within Tables A.2, A.4 and B.1 with monitoring at these locations having ceased for more than one calendar year. As

no results are reported for these sites either in 2021 or the previous five years, they should be removed from the ASR and relevant excel tables. It would be preferable for DMC to remove these from future reports.

City of Doncaster Council progress

City of Doncaster Council has taken forward a number of direct measures during the current reporting year of 2022 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. Nine measures are included within Table 2.2, with the type of measure and the progress City of Doncaster Council have made during the reporting year of 2022 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2.

More detail on these measures can be found in their respective Action Plans. Key completed measures are:

- Eco Stars
- Air Quality Planning and Technical Guidance
- Clean Air Plans

Eco Stars – A lack of funding has led to a cessation of the scheme and the removal of this measure.

Air Quality Planning and Technical Guidance – Continues to be used on 100% of applications that Pollution Control are consulted on. Supplementary Planning Document has now been published in draft and includes the Air Quality Technical Guidance.

Clean Air Plans – Ricardo Energy and Environment were commissioned to conduct a Vehicle Emission study and subsequent Further Modelling exercise for AQMA 7. These reports have been completed and are awaiting approval before release to the public. Findings from these Ricardo reports have been considered and utilised when formulating the measures that are to be contained in the new AQAP.

City of Doncaster Council expects the following measures to be completed or ongoing over the course of the next reporting year:

- Walking Strategy
- Bus partnership
- Cycling strategy

- Future Fleet
- Sustainable Travel Access Fund Projects

Walking Strategy – Revised walking strategy will be tendered for and completed in 2023 with identified actions then taken forward in the AQAP.

Bus Partnership – Introduced a £2 flat fare to increase public uptake. An electric bus scheme has been introduced across South Yorkshire which will see up to two electric buses running between Doncaster and Rotherham.

Cycling Strategy – £430k of improvements have been achieved in 2022. This includes 1.6km of Trans Pennine Trail (TPT) improvements between Pastures Road and Mexborough.

Future Fleet – A continued commitment to greening the Council fleet has achieved 47 Electric vehicles (replacing existing diesel vehicles) and the installation of 42 charging bays currently in operation for Council fleet, with 24 being installed/awaiting installation. Plans are in place to replace over 600 vehicles with electric alternatives by 2030.

A new revised AQAP has been created and is awaiting approval. As such the City of Doncaster Council's priorities for the coming year are to continue to progress the ongoing measures which have been carried over from the previous AQAP (Walking Strategy, Bus Partnership, Cycling Strategy and Future Fleet. In addition, City of Doncaster Council will be progressing the new measures which have been identified to have an innovative and impactful effect on air pollution in the Council's AQMAs.

City of Doncaster Council has not specifically worked with stakeholders during 2022 to implement the measures contained in Table 2.2.

The principal challenges and barriers to implementation that City of Doncaster Council anticipates facing are primarily concerning available funding and resources.

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

Procurement – Needs further work and engagement to investigate possible benefits and appropriate officers.

City of Doncaster Council anticipates that the measures stated above and in Table 2.2 will achieve compliance in AQMA 3, AQMA 4, AQMA 6 and AQMA 7A, subject to further evidence regarding post pandemic traffic flows in future years.

Whilst the measures stated above and in Table 2.2 will help to contribute towards compliance, City of Doncaster Council anticipates that further additional measures not yet prescribed will be required in subsequent years to achieve compliance and enable the revocation of AQMA1, AQMA 2, AQMA 5, and AQMA 7, again subject to further evidence regarding post pandemic traffic flows in future years. AQMA 7 in particular continues to show significant exceedance of the annual mean objective.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1	Air Quality Planning and Technical Guidance	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2017	2024	Doncaster Council	Doncaster Council	NO	Not Funded	< £10k	Implementation	LOW	% of applications with air quality mitigation included.	All relevant applications now screened with this guidance.	Continues to be used on 100% of applications that Pollution Control are consulted on. Supplementary Planning Document now published in draft including air quality.
2	Clean Air Plans	Promoting Low Emission Transport	Low Emission Zone (LEZ)	2017	2024	Doncaster Council	None	NO	Study funded	£10k - 50k	Planning	HIGH	To be determined	Funding required in 2023 for emission profile study in AQMA 2 in 2024 with the view to inform future actions	Funding
3	Sustainable Travel Access Fund Projects	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2017	2024	Doncaster Council and South Yorkshire Mayoral Combined Authority	DfT	NO	Funded	£100k - £500k	Implementation	LOW	-Dr Bike Services - Cycle Training - Cycle Package, all implemented as part of an ongoing – annual programme	Creation of Doncaster Active Travel hub in 2021	From March 2021, these DfT funded projects came under the Capability Fund. We will review all active travel measures within the revision of the Air Quality Action Plan in 2023.
4	Future Transport (Fleet) Policy	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	2017	2030	Doncaster Council	Doncaster Council	NO	Partially Funded	£100k - £500k	Implementation	MEDIUM	% Fleet as Diesel/ Petrol/ ULEV/ Hybrid.	47 Electric vehicles acquired replacing diesel vehicles. 3 additional vehicles on order. 42 charging bays currently in operation for Council fleet, with 24 being installed/awaiting installation.	Plans to 2030 include the transition of over 600 vehicles from diesel to Electric.
5	Cycling Strategy	Promoting Travel Alternatives	Promotion of cycling	2017	2023	Doncaster Council and South Yorkshire Mayoral Combined Authority	DfT	NO	Funded	> £10 million	Implementation	LOW	1. Increase the number of people cycling and the number of journeys by cycle 2. Improve health and reduce health inequalities by introducing cycling into everyday life	Delivered £430k improvement. 1.6km of Trans Pennine trail improvements in past 12 months.	We will address the Strategy within the revision of the Air Quality Action Plan in 2023. Current actions to run until March 2023. A total of ~ £24 million from TCF, Active Travel Funds and Emergency Fund to deliver these

Measure No.	Measure	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
															infrastructure
6	Quality Bus Partnership	Promoting Low Emission Transport	Other	2017	2023	Doncaster Council, SYPTE and Bus Operators	Doncaster Council and Private Business	NO	Funded	< £10k	Completed	Low	% of higher Euro engine specifications in the fleets	Introduction of £2 flat fare. Electric bus scheme across South Yorkshire which will see one or two buses running between Doncaster and Rotherham currently on order at the moment.	Bus fleets nationally as well as locally are going through a period of transition following the pandemic. This action will be considered further in the forthcoming AQAP revision, in light of current circumstances.
7	Parking Strategy	Policy Guidance and Development Control	Other policy	2017	2023	Doncaster Council	Doncaster Council	NO	Funded	< £10k	Planning	LOW	Six EV chargers in Council operated car parks.	Car parking health check completed. Minor increase in EV charging units in Council Car Park and further implementation being considered.	The Council will have to review the Strategy at some point following the pandemic and its impact on ongoing patronage of car parks etc. This will be considered in the revision of the AQAP.
8	Walking Strategy	Alternatives to private vehicle use	Other	2017	2023	Doncaster Council and South Yorkshire Mayoral Combined Authority	DfT	NO	Funded	< £10k	Implementation	Low	To improve the quality of where people walk People feel safer walking Walking is an enjoyable way to discover Doncaster Make walking the first choice for short journeys	Refresh of the strategy going to tender 2023 Walking groups have continued and new ones set up for people to gain confidence. Travel planning is offered free of charge via the Active Travel Hub for people who wish to move from car travel to walking to work	Majority of activity paused due to COVID however, some elements considered in the COVID emergency fund (ATF1). This strategy and subsequent schemes will be addressed within the revision of the Air Quality Action Plan in 2023
9	Procurement	Policy Guidance and Development Control	Sustainable Procurement Guidance	2017	2022	Doncaster Council	Doncaster Council	NO	Not Funded	< £10k	Planning	Medium	TBC	None	None

2.3 PM2.5 – Local Authority Approach to Reducing Emissions and/or Concentrations

As detailed in Policy Guidance LAQM.PG22 (Chapter 8), local authorities are expected to work towards reducing emissions and/or concentrations of PM2.5 (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that PM2.5 has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

City of Doncaster Council is taking the following measures to address PM2.5:

- Smoke Control Orders are in place across Doncaster with complaint led enforcement and screening of any relevant planning applications

- Promotion of ULEV, modal shift and active travel in the AQAP

PM2.5 monitoring has been implemented in Doncaster since 2020 with an expansion of monitoring into a further two sites in 2022. Further expansion to three more sites is expected within 2023. Monitoring data are discussed in Section 3 of this report.

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

This section sets out the monitoring undertaken within 2022 by City of Doncaster Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2018 and 2022 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

City of Doncaster Council undertook automatic (continuous) monitoring at four sites during 2022. Table A.1 in Appendix A shows the details of the automatic monitoring sites. NB. Local authorities do not have to report annually on the following pollutants: 1,3 butadiene, benzene, carbon monoxide and lead, unless local circumstances indicate there is a problem. The https://www.wecare4air.co.uk/ page presents automatic monitoring results for City of Doncaster Council, with automatic monitoring results also available through the UK-Air website .

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

3.1.2 Non-Automatic Monitoring Sites

City of Doncaster Council undertook non-automatic (i.e. passive) monitoring of NO2 at sixty four sites during 2022 (with an additional three diffusion tubes co-located at both CM2 and CM7 for creation of our local diffusion tube bias adjustment factor – this data is reported in Appendix C). Table A.2 in Appendix A presents the details of the non-automatic sites.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on Quality Assurance/Quality Control (QA/QC) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g. annualisation and/or distance correction), are included in Appendix C. The references DT15 and 17 have been used at

different locations in Doncaster and DT18, 19 and 20 have been retained for use as co-location tubes when CM6 is reinstated.

3.2 Individual Pollutants

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

3.2.1 Nitrogen Dioxide (NO2)

Table A.3 and Table A.4 in Appendix A compare the ratified and adjusted monitored NO2 annual mean concentrations for the past five years with the air quality objective of 40µg/m^3. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

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

Table A.5 in Appendix A compares the ratified continuous monitored NO2 hourly mean concentrations for the past five years with the air quality objective of 200µg/m^3, not to be exceeded more than 18 times per year.

Outside of our AQMAs there are no exceedances of the objectives where relevant exposure exists in 2022.

All of the Doncaster AQMAs were previously declared due to exceedance of the annual mean objective for NO2, along with an exceedance of the 1-hour mean objective for AQMA 7.

All the AQMAs in 2022, with the exception of AQMA 7 (A635 Doncaster Road, Hickleton) and one location in AQMA 2 (A630 from Balby to the A1 junction at Warmsworth), are below the annual mean NO2 objective for the third year running. The reductions in concentrations have previously been attributed to the impact of the Covid 19 pandemic and subsequent lockdowns. The impact of the pandemic on pollutant concentrations was discussed in detail within our previous ASR. Reduced NO2 concentrations when

compared to the last pre-pandemic year of 2019 show that 2022 concentrations of this gas have not returned to pre-pandemic levels.

The annual mean NO2 concentrations within AQMAs 1, 3 and 4 have for some time been below the objective at long-term sites and therefore further monitoring studies have been carried out since 2018 for two of these areas and monitoring implemented in 2020 for the third area (AQMA 4).

The data comprises DT60-64 for AQMA 1, DT65-67 for AQMA 3 and DT68 and DT69 for AQMA 4. All of these tubes have been below the air quality objective since 2020. Monitoring will continue for the next two years to identify three years of post pandemic concentrations to confirm whether compliance has been maintained over that period and that revoking these AQMAs is possible.

Non-automatic monitoring identified only one location where the annual mean concentrations was above 60µg/m^3. This reading occurred in AQMA 7, Hickleton which was previously declared as an AQMA for NO2 annual mean and NO2 hourly mean.

Data from 2022 therefore indicates, that it was unlikely to have been any exceedance of the hourly objective in any of our AQMAs for this year, excluding AQMA 7.

There were no exceedances of the hourly objective recorded by the automatic monitoring stations at any point over the last four years.

Long-term trend graphs, Figure A.1a to A.1h have been included in Appendix A and continue to present an overall downward trend of annual mean nitrogen dioxide concentrations in Doncaster's AQMAs.

The long-term monitoring data outside of our AQMAs also continues to indicate a clear downward trend.

On the whole 2022 has seen a minor increase in concentrations compared with 2021 data. The 2022 data remains considerably below 2019 pre pandemic concentrations. Prediction of future year concentrations remains problematic, along with confidence with progressing with revocations of AQMAs as the increase in concentrations can be attributed to the return towards pre pandemic activities. It is unclear at this time whether the 2022 data represents the new normal or whether concentrations will continue to increase towards pre pandemic levels.

It should be noted that upgrade of the Council's continuous air quality monitoring stations is currently being undertaken in 2022 and 2023, including replacement of several of our

aging oxides of nitrogen dioxide gas analysers and reinstallation of monitoring sites which are currently non-functioning.

3.2.2 Particulate Matter (PM10)

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

Table A.7 in Appendix A compares the ratified continuous monitored PM10 daily mean concentrations for the past five years with the air quality objective of 50µg/m^3, not to be exceeded more than 35 times per year.
There are no recorded exceedances of the PM10 objectives across any of the monitoring sites in 2022 and therefore both the annual and daily mean objectives are considered to be met within Doncaster.

3.2.3 Particulate Matter (PM2.5)

Table A.8 in Appendix A presents the ratified and adjusted monitored PM2.5 annual mean concentrations for the past five years.

Monitoring of PM2.5 has continued at CM2 for the third year while new equipment installed at CM1, CM5 and CM7 has allowed concentrations to be monitored for the first year.

3.2.4 Sulphur Dioxide (SO2)

Continuous monitoring of SO2 concentrations is not undertaken in Doncaster.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
CM1	A18 Carr House Road, Doncaster	Roadside	458027	402475	NO2; PM10; PM2.5	AQMA3	Chemiluminescent; SWAM - BAM	4	1.7	3
CM2	Market Place, Doncaster	Urban centre	457669	403611	NO2; PM10; PM2.5	AQMA1	Chemiluminescent BAM	30.7	20	3
CM3	A1/A630 Grosvenor Terrace, Warmsworth	Roadside	454964	400745	NO2; PM10; PM2.5	AQMA2	Upgrading to Chemiluminescent; SWAM – BAM, Due 2023	15.7	7.3	3
CM4	A638 Bawtry Road, Bessacarr	Roadside	462278	400111	NO2; PM10; PM2.5	AQMA4	Upgrading to Chemiluminescent; SWAM – BAM, Due 2023	20	2.2	3
CM5	A6023 Low Road, Conisbrough	Roadside	451438	398528	NO2; PM10; PM2.5	AQMA5	Chemiluminescent; SWAM – BAM	17	2.95	2
CM6	A1, Skellow	Roadside	452185	410380	NO2	AQMA6	Chemiluminescent	11	2.5	2
CM7	A635 Doncaster Road, Hickleton	Roadside	448067	405300	NO2; PM10; PM2.5	AQMA7	Chemiluminescent Analyser, FIDAS	16.6	4.6	2
CM8	A630 Cleveland Street, Doncaster	Roadside	457249	402747	NO2	NO	Chemiluminescent	13	2	1.5

Notes:

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

(2) N/A if not applicable

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

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
DT1	A638 North Bridge	Kerbside	456992	403757	NO2	N	20+	0.8	No	2.0
DT2	A638 North Bridge adj. Trafford Way	Roadside	457308	403458	NO2	AQMA1	20+	9.2	No	2.0
DT3	Regent Sq. adj. South Parade	Kerbside	457957	403152	NO2	N	1.0	0.5	No	2.0
DT4	South Parade opp. Regent Sq.	Roadside	457952	403123	NO2	N	20+	2.0	No	2.0
DT5	Bennethorpe Rd	Kerbside	459113	402842	NO2	AQMA3	20+	0.5	No	2.0
DT6	A638 Bawtry Rd, adj. Racecourse	Roadside	459533	402768	NO2	N	20+	6.8	No	2.0
DT7	A638 Bawtry Rd,	Roadside	462933	399568	NO2	N	20+	1.0	No	2.0
DT8	Sheep Bridge Lane, adj. A6182	Kerbside	462865	399334	NO2	N	20+	2.3	No	2.0
DT9	Hurst Lane nr junc. A638 Bawtry Rd	Roadside	463901	398398	NO2	N	20+	0.8	No	2.0
DT10	Hayfield Lane, Auckley, nr Hurst Lane	Kerbside	464879	399699	NO2	N	20+	0.7	No	2.0
DT12	West End Lane, Rossington	Roadside	461164	398459	NO2	N	23.8	2.0	No	2.0
DT13	A638 Bawtry Road, Bessacarr	Roadside	462242	400134	NO2	AQMA4	20+	3.5	No	2.0
DT14	A638 Bawtry Road, Bessacarr	Roadside	461362	400777	NO2	N	14.0	3.2	No	2.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
DT15	M25 Trafford Way	Roadside	457701	403579	NO2	N	3.0	1.5	No	2.0
DT17	A638 White House	Kerbside	454686	405922	NO2	N	4.0	1.5	No	2.0
DT21	A630, Balby, Hall Flat Junction	Roadside	456182	401254	NO2	AQMA2	6.0	1.5	No	2.0
DT22	A630, Warmsworth, nr Warde Ave.	Roadside	455679	401000	NO2	AQMA2	10.7	2.5	No	2.0
DT23	A6023, Low Road, Conisbrough	Kerbside	451457	398659	NO2	AQMA5	1.2	1.0	No	2.0
DT24	A6023, junction A630, Conisbrough	Roadside	451419	398540	NO2	AQMA5	2.7	2.2	No	2.0
DT25	A630, Warmsworth / Waverley Ave.	Roadside	455635	401002	NO2	AQMA2	20+	1.5	No	2.0
DT26	A630 High Road, Balby / Oswin Ave.	Roadside	456130	401258	NO2	AQMA2	20+	2.5	No	2.0
DT27	A630 Balby Rd, Belmont Av	Roadside	457010	402060	NO2	AQMA2	1.0	1.5	No	2.0
DT28	A630 Balby Rd, Mansfield Rd	Roadside	457022	402136	NO2	AQMA2	0.3	3.7	No	2.0
DT29	Hayfield Lane, Auckley	Roadside	464986	399697	NO2	N	0.0	8.7	No	2.0
DT30	Gate House Lane, Auckley	Roadside	465719	400140	NO2	N	9.3	6.0	No	2.0
DT31	B1396 Mosham Road, Blaxton	Roadside	466895	400405	NO2	N	0.0	11.3	No	2.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
DT32	A614 Station Road, Blaxton	Roadside	467174	400372	NO2	N	0.0	5.5	No	2.0
DT33	Hatfield Moors, off A614 Thorne Road	Rural	468620	404175	NO2	N	20+	N/A	No	2.0
DT34	A614 Bawtry Rd, Hatfield Woodhouse	Roadside	467755	408643	NO2	N	20+	2.3	No	2.0
DT35	Hatfield Moors, Hollinbridge Lane	Rural	469056	407623	NO2	N	20+	N/A	No	2.0
DT36	Market Place Car Park, A630	Roadside	457615	403630	NO2	AQMA1	20+	6.3	No	2.0
DT37	A630 Trafford Way nr Frenchgate	Roadside	457379	403460	NO2	AQMA1	4.0	4.0	No	2.0
DT38	Church Road, Stainforth	Urban Background	464046	411818	NO2	N	20+	9.3	No	2.0
DT39	Howden Avenue, Skellow, nr Hill Crest	Roadside	452219	410224	NO2	AQMA6	0.0	7.0	No	2.0
DT40	Hill Crest, Skellow	Roadside	452195	410302	NO2	AQMA6	0.3	7.6	No	2.0
DT41	Hill Crest, Skellow, nr B1220	Roadside	452180	410377	NO2	AQMA6	6.7	9.4	No	2.0
DT42	Crabgate Lane, Skellow, nr B1220	Suburban	452180	410404	NO2	AQMA6	15.0	1.0	No	2.0
DT43	B1220 Hampole Balk Lane, Skellow	Roadside	452195	410389	NO2	AQMA6	12.0	1.8	No	2.0
DT44	A635 Doncaster Road, Hickleton	Kerbside	448230	405305	NO2	AQMA7	3.0	1.0	No	2.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
DT45	A635 Doncaster Road, Hickleton	Roadside	447966	405303	NO2	AQMA7	0.0	14.4	No	2.0
DT46	A635 Doncaster Road, Hickleton	Suburban	448148	405297	NO2	AQMA7	0.0	3.6	No	2.0
DT47	A635 Doncaster Road, Hickleton	Kerbside	448058	405319	NO2	AQMA7	0.3	0.8	No	2.0
DT48	A635 Doncaster Road, Hickleton	Kerbside	448235	405321	NO2	AQMA7	0.3	0.8	No	2.0
DT49	A635 Barnsley Road, Marr	Kerbside	451331	405223	NO2	AQMA7A	0.0	3.1	No	2.0
DT50	A614 King Street, Thorne	Roadside	468749	413300	NO2	N	0.5	2.0	No	2.0
DT51	A6023, Low Road, Conisbrough	Roadside	451445	398574	NO2	AQMA5	20+	2.1	No	2.0
DT52	A630 Doncaster Road, Conisbrough	Roadside	451485	398511	NO2	AQMA5	2.0	2.0	No	2.0
DT53	A6023, Low Road, Conisbrough	Kerbside	451452	398645	NO2	AQMA5	0.0	1.9	No	2.0
DT54	A6023, Low Road, Conisbrough	Roadside	451442	398647	NO2	AQMA5	0.3	1.8	No	2.0
DT55	A630 Doncaster Road, Conisbrough	Roadside	451626	398691	NO2	AQMA5	0.0	6.0	No	2.0
DT56	A6023 Doncaster Road, Mexborough	Roadside	448042	399884	NO2	N	3.0	4.0	No	2.0
DT57	A6023 Doncaster Road, Mexborough	Roadside	448005	399860	NO2	N	13.0	2.0	No	2.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
DT58	A635 Barnsley Road, Marr	Kerbside	451683	405225	NO2	AQMA7A	0.3	1.0	No	2.0
DT59	A635 Barnsley Road, Marr	Roadside	451514	405246	NO2	AQMA7A	0.0	18.0	No	2.0
DT60	St Leger Place, adj. A630 Church Way	Roadside	457870	403839	NO2	AQMA1	0.5	7.0	No	2.0
DT61	Dockin Hill Road, adj. Church Way	Roadside	457791	403767	NO2	AQMA1	0.5	15.5	No	2.0
DT62	A630 Church Way	Roadside	457733	403740	NO2	AQMA1	0.5	7.0	No	2.0
DT63	Market Road, adj. Market Place	Roadside	457701	403579	NO2	AQMA1	0.0	1.7	No	2.0
DT64	A630 Trafford Way nr Frenchgate	Roadside	457345	403433	NO2	AQMA1	0.0	13.4	No	2.0
DT65	Somerset Road, adj A18 Carr House Rd	Roadside	457995	402506	NO2	AQMA3	3.7	8.0	No	2.0
DT66	A18 Carr House Road	Roadside	458142	402563	NO2	AQMA3	0.0	5.8	No	2.0
DT67	A18 Carr House Road	Roadside	458259	402582	NO2	AQMA3	0.0	6.3	No	2.0
DT68	High Grove Court, nr M18, Bessacarr	Roadside	462520	400757	NO2	AQMA4	0.0	4.7	No	2.0
DT69	Footbridge, adj M18, Bessacarr	Roadside	462500	400708	NO2	AQMA4	0.0	12.9	No	2.0
DT70, DT71, DT72	Co-location Market Place	Urban Centre	457669	403611	NO2	AQMA1	20+	25.0	Yes	2.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
DT73, DT74, DT75	Co-location Hickleton	Kerbside	448067	405300	NO2	AQMA7	10.0	1.5	Yes	2.0

Notes:

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

(2) N/A if not applicable.

Table A.3 – Annual Mean NO2 Monitoring Results: Automatic Monitoring (µg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2018	2019	2020	2021	2022
CM1	458027	402475	Roadside	94.45	94.45	-	20.1	30.3	20.1	26.72
CM2	457669	403611	Urban Centre	98.64	82.20	25.6	-	-	-	23.52
CM3	454964	400745	Roadside	-	-	-	23	-	-	-
CM4	462278	400111	Roadside	-	-	28.1	-	-	-	-
CM5	451438	398528	Roadside	96.65	96.65	30.5	25.4	22.8	24.8	27.24
CM6	452185	410380	Roadside	-	-	37.3	27.9	27.2	25.8	-
CM7	448067	405300	Roadside	87.58	72.98	-	-	-	-	19.05
CM8	457249	402747	Roadside	93.13	93.13	29	30	24	26	24.27

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

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

Notes:

The annual mean concentrations are presented as µg/m³.

Exceedances of the NO_2 annual mean objective of 40µg/m³ are shown in **bold**.

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

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

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

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

Table A.4 – Annual Mean NO2 Monitoring Results: Non-Automatic Monitoring (µg/m^3)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2022 (%) [2]	2018	2019	2020	2021	2022
DT1	456992	403757	Kerbside	50	50.0	32.0	28.4	22.5	23.4	22.3
DT2	457308	403458	Roadside	91.67	93.7	**41.0**	36.8	31.9	30.0	30.2
DT3	457957	403152	Kerbside	91.67	90.9	31.0	27.2	22.9	21.3	22.7
DT4	457952	403123	Roadside	100	100.0	39.0	35.2	29.7	30.9	32.6
DT5	459113	402842	Kerbside	100	100.0	37.0	34.7	27.8	30.7	33.0
DT6	459533	402768	Roadside	100	100.0	30.0	28.9	21.4	23.8	24.8
DT7	462933	399568	Roadside	100	100.0	-	30.1	24.6	24.4	26.9
DT8	462865	399334	Kerbside	100	100.0	26.0	23.1	17.5	17.7	18.6
DT9	463901	398398	Roadside	91.67	90.4	27.0	20.0	15.3	15.2	17.9
DT10	464879	399699	Kerbside	100	100.0	22.0	22.0	-	17.5	17.9
DT12	461164	398459	Roadside	91.67	90.4	27.0	26.4	-	23.7	22.6
DT13	462242	400134	Roadside	100	100.0	**41.0**	38.3	28.8	30.6	29.6

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2022 (%) [2]	2018	2019	2020	2021	2022
DT14	461362	400777	Roadside	100	100.0	37.0	37.3	28.9	29.9	31.1
DT15	457577	402732	Roadside	83.33	82.7	**43.0**	38.0	31.0	28.0	31.6
DT17	454686	405922	Kerbside	100	100.0	**47.0**	**43.0**	34.0	36.0	33.7
DT21	456182	401254	Roadside	100	100.0	**50.0**	**46.2**	36.9	37.6	38.0
DT22	455679	401000	Roadside	58.33	59.6	**52.0**	**46.1**	37.5	37.1	33.1
DT23	451457	398659	Kerbside	100	100.0	**40.0**	37.6	29.8	28.7	30.2
DT24	451419	398540	Roadside	100	100.0	**43.0**	39.1	32.0	31.2	32.1
DT25	455635	401002	Roadside	100	100.0	**41.0**	37.9	29.9	30.6	30.4
DT26	456130	401258	Roadside	100	100.0	39.0	34.2	27.1	28.3	28.4
DT27	457010	402060	Roadside	83.33	82.7	**45.0**	**40.0**	33.6	31.9	31.5
DT28	457022	402136	Roadside	83.33	82.7	**57.0**	**49.0**	**40.4**	**40.8**	**42.0**
DT29	464986	399697	Roadside	75	75.0	16.0	15.9	-	11.7	15.7
DT30	465719	400140	Roadside	91.67	90.4	19.0	16.0	13.6	14.2	14.3
DT31	466895	400405	Roadside	91.67	90.4	16.0	14.1	11.6	11.2	13.1

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2022 (%) [2]	2018	2019	2020	2021	2022
DT32	467174	400372	Roadside	91.67	90.4	19.0	15.4	13.0	19.2	21.3
DT33	468620	404175	Rural	83.33	71.2	11.0	8.7	7.9	7.2	9.3
DT34	467755	408643	Roadside	91.67	90.4	21.0	18.5	14.4	13.7	16.3
DT35	469056	407623	Rural	83.33	82.7	13.0	9.9	-	8.3	10.4
DT36	457615	403630	Roadside	91.67	92.3	37.0	31.9	27.9	27.1	29.4
DT37	457379	403460	Roadside	100	100.0	**41.0**	39.0	29.9	29.0	34.0
DT38	464046	411818	Urban Background	100	100.0	19.0	15.6	13.8	14.1	13.5
DT39	452219	410224	Roadside	100	100.0	**41.0**	36.7	27.6	28.1	27.7
DT40	452195	410302	Roadside	100	100.0	**45.0**	38.1	28.9	30.3	29.1
DT41	452180	410377	Roadside	100	100.0	**48.0**	**40.8**	30.4	31.5	31.8
DT42	452180	410404	Suburban	100	100.0	**43.0**	38.0	26.7	28.2	29.8
DT43	452195	410389	Roadside	100	100.0	**40.0**	34.0	24.4	25.2	25.8
DT44	448230	405305	Kerbside	100	100.0	**70.0**	**67.0**	**50.7**	**51.0**	**52.0**
DT45	447966	405303	Roadside	100	100.0	25.0	22.0	16.8	15.9	15.3

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2022 (%) [2]	2018	2019	2020	2021	2022
DT46	448148	405297	Suburban	100	100.0	**40.0**	35.0	24.9	26.0	25.8
DT47	448058	405319	Kerbside	75	76.4	**91.0**	**76.0**	**59.4**	**54.1**	**54.2**
DT48	448235	405321	Kerbside	91.67	93.7	**87.0**	**80.0**	**55.8**	**55.2**	**61.1**
DT49	451331	405223	Kerbside	100	100.0	**43.0**	37.0	27.4	28.3	28.1
DT50	468749	413300	Roadside	100	100.0	**41.0**	38.0	28.5	30.4	30.6
DT51	451445	398574	Roadside	100	100.0	35.0	31.0	24.3	24.6	25.0
DT52	451485	398511	Roadside	100	100.0	**44.0**	39.0	30.9	33.2	33.9
DT53	451452	398645	Kerbside	100	100.0	**43.0**	36.2	29.1	30.4	31.4
DT54	451442	398647	Roadside	91.67	90.4	**47.0**	**44.1**	36.1	37.1	37.3
DT55	451626	398691	Roadside	100	100.0	34.0	31.0	23.4	23.6	23.7
DT56	448042	399884	Roadside	16.67	17.3	**41.0**	38.0	28.3	34.5	**-**
DT57	448005	399860	Roadside	91.67	92.3	**45.0**	37.0	27.0	27.9	29.0
DT58	451683	405225	Kerbside	100	100.0	**43.0**	38.0	31.6	29.8	30.6
DT59	451514	405246	Roadside	58.33	59.6	23.0	20.0	-	13.4	13.1

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2022 (%) [2]	2018	2019	2020	2021	2022
DT60	457870	403839	Roadside	100	100.0	**43.5**	36.9	29.3	28.7	26.1
DT61	457791	403767	Roadside	100	100.0	**42.0**	37.0	27.4	27.5	26.3
DT62	457733	403740	Roadside	91.67	92.3	**53.1**	**45.3**	32.9	34.8	32.2
DT63	457701	403579	Roadside	50	50.0	**49.7**	**42.3**	28.9	35.0	28.5
DT64	457345	403433	Roadside	91.67	93.7	**48.6**	**44.1**	33.2	32.9	32.9
DT65	457995	402506	Roadside	91.67	92.3	38.6	34.0	27.7	26.3	30.1
DT66	458142	402563	Roadside	100	100.0	**42.9**	37.5	30.9	32.9	31.4
DT67	458259	402582	Roadside	100	100.0	38.0	31.8	26.3	27.6	25.5
DT68	462520	400757	Roadside	100	100.0	-	-	16.4	16.9	16.5
DT69	462500	400708	Roadside	100	100.0	-	-	18.2	18.7	17.3
DT70, DT71, DT72	457669	403611	Urban Centre	100	100.0	-	-	-	-	24.8
DT73, DT74, DT75	448067	405300	Kerbside	100	100.0	-	-	-	-	14.8

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

☒ **Diffusion tube data has been bias adjusted.**

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

Notes:

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

Exceedances of the NO2 annual mean objective of 40µg/m^3 are shown in **bold**.

NO2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO2 1-hour mean objective are shown in **bold and underlined**.

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

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

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

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

Figure A.1a – Trends in Annual Mean NO2 Concentrations AQMA 1

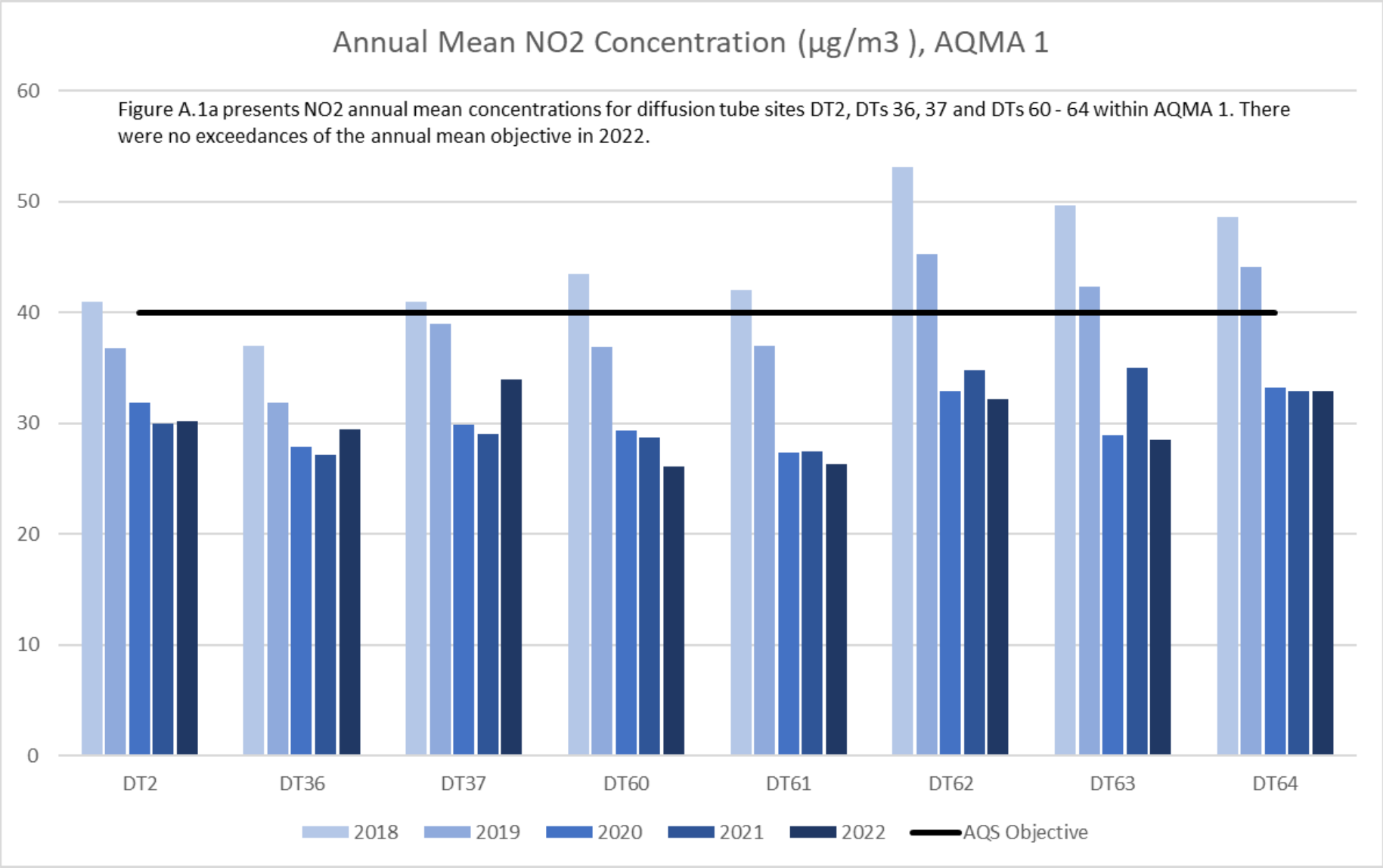


Figure A.1b – Trends in Annual Mean NO2 Concentrations, AQMA 2

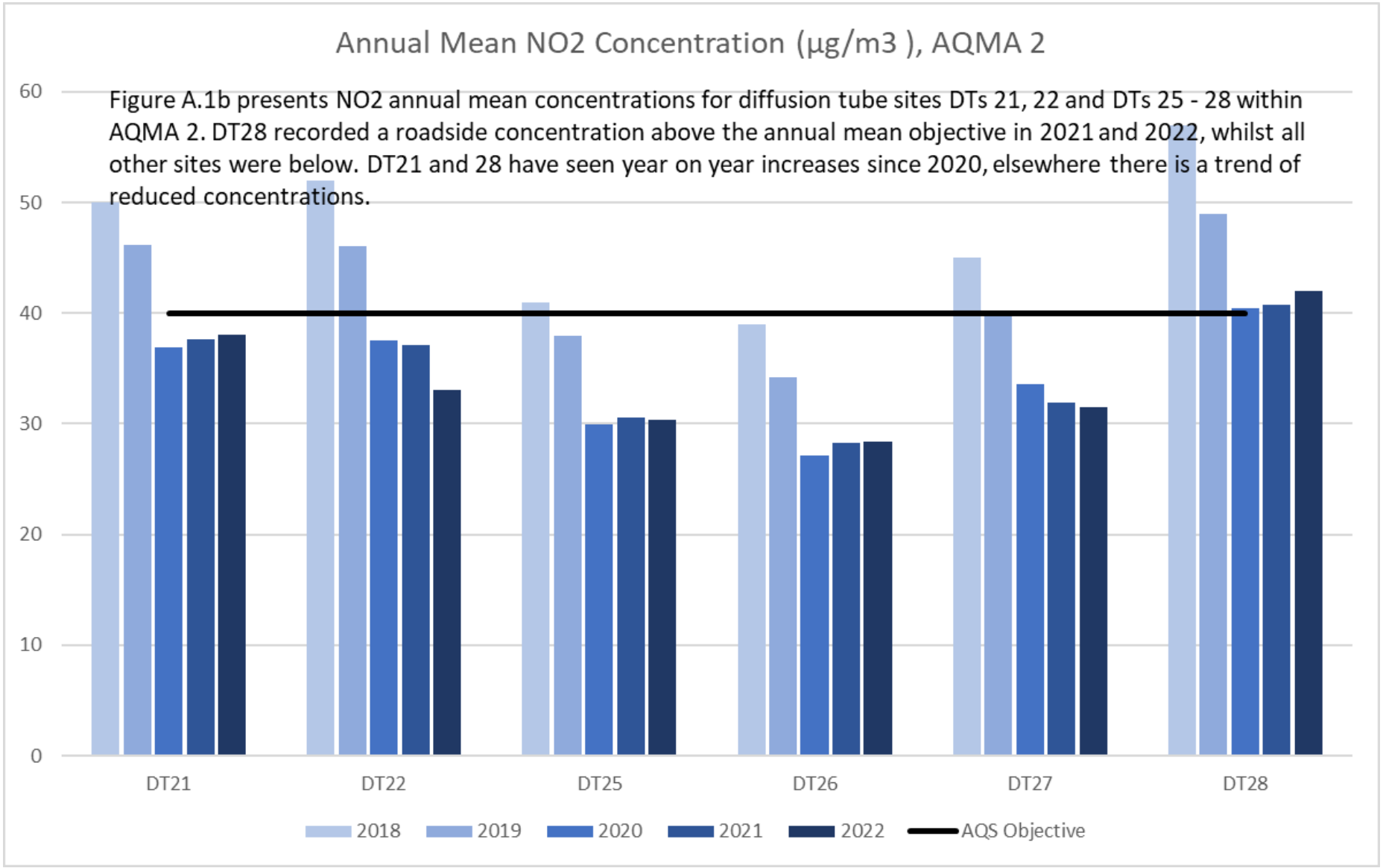


Figure A.1c – Trends in Annual Mean NO2 Concentrations, AQMA 3

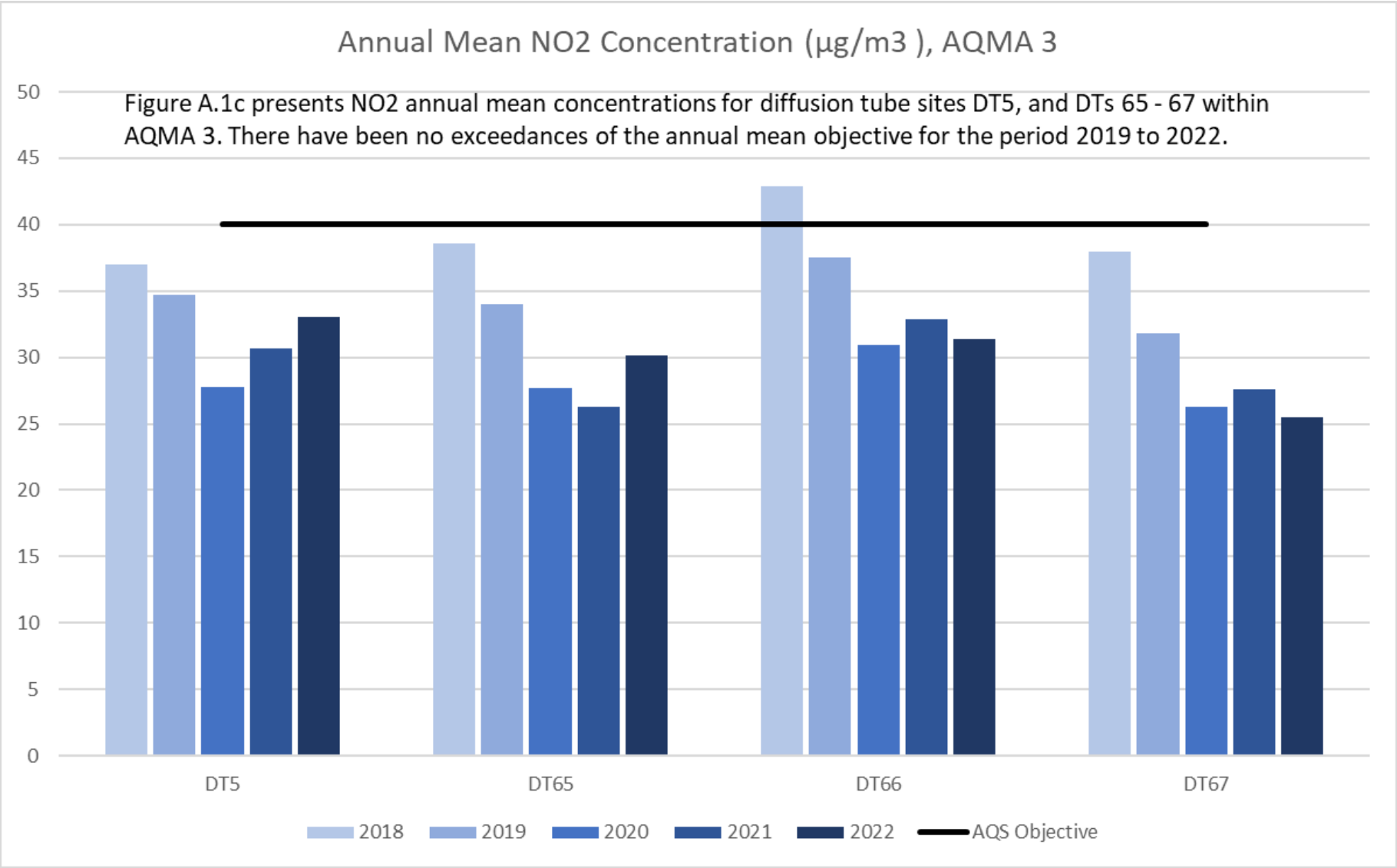


Figure A.1d – Trends in Annual Mean NO2 Concentrations, AQMA 4

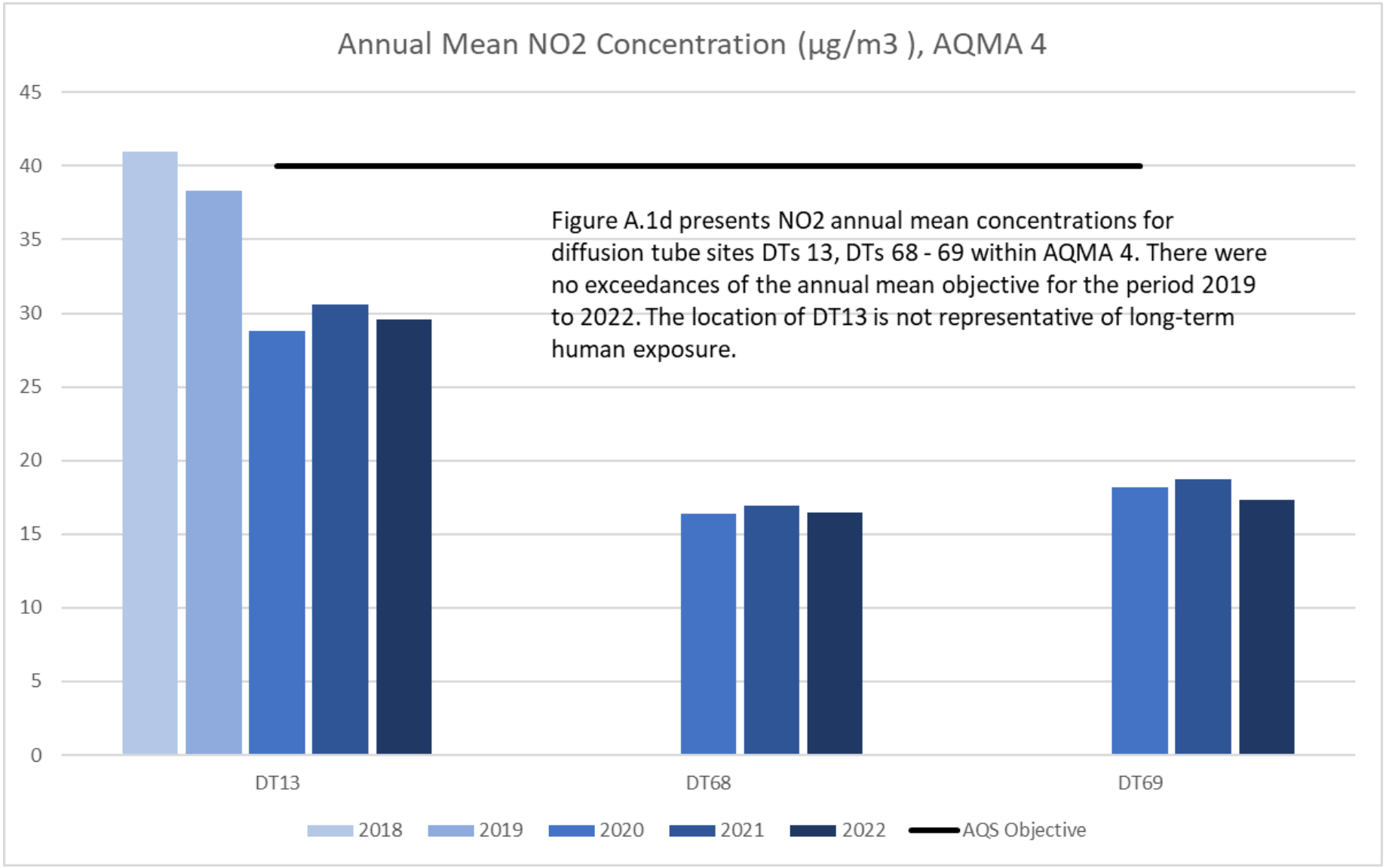


Figure A.1e – Trends in Annual Mean NO2 Concentrations, AQMA 5

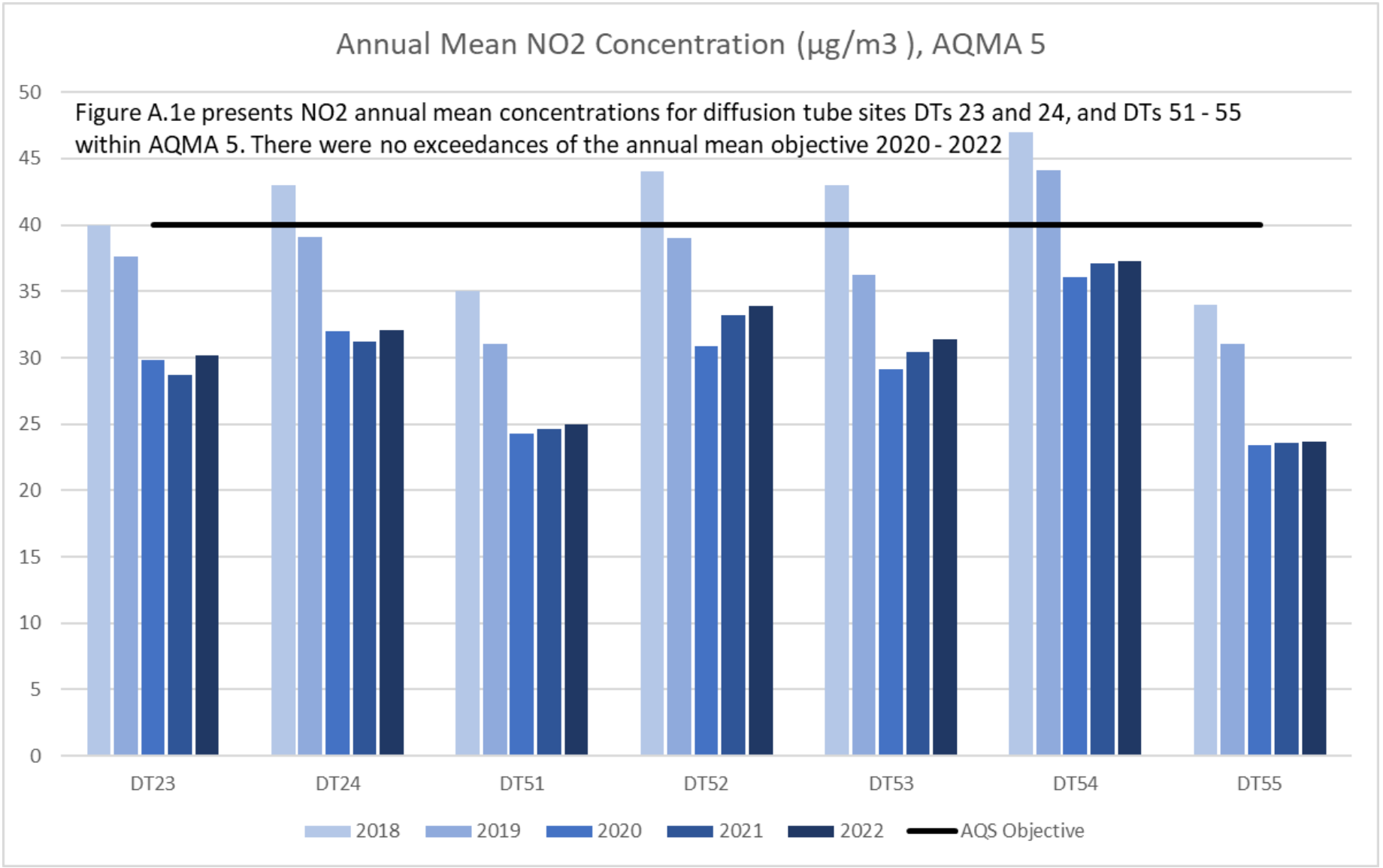


Figure A.1f – Trends in Annual Mean NO2 Concentrations, AQMA 6

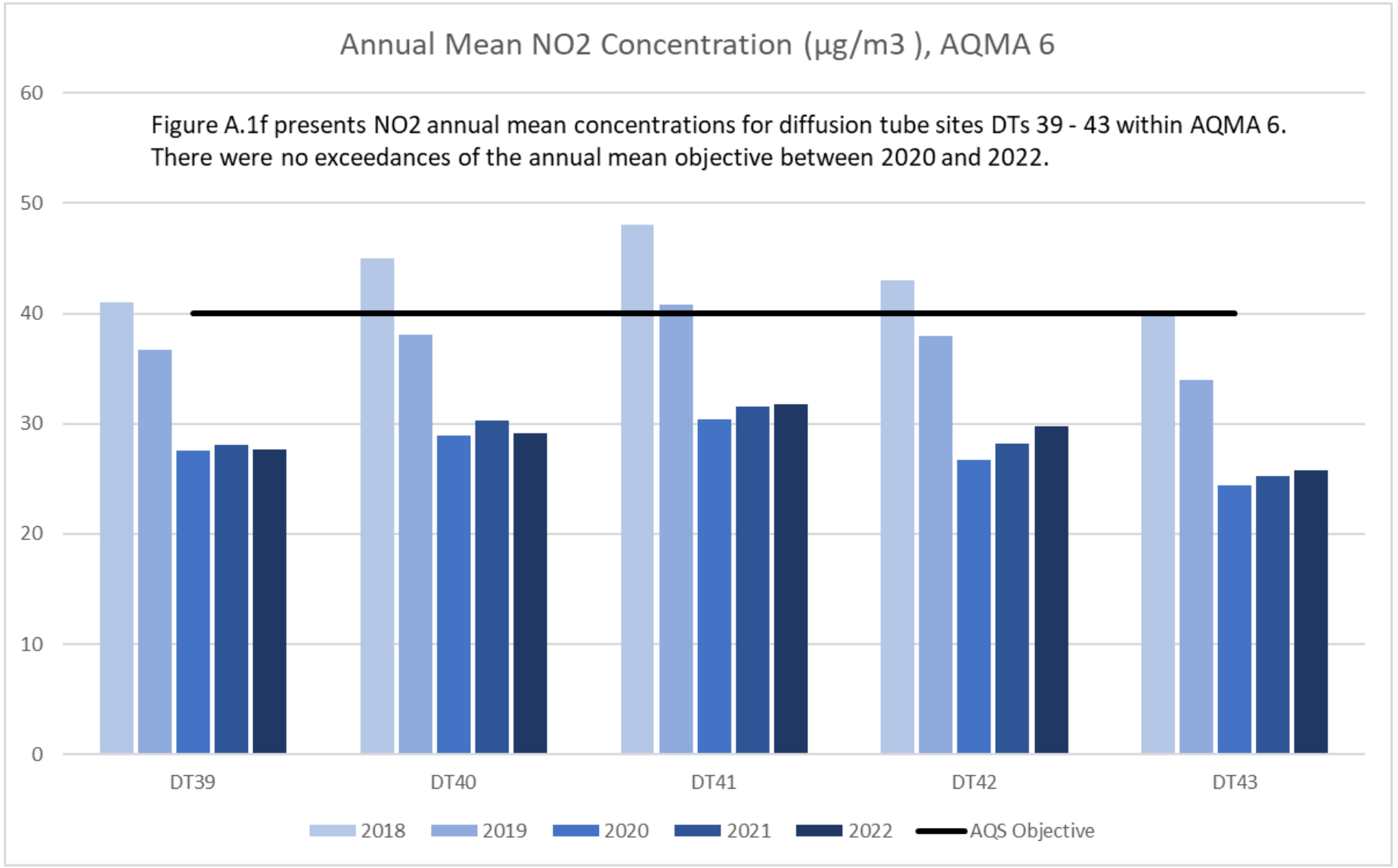


Figure A.1g – Trends in Annual Mean NO2 Concentrations, AQMA 7

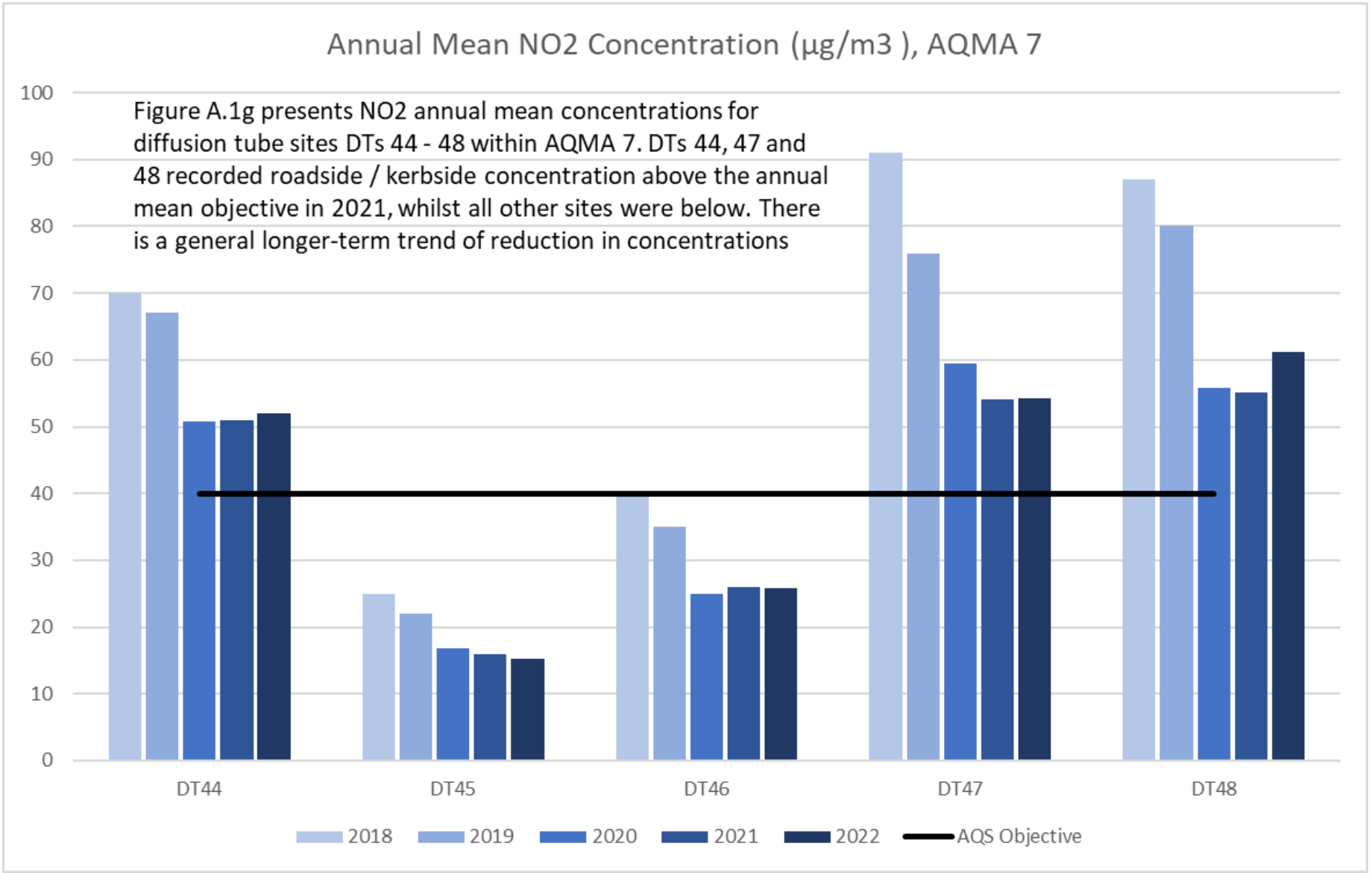


Figure A.1h – Trends in Annual Mean NO2 Concentrations, AQMA 7A

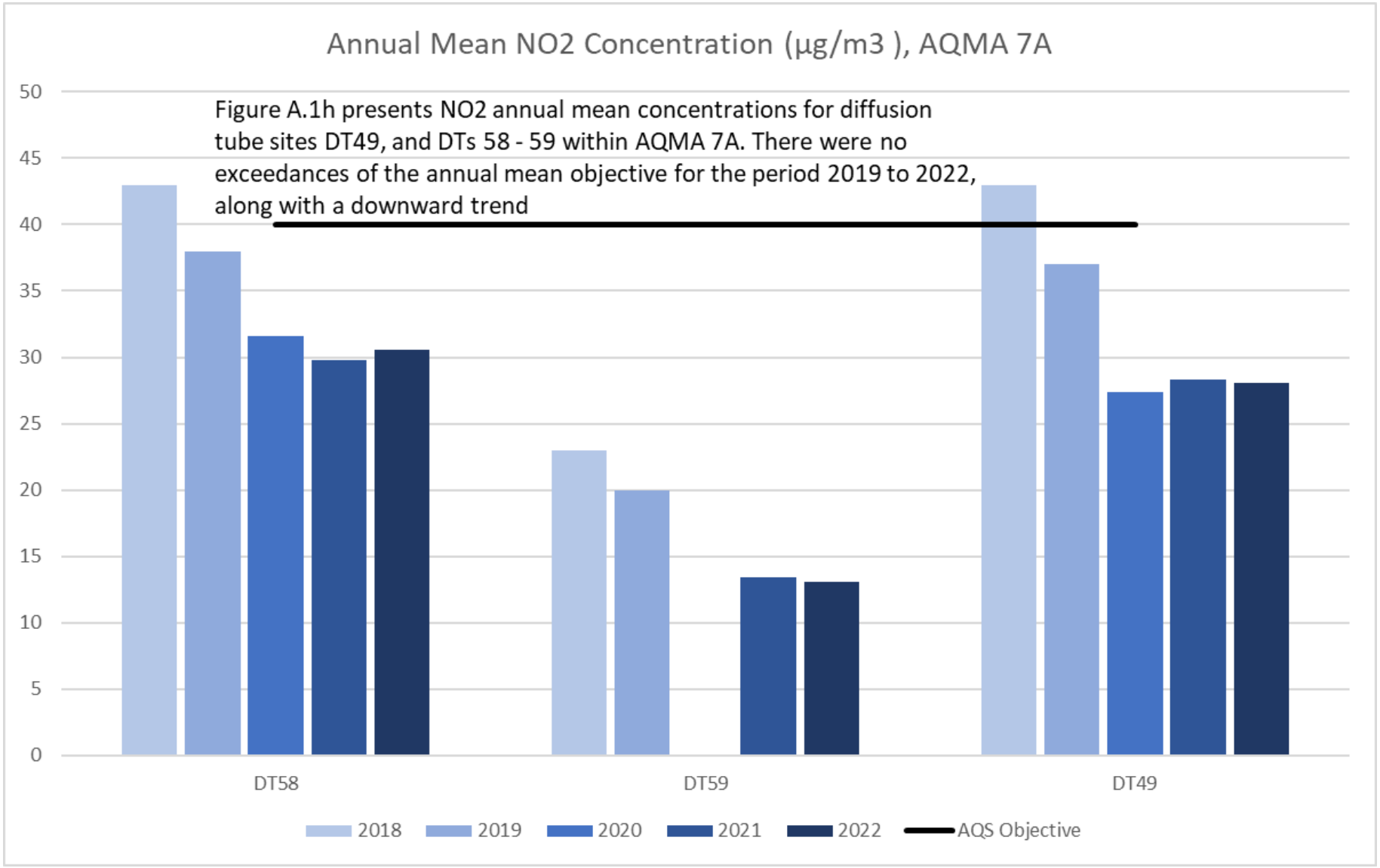


Figure A.1i – Trends in Annual Mean NO2 Concentrations, Airport

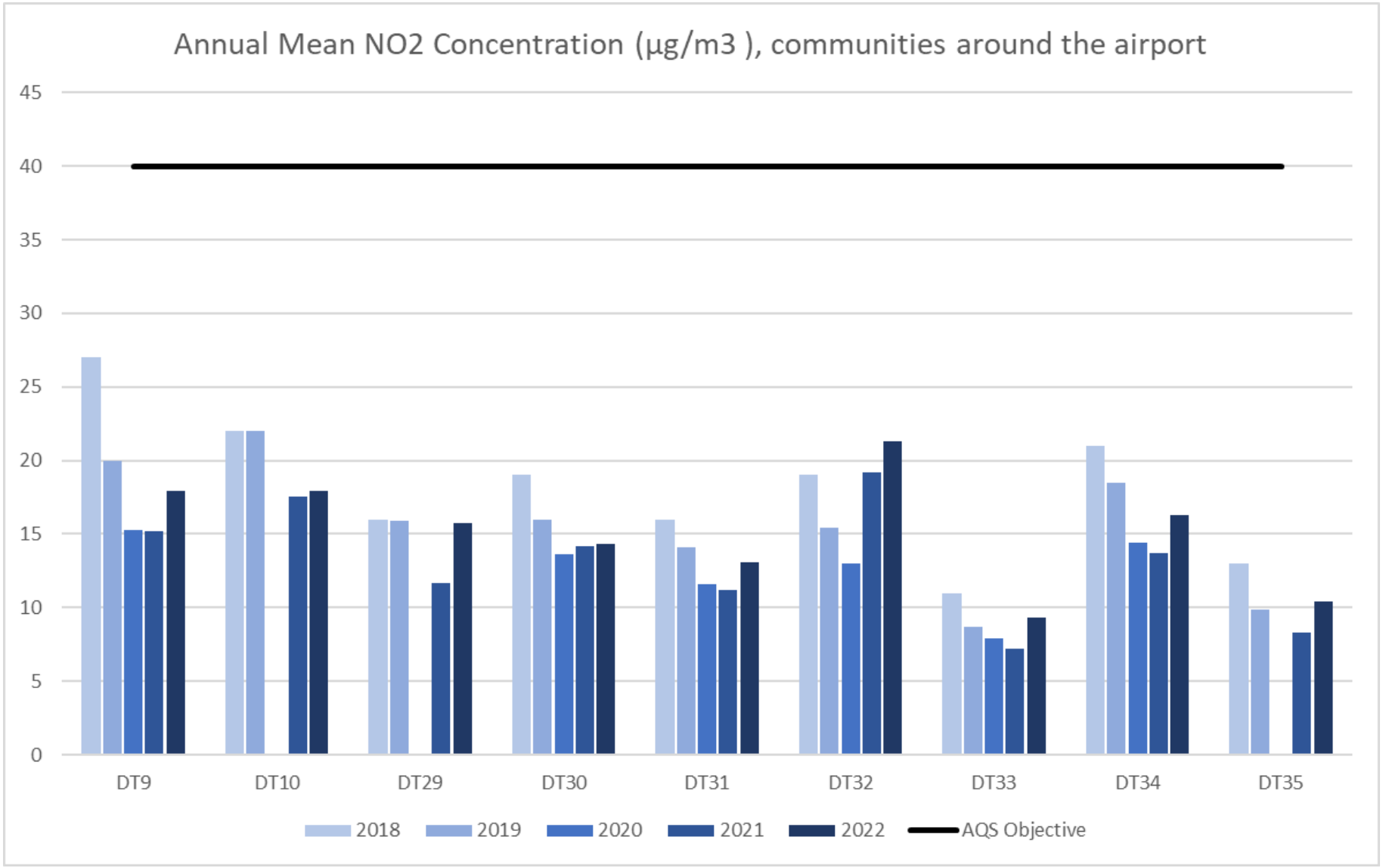


Figure A.1j – Trends in Annual Mean NO2 Concentrations, Rossington

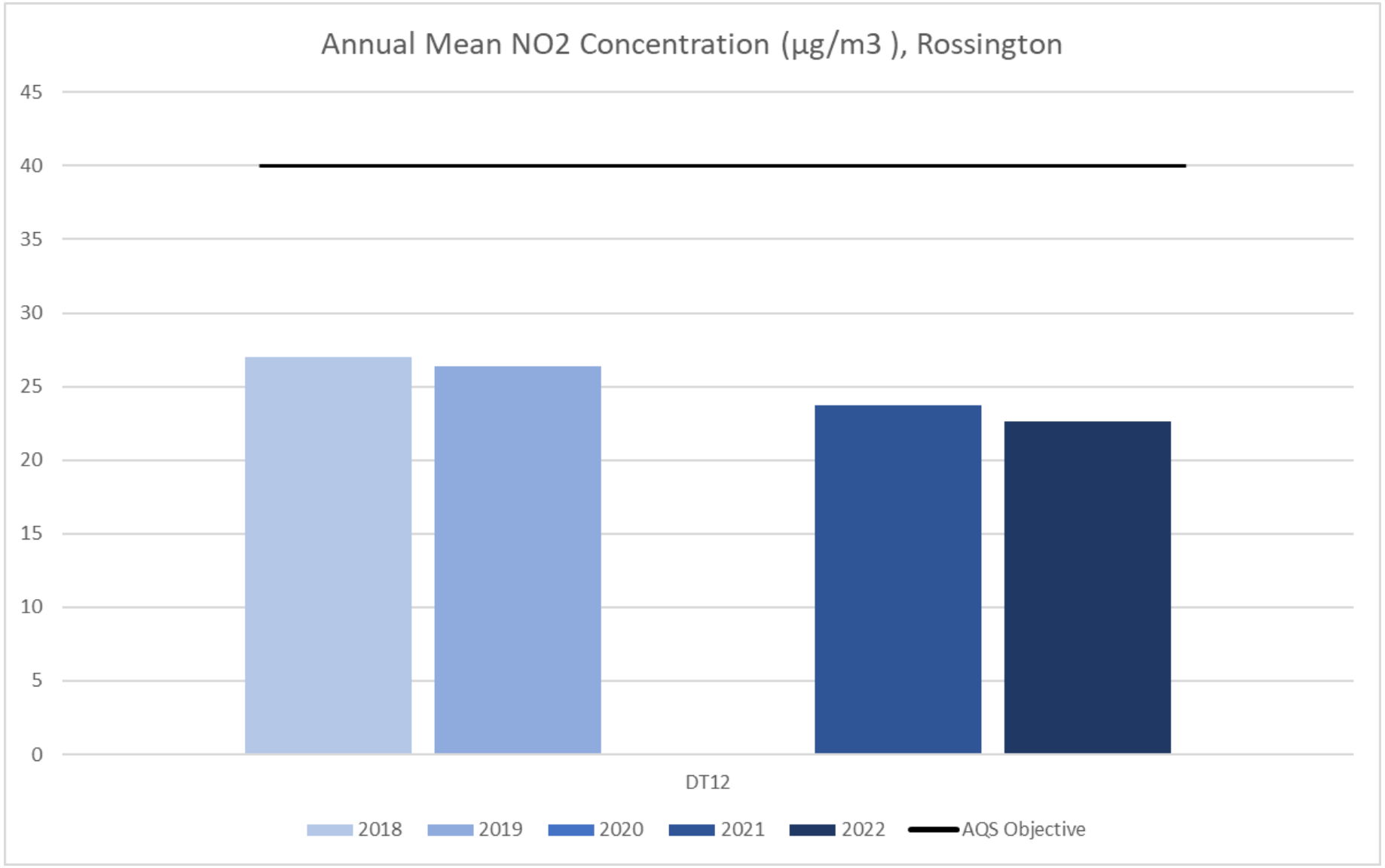


Figure A.1.k – Trends in Annual Mean NO2 Concentrations, Thorne and Stainforth

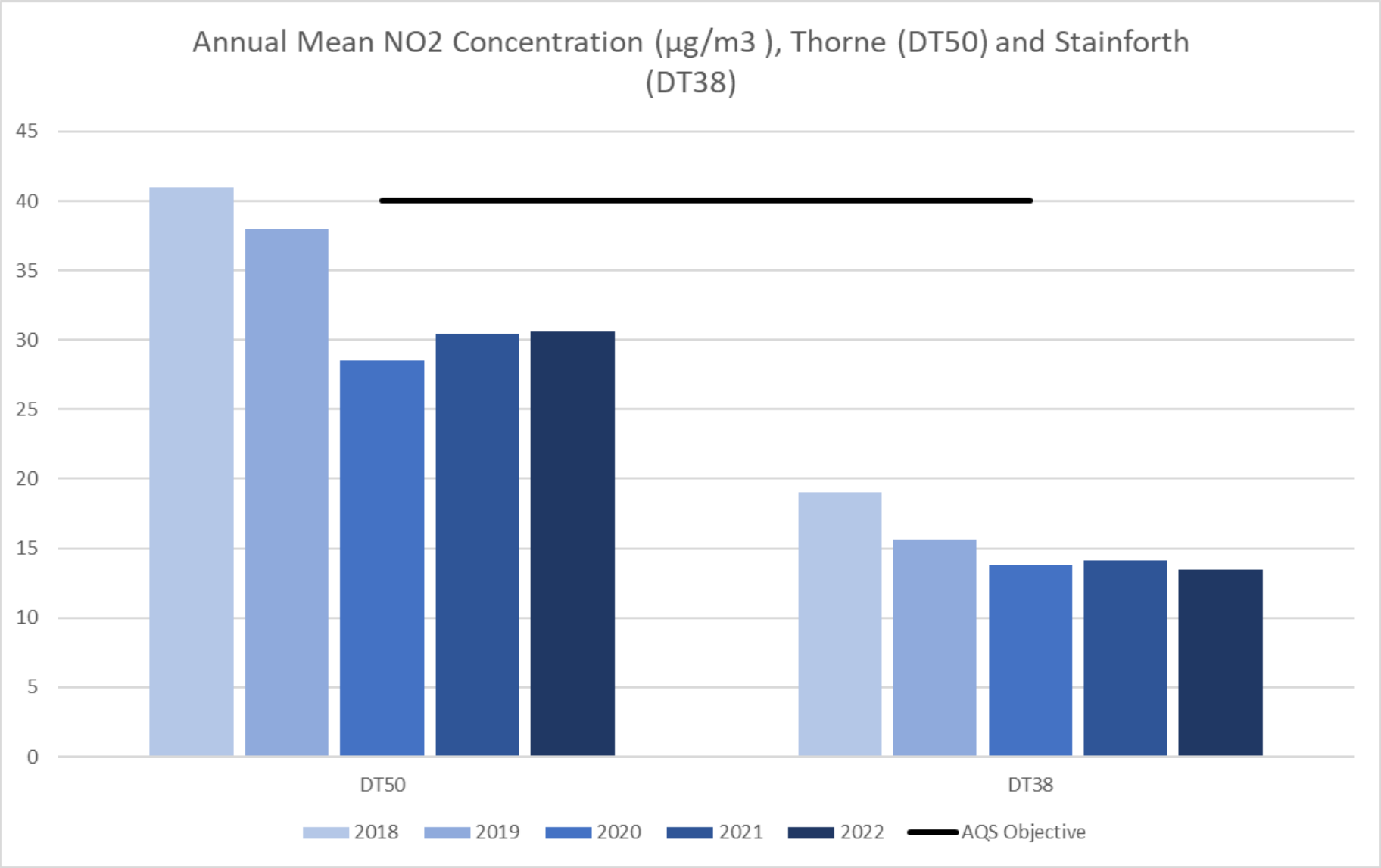


Figure A.1l – Trends in Annual Mean NO2 Concentrations, near Great Yorkshire Way

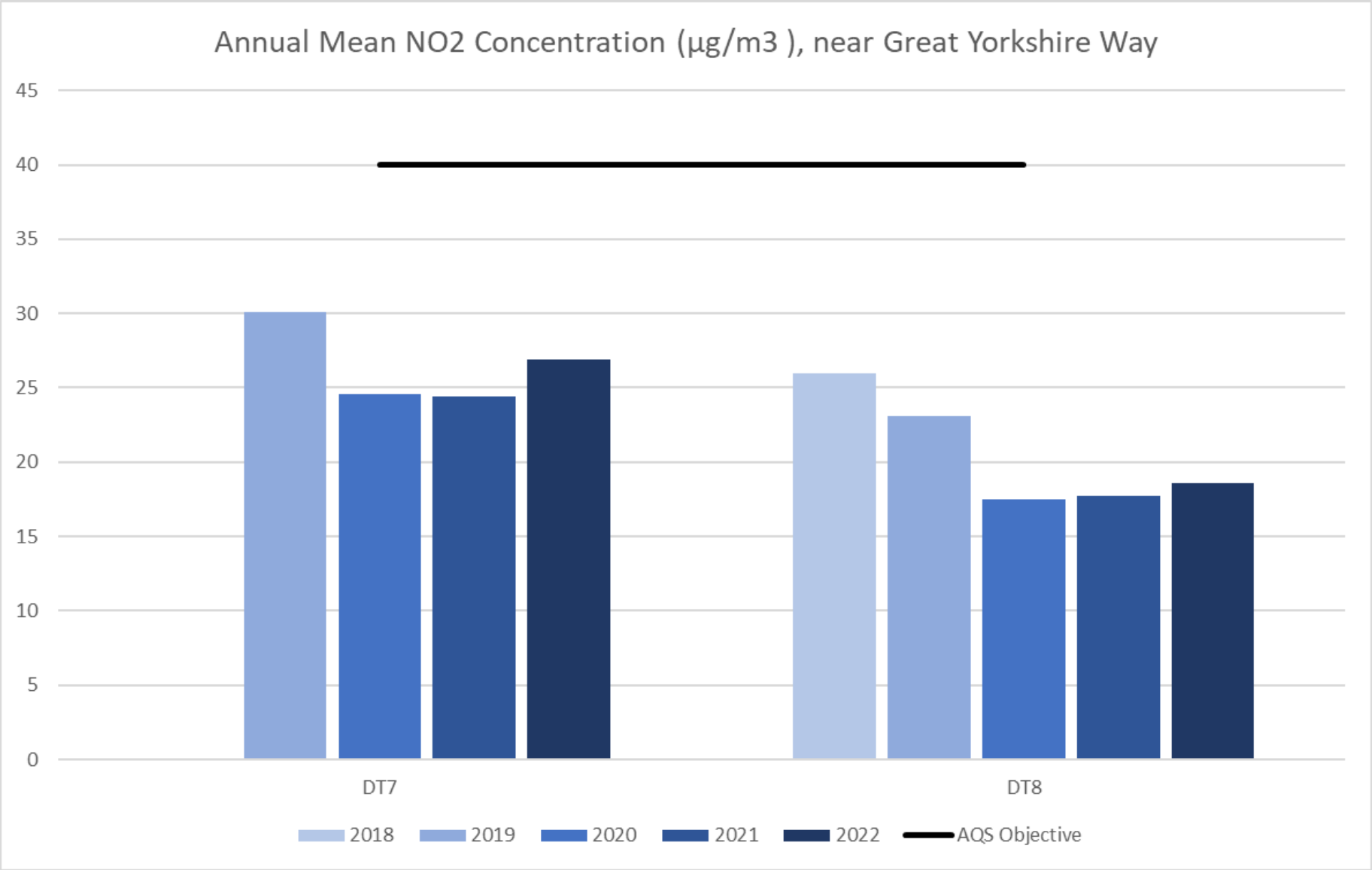


Figure A.1.m – Trends in Annual Mean NO2 Concentrations, Mexborough

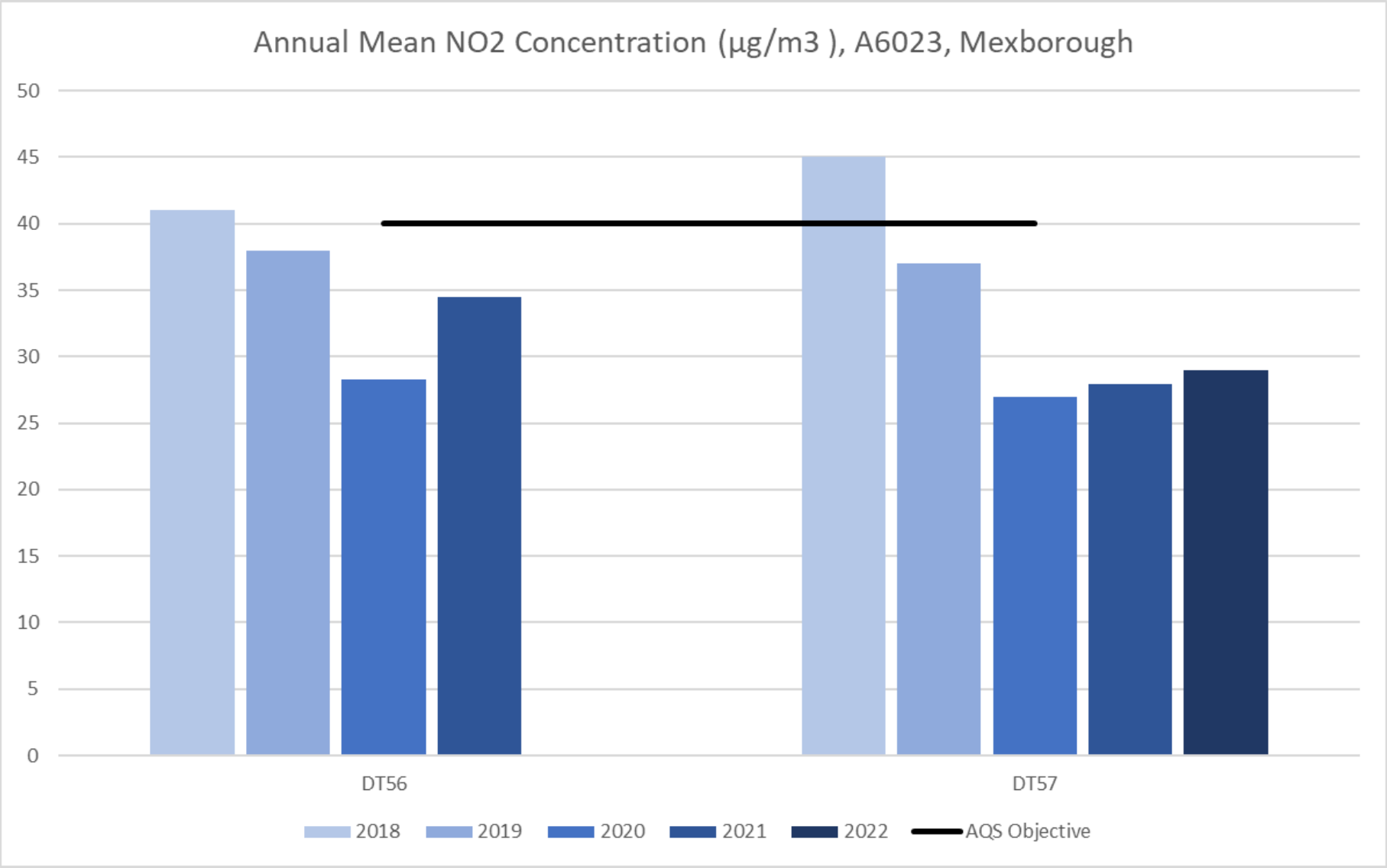


Figure A.1.n – Trends in Annual Mean NO2 Concentrations, Doncaster Centre

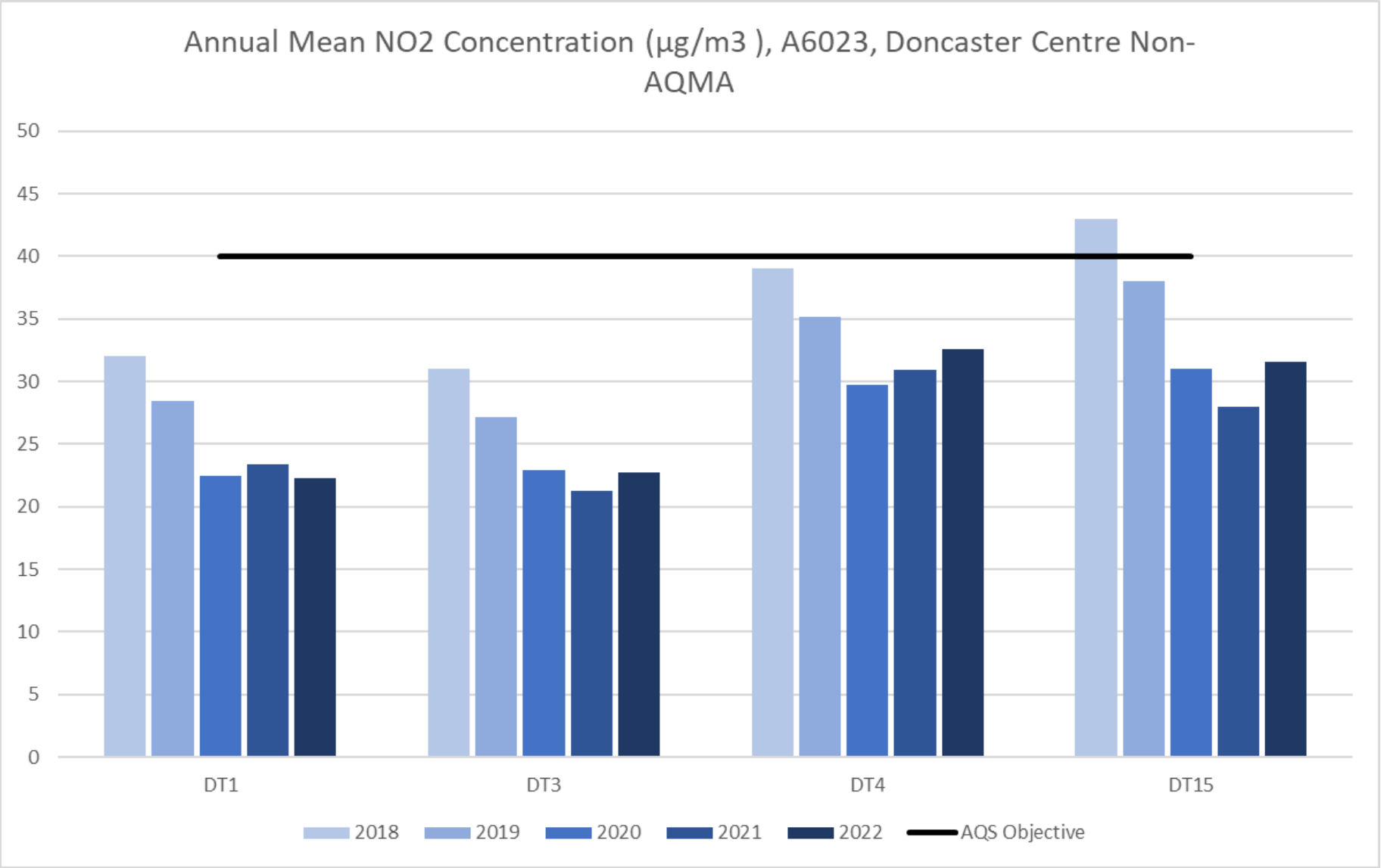


Figure A.1.o – Trends in Annual Mean NO2 Concentrations, Bawtry Road

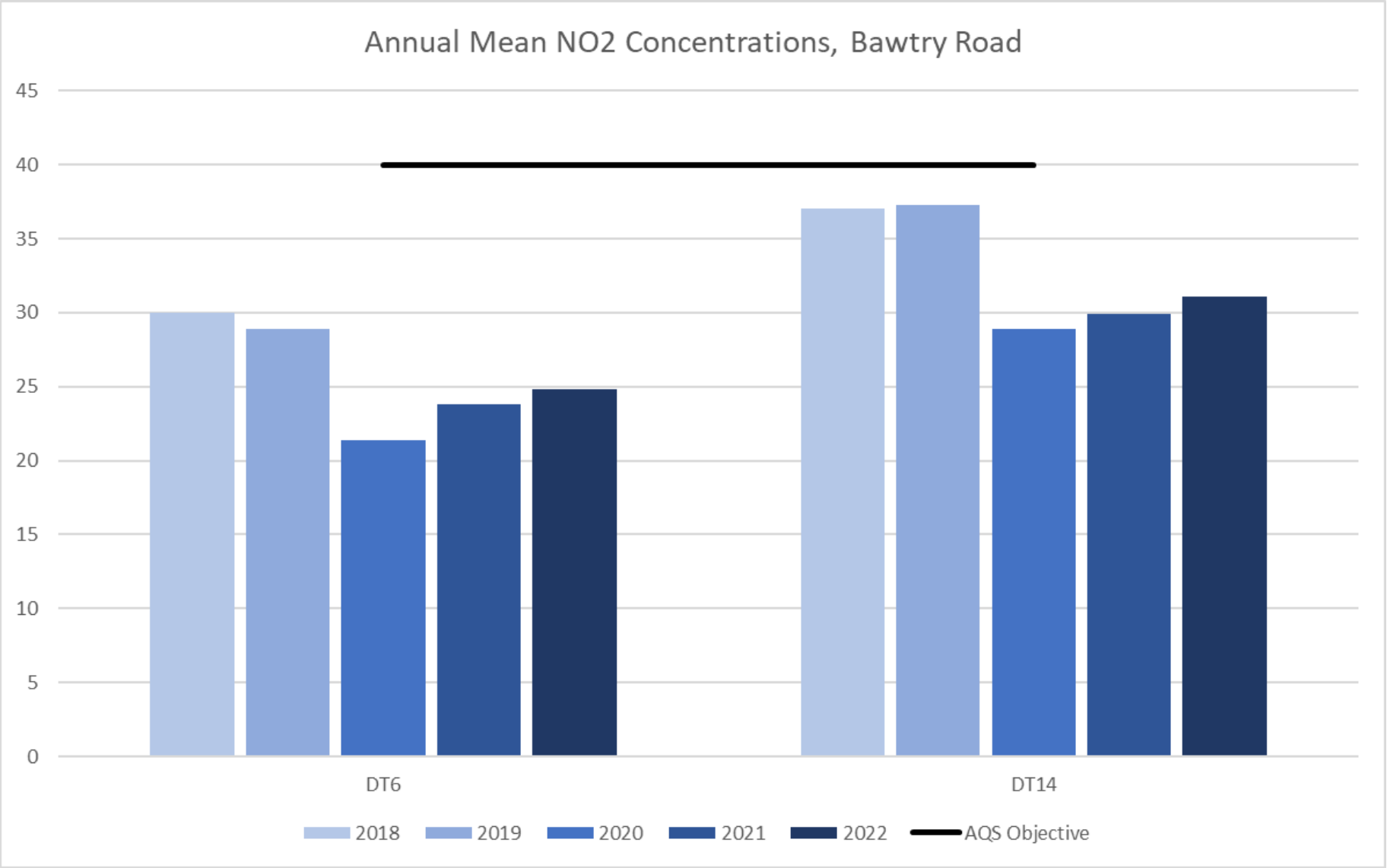


Figure A.1.p – Trends in Annual Mean NO2 Concentrations, York Road

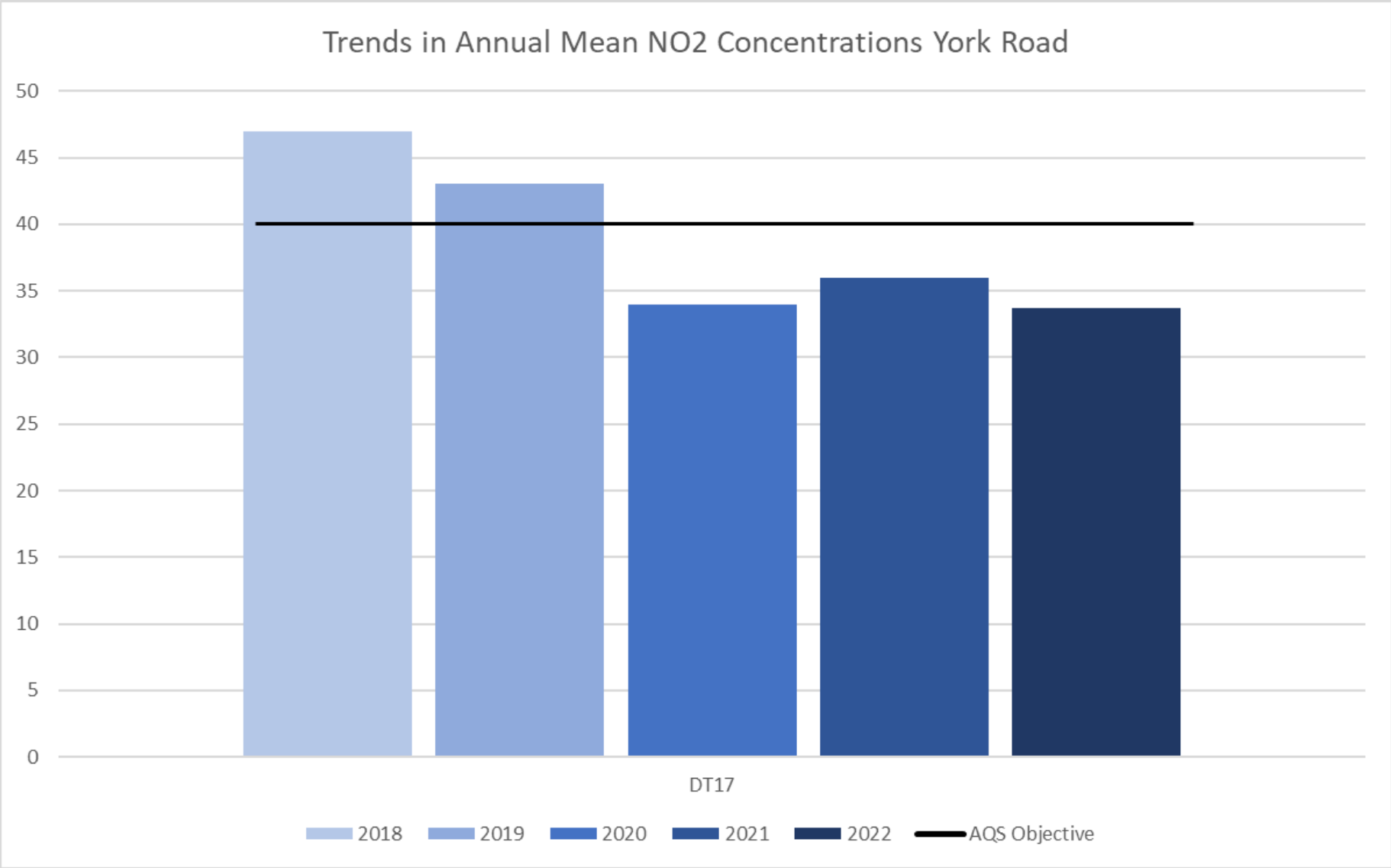


Figure A.1.q – Trends in Annual Mean NO2 Concentration, Hatfield Moors

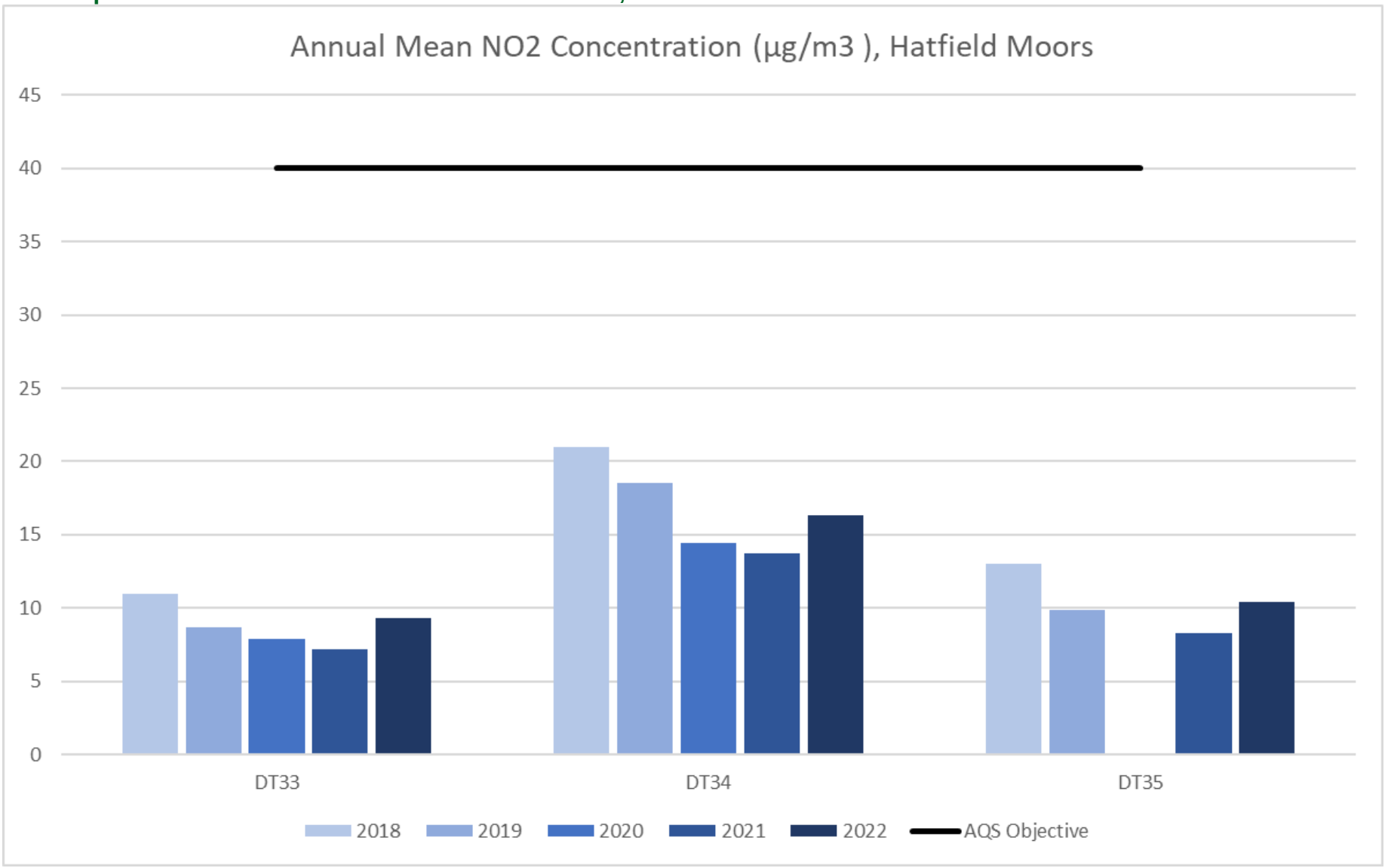
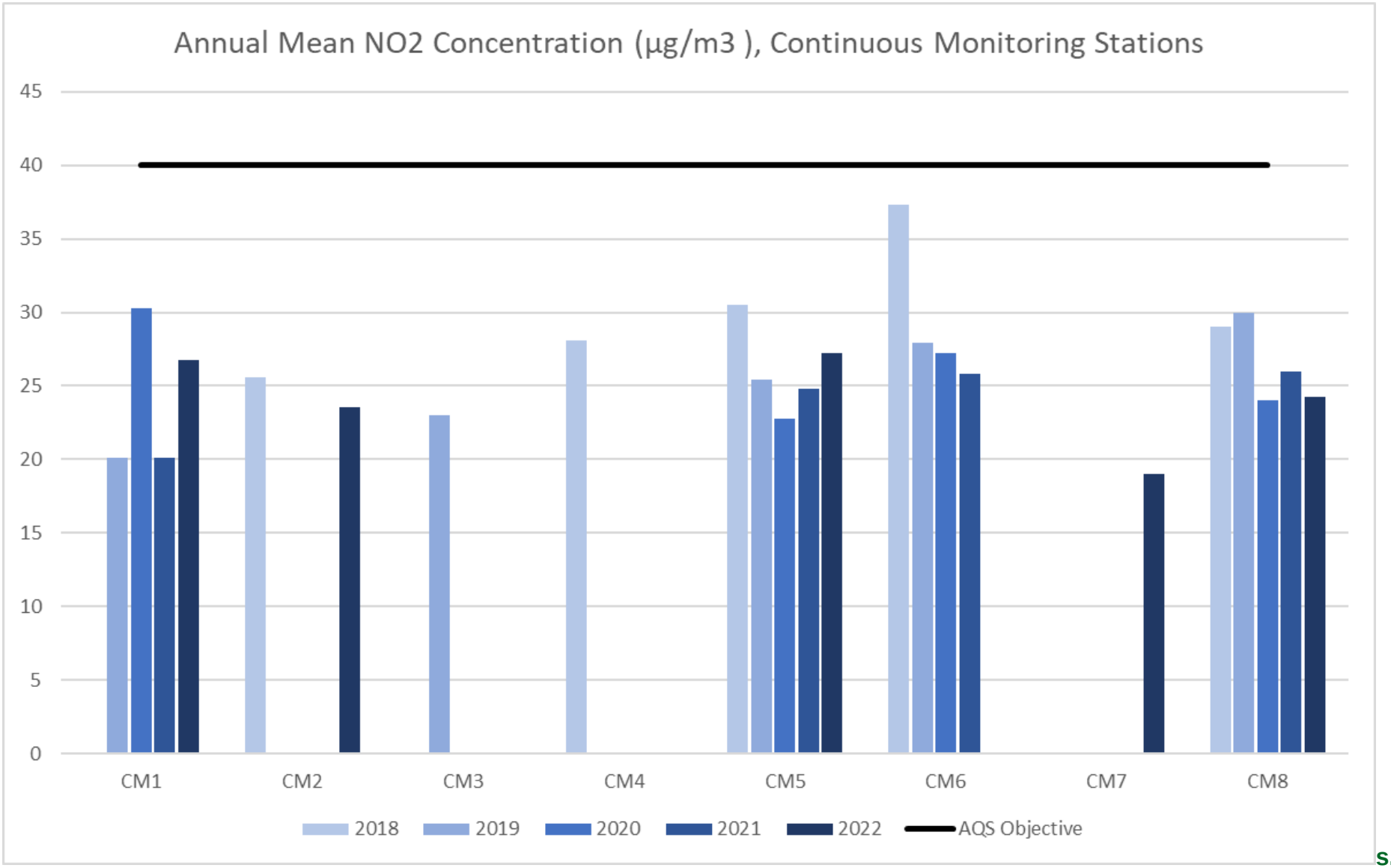


Figure A.1.r – Trends in Annual Mean NO2 Concentration Continuous Monitoring Stations



s,

Table A.5 – 1-Hour Mean NO2 Monitoring Results, Number of 1-Hour Means > 200µg/m^3

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2018	2019	2020	2021	2022
CM1	458027	402475	Roadside	94.45	94.45	0 (94)	-	0 (48)	0 (97)	0
CM2	457669	403611	Urban Centre	98.64	82.2	0	0	-	-	0
CM3	454964	400745	Roadside	-	-	0	-	0 (114)	-	-
CM4	462278	400111	Roadside	-	-	0 (114)	0	-	-	-
CM5	451438	398528	Roadside	96.65	96.65	0 (116)	0	0 (58)	0 (96)	0
CM6	452185	410380	Roadside	-	-	6	0	0	0 (78)	-
CM7	448067	405300	Roadside	87.58	72.98	-	-	-	-	0 (83)
CM8	457249	402747	Roadside	93.13	93.13	0	0	0	0	0

Notes:

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

Exceedances of the NO_2 1-hour mean objective (200µg/m^3 not to be exceeded more than 18 times/year) are shown in **bold**.

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

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

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

Figure A.2 – Trends in Number of NO2 1-Hour Means > 200µg/m^3

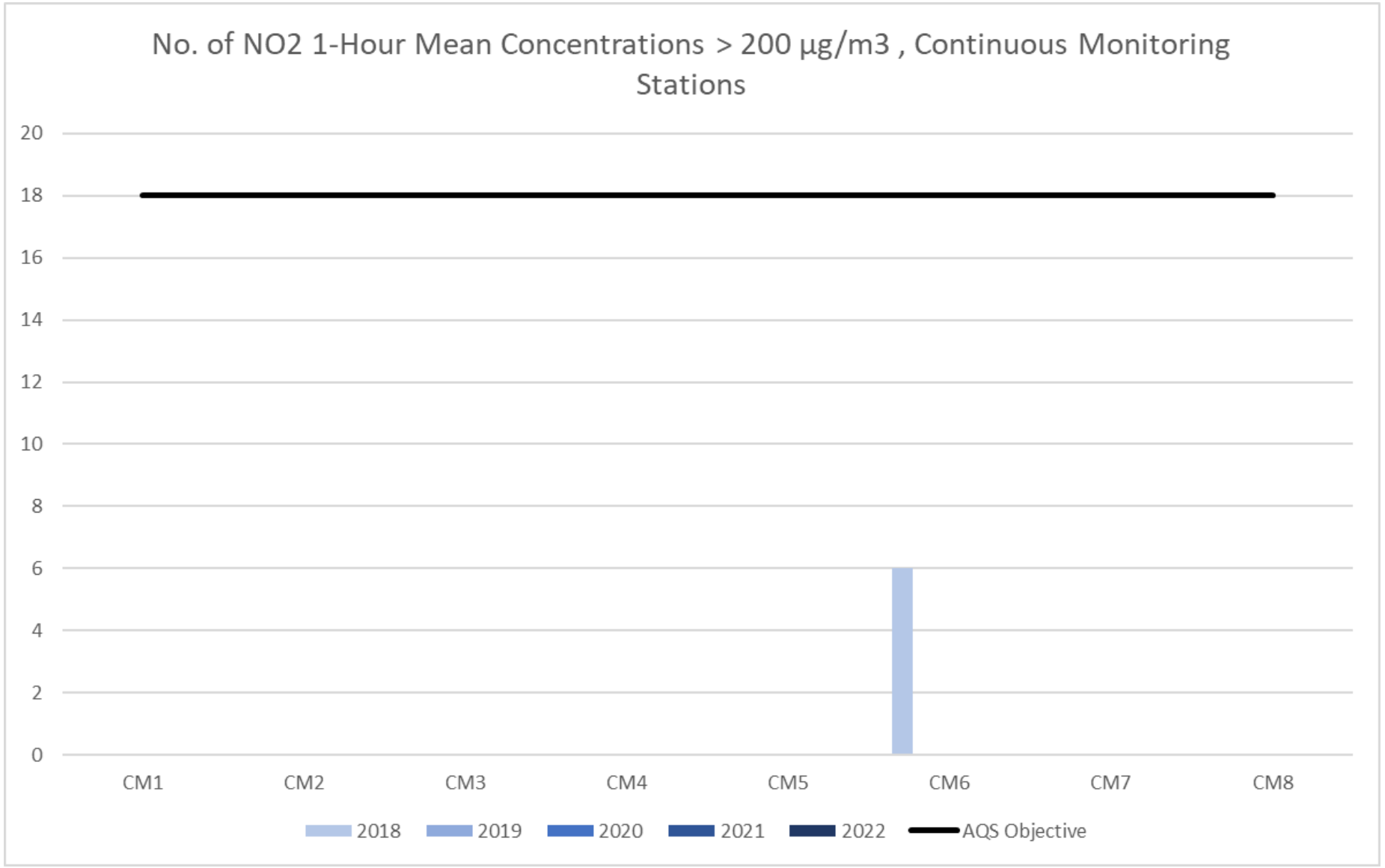


Table A.6 – Annual Mean PM10 Monitoring Results (µg/m^3)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2018	2019	2020	2021	2022
CM1	458027	402475	Roadside	79.26	69.29	18.4	15.3	-	16.6	15.25
CM2	457669	403611	Urban Centre	95.25	95.25	16.7	-	22.1	18.3	18.75
CM5	451438	398528	Roadside	87.41	44.06	21.8	17.4	-	20.3	21.93
CM7	448067	405300	Roadside	86.04	86.04	-	-	-	-	12.59

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

Notes:

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

Exceedances of the PM10 annual mean objective of 40µg/m^3 are shown in **bold**.

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

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

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

Figure A.3 – Trends in Annual Mean PM10 Concentrations

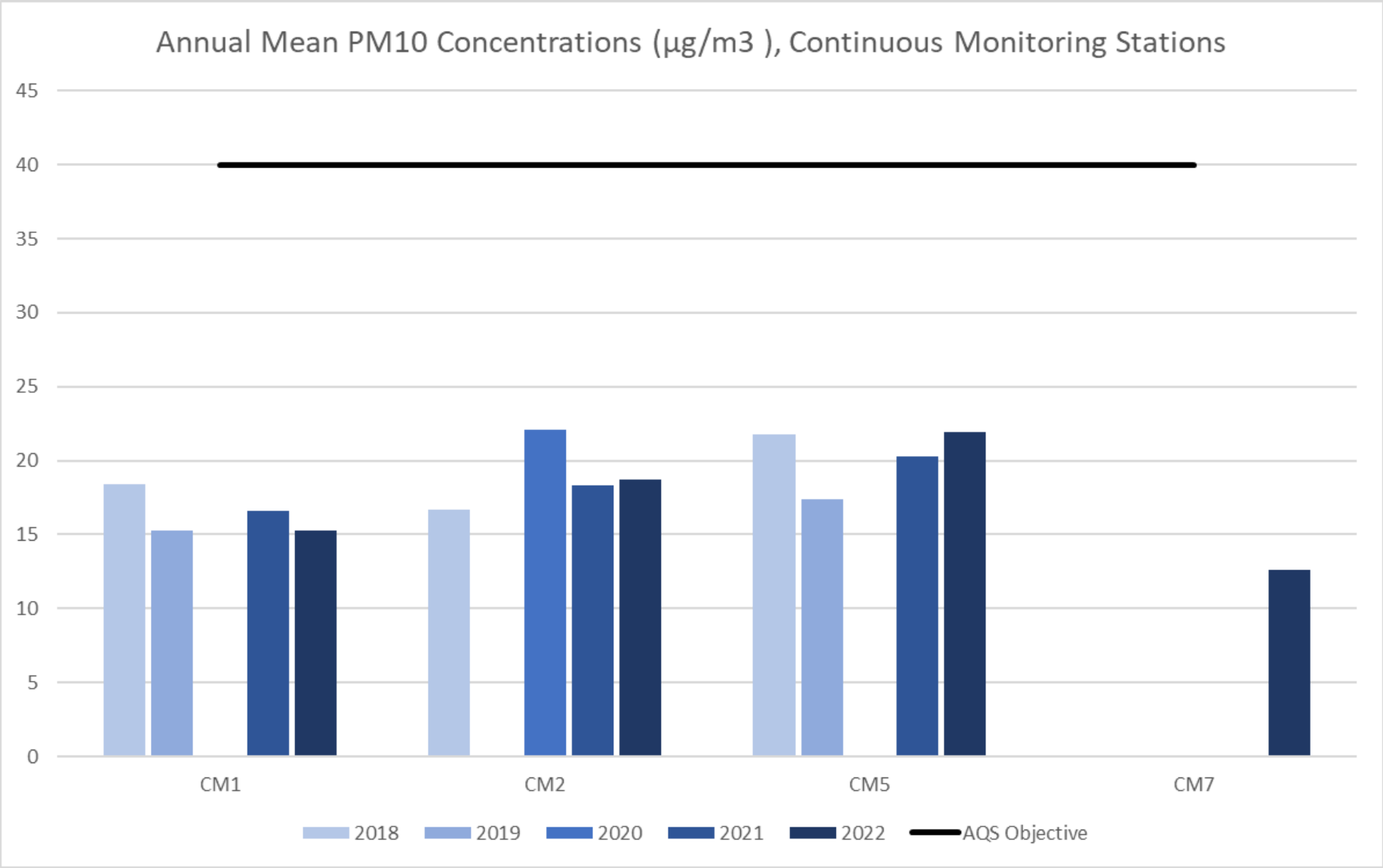


Table A.7 – 24-Hour Mean PM10 Monitoring Results, Number of PM10 24-Hour Means > 50µg/m^3

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2018	2019	2020	2021	2022
CM1	458027	402475	Roadside	79.26	69.29	2	0	-	0 (26)	0 (26)
CM2	457669	403611	Urban Centre	95.25	95.25	2	-	0 (34.5)	1	0
CM5	451438	398528	Roadside	87.41	44.06	3	1	-	0 (34)	6 (39.1)
CM7	448067	405300	Roadside	86.04	86.04	-	-	-	-	2

0

Notes:

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

Exceedances of the PM10 24-hour mean objective (50µg/m^3 not to be exceeded more than 35 times/year) are shown in **bold**.

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

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

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

Figure A.4 – Trends in Number of 24-Hour Mean PM10 Results > 50µg/m^3

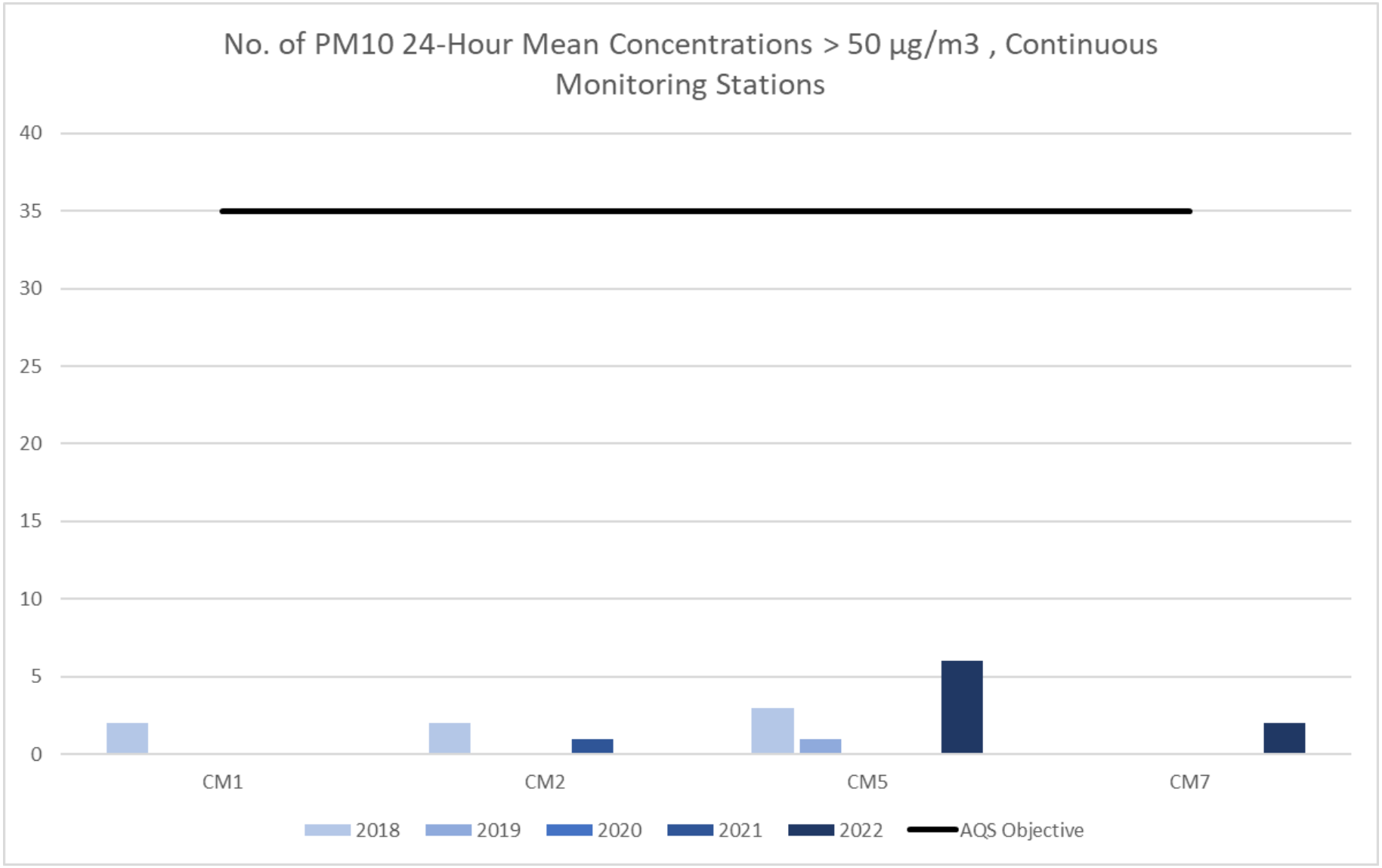


Table A.8 – Annual Mean PM2.5 Monitoring Results (µg/m^3)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2018	2019	2020	2021	2022
CM1	458027	402475	Roadside	72.88	32.85	-	-	-	-	9.8
CM2	457669	403611	Urban Centre	89.73	89.73	-	-	9.2	9.2	8.5
CM5	451438	398528	Roadside	74.95	37.79	-	-	-	-	11
CM7	448067	405300	Roadside	86.05	86.05	-	-	-	-	8.6

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

Notes:

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

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

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

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

Figure A.5 – Trends in Annual Mean PM2.5 Concentrations

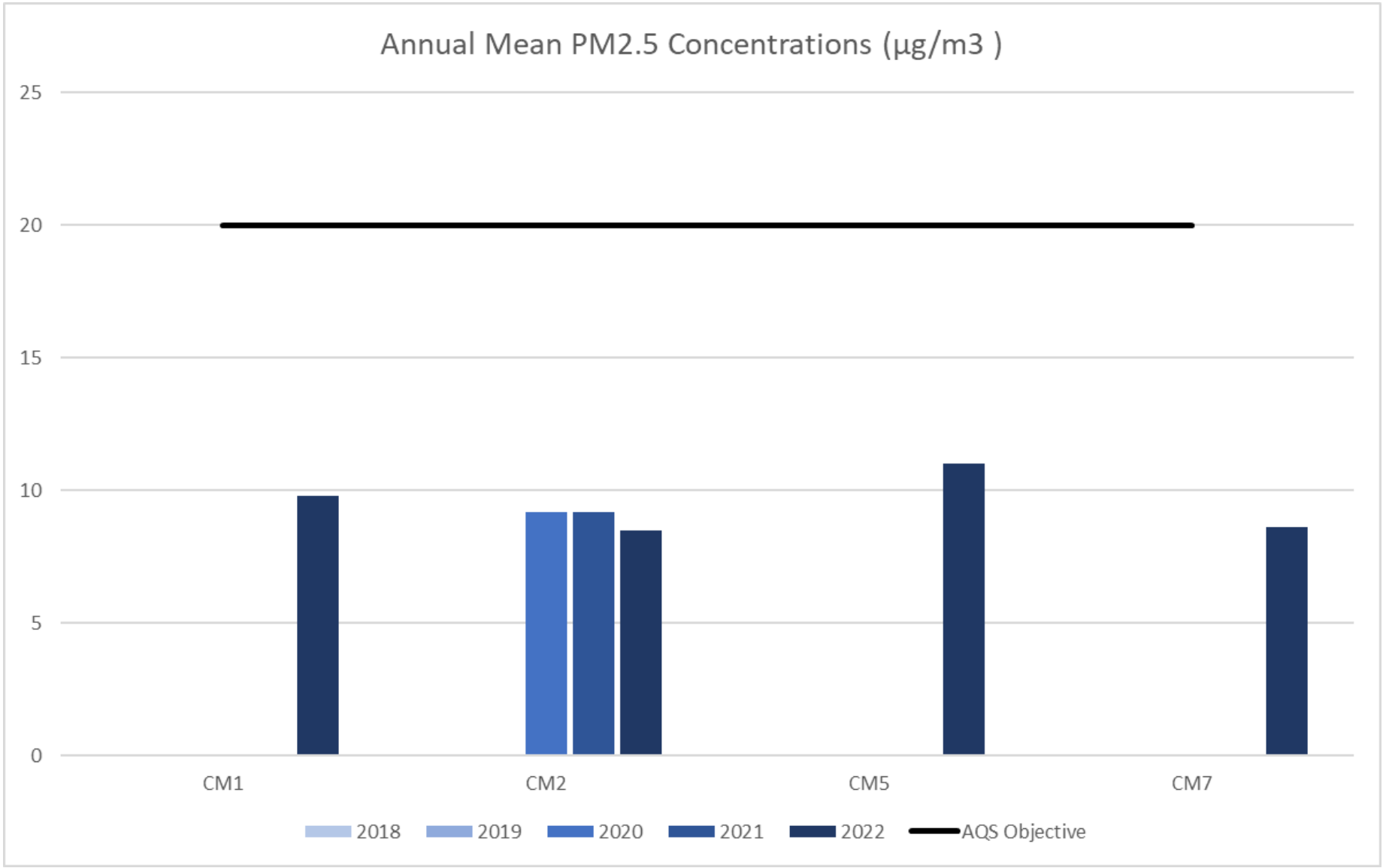


Table A.9 – SO2 2022 Monitoring Results, Number of Relevant Instances

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	Number of 15-minute Means > 266µg/m^3	Number of 1-hour Means > 350µg/m^3	Number of 24-hour Means > 125µg/m^3

Notes:

Results are presented as the number of instances where monitored concentrations are greater than the objective concentration.

Exceedances of the SO2 objectives are shown in **bold** (15-min mean = 35 allowed a year, 1-hour mean = 24 allowed a year, 24-hour mean = 3 allowed a year).

If the period of valid data is less than 85%, the relevant percentiles are 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%).

Appendix B: Full Monthly Diffusion Tube Results for 2022

Table B.1 – NO2 2022 Diffusion Tube Results (µg/m^3)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
DT1	456992	403757	-	-	27.7	-	17.7	17.4	-	20.4	-	-	29.5	26.4	23.1	22.3	-	
DT2	457308	403458	34.7	-	35.6	27.1	25.0	24.8	26.0	26.6	30.0	30.4	38.1	34.2	30.2	30.2	-	
DT3	457957	403152	-	25.7	27.7	19.8	19.1	17.8	20.4	19.7	22.4	24.2	25.9	27.7	22.7	22.7	-	
DT4	457952	403123	46.5	34.7	32.7	26.6	29.1	28.6	30.5	29.6	32.0	31.4	32.3	36.8	32.6	32.6	-	
DT5	459113	402842	47.5	30.7	38.6	31.0	24.7	25.0	28.1	30.1	33.1	34.6	38.5	32.7	33.0	33.0	-	
DT6	459533	402768	38.6	25.7	27.7	20.4	21.7	20.1	17.9	19.0	21.9	22.8	31.2	29.8	24.8	24.8	-	
DT7	462933	399568	44.6	25.7	26.7	20.9	21.1	23.1	21.6	21.4	26.9	25.2	33.6	31.3	26.9	26.9	-	
DT8	462865	399334	30.7	15.8	21.8	18.9	12.2	11.5	15.3	18.0	23.6	15.9	19.1	19.9	18.6	18.6	-	
DT9	463901	398398	26.7	16.8	14.9	14.3	-	15.8	16.8	17.6	20.8	16.5	16.0	20.0	17.9	17.9	-	
DT10	464879	399699	29.7	16.8	17.8	16.9	14.3	14.1	14.6	15.3	17.1	16.4	19.0	21.5	17.9	17.9	-	
DT12	461164	398459	38.6	20.8	22.8	-	16.1	17.3	16.5	20.0	21.9	21.5	25.4	25.4	22.6	22.6	-	
DT13	462242	400134	44.6	31.7	31.7	27.2	20.6	21.2	25.0	25.8	29.6	29.3	34.8	33.0	29.6	29.6	-	
DT14	461362	400777	46.5	31.7	32.7	23.6	27.5	27.0	28.2	26.6	29.6	32.4	36.6	31.2	31.1	31.1	-	
DT15	457577	402732	41.6	27.7	37.6	27.2	-	21.7	27.9	31.1	-	27.5	34.3	37.3	31.6	31.6	-	
DT17	454686	405922	40.6	34.7	37.6	30.3	26.6	27.5	30.6	32.8	36.3	32.2	38.2	37.8	33.7	33.7	-	
DT21	456182	401254	60.4	41.6	43.6	35.1	31.3	31.6	33.9	33.0	35.3	36.8	39.9	34.5	38.0	38.0	29.9	
DT22	455679	401000	58.4	38.6	44.6	31.3	32.3	-	-	-	-	-	30.5	38.2	39.1	33.1	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
DT23	451457	398659	42.6	27.7	30.7	27.0	24.5	24.0	26.6	27.6	31.8	29.9	37.2	32.0	30.2	30.2	-	
DT24	451419	398540	43.6	33.7	35.6	28.6	27.0	26.1	28.9	31.4	29.7	35.0	32.2	33.1	32.1	32.1	-	
DT25	455635	401002	42.6	27.7	39.6	28.9	24.1	20.6	24.8	28.4	29.9	31.0	34.7	31.7	30.4	30.4	-	
DT26	456130	401258	42.6	30.7	34.7	23.9	22.1	21.3	23.2	23.8	25.4	29.1	34.2	30.4	28.4	28.4	-	
DT27	457010	402060	49.5	34.7	32.7	29.2	27.7	25.5	28.2	-	28.8	28.3	30.1	-	31.5	31.5	-	
DT28	457022	402136	54.5	35.6	42.6	43.4	37.4	35.5	42.0	41.5	43.2	42.1	-	-	42.0	**42.0**	**41.5**	
DT29	464986	399697	21.8	10.9	15.8	10.8	-	-	9.0	-	21.8	10.4	13.2	25.8	15.7	15.7	-	
DT30	465719	400140	19.8	10.9	16.8	14.0	-	9.7	10.2	12.9	15.1	13.9	15.6	16.2	14.3	14.3	-	
DT31	466895	400405	18.8	13.9	13.9	9.0	-	8.7	9.1	10.7	11.6	13.8	16.2	17.1	13.1	13.1	-	
DT32	467174	400372	27.7	19.8	21.8	20.1	-	19.0	19.2	22.1	24.4	21.0	22.7	16.9	21.3	21.3	-	
DT33	468620	404175	15.8	8.9	8.9	-	-	5.0	5.8	7.8	7.8	-	10.5	11.0	9.3	9.3	-	
DT34	467755	408643	28.7	15.8	18.8	12.3	-	9.8	10.7	13.3	13.8	15.0	17.8	20.7	16.3	16.3	-	
DT35	469056	407623	20.8	12.9	9.9	7.5	-	-	5.9	8.5	7.7	8.1	9.8	12.3	10.4	10.4	-	
DT36	457615	403630	36.6	29.7	37.6	27.4	24.1	26.1	23.6	27.5	30.9	27.1	-	33.0	29.4	29.4	-	
DT37	457379	403460	40.6	31.7	42.6	31.4	26.7	28.2	29.3	31.6	33.3	35.5	38.5	38.1	34.0	34.0	-	
DT38	464046	411818	20.8	13.9	19.8	10.9	9.1	8.8	9.6	11.4	11.5	12.2	14.6	18.8	13.5	13.5	-	
DT39	452219	410224	33.7	26.7	27.7	23.5	24.6	28.9	27.4	25.6	29.0	25.9	28.5	31.5	27.7	27.7	-	
DT40	452195	410302	34.7	26.7	32.7	26.1	26.6	27.7	27.8	26.9	32.5	24.7	30.9	32.2	29.1	29.1	-	
DT41	452180	410377	36.6	36.6	35.6	26.1	27.8	29.4	29.1	29.5	32.5	27.8	36.9	36.1	31.8	31.8	-	
DT42	452180	410404	33.7	35.6	30.7	25.5	24.6	27.9	28.4	27.6	30.0	28.6	33.4	33.8	29.8	29.8	-	
DT43	452195	410389	36.6	27.7	29.7	19.3	21.5	23.3	24.2	23.7	24.4	25.3	26.8	28.3	25.8	25.8	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
DT44	448230	405305	58.4	54.5	57.4	48.3	49.1	51.3	52.6	51.2	48.5	52.2	52.1	49.9	52.0	**52.0**	39.9	
DT45	447966	405303	21.8	14.9	21.8	12.1	10.2	10.9	11.2	13.2	12.8	15.6	19.1	20.1	15.3	15.3	-	
DT46	448148	405297	27.7	21.8	40.6	26.7	23.2	20.3	21.5	27.6	26.6	23.5	25.0	25.5	25.8	25.8	-	
DT47	448058	405319	63.4	-	62.4	47.2	-	-	52.4	54.3	50.7	50.4	52.5	55.1	54.2	**54.2**	**51.4**	
DT48	448235	405321	56.4	-	78.2	57.4	67.1	62.4	56.9	65.6	60.5	58.5	54.8	56.0	61.1	**61.1**	**57.8**	
DT49	451331	405223	32.7	30.7	31.7	24.5	26.5	24.2	25.8	28.2	26.7	28.4	27.6	30.5	28.1	28.1	-	
DT50	468749	413300	37.6	27.7	36.6	24.8	24.3	24.6	28.0	28.7	31.3	30.8	35.6	37.0	30.6	30.6	-	
DT51	451445	398574	37.6	20.8	30.7	18.9	20.1	19.1	20.9	18.6	20.6	28.9	31.1	29.9	25.0	25.0	-	
DT52	451485	398511	38.6	35.6	41.6	28.2	30.4	34.0	31.0	34.8	35.4	32.3	31.5	35.1	33.9	33.9	-	
DT53	451452	398645	38.6	27.7	38.6	29.5	24.7	25.0	27.1	30.4	32.8	30.5	34.6	36.1	31.4	31.4	-	
DT54	451442	398647	45.5	42.6	44.6	30.4	-	34.4	33.2	35.0	36.6	31.2	37.5	41.2	37.3	37.3	36.4	
DT55	451626	398691	34.7	25.7	26.7	17.8	18.7	19.9	20.6	20.8	21.3	25.0	28.0	25.9	23.7	23.7	-	
DT56	448042	399884	-	-	-	-	-	-	-	-	-	-	27.8	31.0	-	-	-	
DT57	448005	399860	44.6	30.7	32.7	24.6	23.4	20.1	-	28.7	28.4	24.7	28.7	32.9	29.0	29.0	-	
DT58	451683	405225	31.7	25.7	42.6	30.8	28.1	28.6	30.0	32.1	29.9	27.0	28.8	32.2	30.6	30.6	-	
DT59	451514	405246	-	-	-	10.1	-	-	10.7	11.4	11.4	13.1	15.4	17.1	12.8	13.1	-	
DT60	457870	403839	35.6	26.7	21.8	25.7	21.9	22.2	22.4	25.1	28.9	25.1	25.6	31.0	26.1	26.1	-	
DT61	457791	403767	40.6	34.7	22.8	22.9	21.9	21.6	20.5	22.9	24.4	26.0	29.2	29.0	26.3	26.3	-	
DT62	457733	403740	45.5	41.6	25.7	26.2	26.8	29.0	28.3	28.8	32.2	32.9	-	37.3	32.2	32.2	-	
DT63	457701	403579	42.6	31.7	46.5	-	-	-	-	-	-	32.2	37.0	40.5	38.6	28.5	-	
DT64	457345	403433	44.6	-	35.6	30.1	29.0	26.0	28.2	30.1	30.3	31.4	37.7	37.6	32.9	32.9	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
DT65	457995	402506	45.5	37.6	-	22.6	23.2	24.9	23.1	25.2	26.3	33.2	33.9	35.0	30.1	30.1	-	
DT66	458142	402563	48.5	31.7	27.7	27.0	27.7	27.1	27.4	29.5	34.2	30.0	32.7	32.6	31.4	31.4	-	
DT67	458259	402582	35.6	32.7	19.8	21.0	20.2	21.4	22.3	24.3	25.8	28.3	25.8	29.6	25.5	25.5	-	
DT68	462520	400757	29.7	18.8	17.8	13.0	10.8	10.6	11.8	13.3	15.4	16.3	18.7	20.7	16.5	16.5	-	
DT69	462500	400708	29.7	20.8	16.8	14.1	11.9	12.2	13.4	15.1	16.6	19.0	19.2	18.9	17.3	17.3	-	
DT70	457669	403611	34.7	27.7	30.7	20.8	18.6	17.7	19.2	21.1	25.1	25.0	28.7	31.1	-	-	-	Triplicate Site with DT70, DT71 and DT72 - Annual data provided for DT72 only
DT71	457669	403611	36.6	26.7	33.7	22.6	18.1	17.9	18.8	20.1	25.0	25.1	26.6	28.7	-	-	-	Triplicate Site with DT70, DT71 and DT72 - Annual data provided for DT72 only
DT72	457669	403611	35.6	23.8	32.7	19.3	18.6	16.4	19.1	19.8	23.4	23.4	28.8	31.7	24.8	24.8	-	Triplicate Site with DT70, DT71 and DT72 - Annual data provided for DT72 only
DT73	448067	405300	21.8	15.8	21.8	13.7	11.8	10.4	10.8	12.6	13.8	13.8	15.9	17.5	-	-	-	Triplicate Site with DT73, DT74 and DT75 - Annual data provided for DT75 only
DT74	448067	405300	20.8	15.8	17.8	13.8	12.2	10.7	11.4	12.6	14.6	15.4	16.5	18.4	-	-	-	Triplicate Site with DT73, DT74 and DT75 - Annual data provided for DT75 only
DT75	448067	405300	18.8	16.8	12.9	12.7	11.8	10.6	11.4	13.2	14.2	14.4	15.8	19.3	14.8	14.8	-	Triplicate Site with DT73, DT74 and DT75 - Annual data provided for DT75 only

☒ **All erroneous data has been removed from the NO_2 diffusion tube dataset presented in Table B.1.**

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

☐ **Local bias adjustment factor used.**

☒ **National bias adjustment factor used.**

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

☒ **Doncaster Council confirm that all 2022 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.**

Notes:

Exceedances of the NO2 annual mean objective of 40µg/m^3 are shown in **bold**.

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO2 1-hour mean objective are shown in **bold and underlined**.

See Appendix C for details on bias adjustment and annualisation.

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

New or Changed Sources Identified Within Doncaster Council During 2022

Doncaster Council has not identified any new sources relating to air quality within the reporting year of 2022. All Planning Applications in Doncaster can be viewed using the online portal.

Additional Air Quality Works Undertaken by Doncaster Council During 2022

Doncaster Council have commissioned Ricardo Energy and Environment to complete both a Vehicle Emission report and a Further Assessment report (modelling) in order to gain a better understanding of the NO2 concentrations in AQMA 7 and aid in the identification of further measures for the new AQAP.

The Ricardo reports will be made publicly available on the Council's website once they have been approved for release.

QA/QC of Diffusion Tube Monitoring

Nitrogen dioxide diffusion tubes for January – March were analysed by South Yorkshire Air Quality Samplers. This laboratory uses the analytical technique of the grid adsorbent being 50% triethanolamine (TEA) in acetone. Reagents used in the analysis are sulphanilamide and NEDA. The analytical technique used is spectrometry, at a wavelength of 540 nanometres.

Nitrogen dioxide diffusion tubes for April – December were analysed by Gradko International. This laboratory uses the analytical technique of the grid adsorbent being 50% triethanolamine (TEA) in acetone. The analytical technique used is spectrometry

Gradko participated in the WASP / AIR PT scheme for nitrogen dioxide. Laboratory performance during 2022 were based only on two rounds AR049 (January – February

2022) and AR050 (May – June 2022) of the AIR PT annual performance criteria for NO2 diffusion tubes used in Local Air Quality Management. These were the only results available at the time of writing this report. For these AIR PT rounds, the results of the measurements based up a satisfactory z-score of < +/- 2 were 100%.

Changing of tubes adhered to the 2022 Diffusion Tube Monitoring Calendar with the exception of February 2022 where certain tubes were changed 4 days after the recommended change over (07/02/2022). This meant the exposure period 02/02/2022 – 02/03/2022 was 4 days shorter.

Diffusion Tube Annualisation

Annualisation is required for any site with data capture less than 75% but greater than 25%. Our Doncaster Council 2022 diffusion tube data have been annualised where required using Defra's Diffusion Tube Data Processing Tool v3.0, following guidance within Chapter 7 of LAQM.TG22: NOx and NO2 Monitoring.

The four background continuous monitoring sites within the region used to calculate the annualisation factors were Barnsley Gawber, Dewsbury Ashworth Grove, Leeds Centre and York Bootham. Annualised data are presented in Table C.2 below. The diffusion tubes sites requiring annualisation of 2022 data are DT1, DT22, DT59 and DT63.

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

Site ID	Annualisation Factor Barnsley Gawber	Annualisation Factor Dewsbury Ashworth Grove	Annualisation Factor Leeds Centre	Annualisation Factor York Bootham	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
DT1	0.9275	0.9316	0.9784	1.0172	0.9637	23.1	22.3
DT22	0.8829	0.7466	0.8978	0.8598	0.8468	39.1	33.1
DT59	0.9773	1.0750	1.0152	1.0199	1.0219	12.8	13.1
DT63	0.7941	0.6232	0.7886	0.7549	0.7402	38.6	28.5

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2022 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG22 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NOx/NO2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

City of Doncaster Council have applied a Local bias adjustment factor of 0.99 to the January – March 2022 monitoring data. These tubes were provided by SYAQS. This bias adjustment factor has been provided by Sheffield City Council as no automatic monitoring data was available in Doncaster for the sites of the co-location diffusion tubes during the time of exposure.

City of Doncaster Council have applied a national bias adjustment factor of 0.82 to the April – December 2022 monitoring data. These tubes were supplied by Gradko. A summary of bias adjustment factors used by City of Doncaster Council over the past five years is presented in Table C.2.

The local bias adjustment factors were created using co-located diffusion tubes at CM2 and CM7 for the period April – December 2022. The local bias adjustment factor for CM2 was 0.82 and as such is in line with the national bias adjustment factor for the Gradko supplied tubes. The local bias adjustment factor for CM7 was 0.98 and therefore this was not aligned with the CM2 value. As CM2 was in line with the national bias adjustment factor it was decided that the national bias adjustment factor should be used as not only is it representative of the local factor at CM2 it is also derived from a greater sample size of results.

Table C.2 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2022	National	03/23	0.82
2021	Local	-	0.95

2020	Local	-	0.92
2019	Local	-	0.97
2018	Local	-	1.1

Table C.3 – Local Bias Adjustment Calculation

	Local Bias Adjustment CM2	Local Bias Adjustment CM7	Local Bias Adjustment Input 3	Local Bias Adjustment Input 4	Local Bias Adjustment Input 5
Periods used to calculate bias	9	8	-	-	-
Bias Factor A	0.82 (0.76 – 0.9)	0.98 (0.8-1.24)	-	-	-
Bias Factor B	21% (12% - 31%)	2% (-19% - 24%)	-	-	-
Diffusion Tube Mean (µg/m^3)	27	16	-	-	-
Mean CV (Precision)	4%	3	-	-	-
Automatic Mean (µg/m^3)	22	16	-	-	-
Data Capture	99%	91%	-	-	-
Adjusted Tube Mean (µg/m^3)	22 (21 – 24)	16 (13-20)	-	-	-

Notes:

Despite creation of local bias adjustment factors the national bias adjustment factor has been used.

CM2

Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tubes Measurements

Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 µgm^{-3}	Tube 2 µgm^{-3}	Tube 3 µgm^{-3}	Triplicate Mean	Standard Deviation	Coefficient of Variation (CV)	95% CI of mean	Automatic Method: Period Mean	Automatic Method: Data Capture (% DC)	Data Quality Check: Tubes Precision Check	Data Quality Check: Automatic Monitor Data
1	05/01/2022	02/02/2022	35.0	37.0	36.0	36	1.0	3	2.5			Good	
2	02/02/2022	02/03/2022	28.0	27.0	24.0	26	2.1	8	5.2			Good	
3	02/03/2022	30/03/2022	31.0	34.0	33.0	33	1.5	5	3.8	33.1	94.3	Good	Good
4	30/03/2022	04/05/2022	25.4	27.5	23.5	25	2.0	8	5.0	24	99.7	Good	Good
5	04/05/2022	08/06/2022	22.7	22.1	22.6	22	0.3	1	0.8	18	99.9	Good	Good
6	08/06/2022	06/07/2022	21.6	21.9	20.0	21	1.0	5	2.5	17	99.4	Good	Good
7	06/07/2022	03/08/2022	23.4	22.9	23.3	23	0.3	1	0.6	18	100	Good	Good
8	03/08/2022	31/08/2022	25.7	24.6	24.2	25	0.8	3	2.0	20	99.6	Good	Good
9	31/08/2022	28/09/2022	30.7	30.5	28.5	30	1.2	4	2.9	23	99.7	Good	Good
10	28/09/2022	02/11/2022	30.5	30.6	28.5	30	1.2	4	2.9	21	99.3	Good	Good
11	02/11/2022	30/11/2022	35.0	32.4	35.2	34	1.5	4	3.8	26.4	98.8	Good	Good
12	30/11/2022	04/01/2023	38.0	34.9	38.6	37	2.0	5	4.9			Good	
13													
										Overall survey -->		Good precision	Good Overall

It is necessary to have results for at least two tubes in order to calculate the precision of the measurements

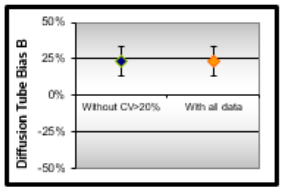
(Check average CV & DC from Accuracy calculations)

Site Name/ ID: Market Place

Precision 12 out of 12 periods have a CV smaller than 20%

Accuracy (with 95% confidence interval) without periods with CV larger than 20%
Bias calculated using 9 periods of data
Bias factor A 0.82 (0.76 - 0.9)
Bias B 21% (12% - 31%)
Diffusion Tubes Mean: 27 µgm^{-3}
Mean CV (Precision): 4
Automatic Mean: 22 µgm^{-3}
Data Capture for periods used: 99%
Adjusted Tubes Mean: 22 (21 - 24) µgm^{-3}

Accuracy (with 95% confidence interval) WITH ALL DATA
Bias calculated using 9 periods of data
Bias factor A 0.82 (0.76 - 0.9)
Bias B 21% (12% - 31%)
Diffusion Tubes Mean: 27 µgm^{-3}
Mean CV (Precision): 4
Automatic Mean: 22 µgm^{-3}
Data Capture for periods used: 99%
Adjusted Tubes Mean: 22 (21 - 24) µgm^{-3}



Jaume Targa, for AEA
Version 04 - February 2011

If you have any enquiries about this spreadsheet please contact the LAQM Helpdesk at: LAQMHelpdesk@uk.bureauveritas.com

CM7

Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tubes Measurements

Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 µgm^{-3}	Tube 2 µgm^{-3}	Tube 3 µgm^{-3}	Triplicate Mean	Standard Deviation	Coefficient of Variation (CV)	95% CI of mean	Automatic Method: Period Mean	Automatic Method: Data Capture (% DC)	Data Quality Check: Tubes Precision Check	Data Quality Check: Automatic Monitor Data
1	05/01/2022	02/02/2022	22.0	21.0	19.0	21	1.5	7	3.8			Good	
2	02/02/2022	02/03/2022	16.0	16.0	17.0	16	0.6	4	1.4			Good	
3	02/03/2022	30/03/2022	22.0	18.0	13.0	18	4.5	26	11.2			Poor Precision	
4	30/03/2022	05/05/2022	16.8	16.9	15.5	16	0.8	5	2.0	28	94.21	Good	Good
5	05/05/2022	08/06/2022	14.4	14.8	14.4	15	0.2	2	0.6	16	97.19	Good	Good
6	08/06/2022	06/07/2022	12.6	13.0	12.9	13	0.2	2	0.5	11	91.95	Good	Good
7	06/07/2022	03/08/2022	13.1	14.0	13.9	14	0.5	3	1.1	10	93.9	Good	Good
8	03/08/2022	31/08/2022	15.4	15.4	16.1	16	0.4	3	1.1	12	79.64	Good	Good
9	31/08/2022	28/09/2022	16.9	17.8	17.3	17	0.5	3	1.2	13	89.87	Good	Good
10	28/09/2022	02/11/2022	16.9	18.8	17.5	18	1.0	6	2.5	17	82.28	Good	Good
11	02/11/2022	30/11/2022	19.4	20.1	19.3	20	0.5	2	1.2	17.08	97.47	Good	Good
12	30/11/2022	04/01/2023	21.4	22.5	23.5	22	1.1	5	2.6			Good	
13													
										Overall survey -->		Good precision	Good Overall

It is necessary to have results for at least two tubes in order to calculate the precision of the measurements

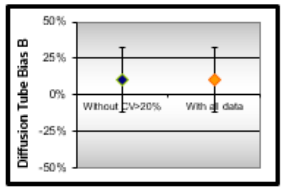
(Check average CV & DC from Accuracy calculations)

Site Name/ ID: Hickleton

Precision 11 out of 12 periods have a CV smaller than 20%

Accuracy (with 95% confidence interval) without periods with CV larger than 20%
Bias calculated using 8 periods of data
Bias factor A 0.98 (0.8 - 1.24)
Bias B 2% (-19% - 24%)
Diffusion Tubes Mean: 16 µgm^{-3}
Mean CV (Precision): 3
Automatic Mean: 16 µgm^{-3}
Data Capture for periods used: 91%
Adjusted Tubes Mean: 16 (13 - 20) µgm^{-3}

Accuracy (with 95% confidence interval) WITH ALL DATA
Bias calculated using 8 periods of data
Bias factor A 0.98 (0.8 - 1.24)
Bias B 2% (-19% - 24%)
Diffusion Tubes Mean: 16 µgm^{-3}
Mean CV (Precision): 3
Automatic Mean: 16 µgm^{-3}
Data Capture for periods used: 91%
Adjusted Tubes Mean: 16 (13 - 20) µgm^{-3}



Jaume Targa, for AEA
Version 04 - February 2011

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NO2 Fall-off with Distance from the Road

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

Subsequently, following use of the Diffusion Tube Data Processing Tool, our distance corrected data are found within Table C.4. Please note, the distance correction has only been applied for our monitoring sites where the roadside / kerbside annual mean concentration is greater than 36 µg/m^3 and the sites are not located at a point of relevant exposure (taking the limitations of the calculator into account).

Table C.4 – NO2 Fall off With Distance Calculations (concentrations presented in µg/m^3)

Site ID	Distance (m): Monitoring Site to Kerb	Distance (m): Receptor to Kerb	Monitored Concentration (Annualised and Bias Adjusted	Background Concentration	Concentration Predicted at Receptor	Comments
DT21	1.5	7.5	38.0	15.0	29.9	
DT28	3.7	4.0	42.0	15.9	**41.5**	*Predicted concentration at Receptor above AQS objective.*
DT44	1.0	4.0	52.0	8.7	*39.9*	*Predicted concentration at Receptor within 10% the AQS objective.*
DT47	0.8	1.1	54.2	8.671259	**51.4**	*Predicted concentration at Receptor above AQS objective.*

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
DT48	0.8	1.1	61.1	8.671259	**57.8**	*Predicted concentration at Receptor above AQS objective.*
DT54	1.8	2.1	37.3	11.4	*36.4*	*Predicted concentration at Receptor within 10% the AQS objective.*

QA/QC of Automatic Monitoring

The QA/QC automatic monitoring procedures usually consists of bi-monthly calibrations performed manually on-site by the Local Site Operator (City of Doncaster Council). Daily data checks were carried out remotely by City of Doncaster Council staff in order to identify any early issues with analyser performance and communications.

An outside contractor performs six-monthly services and all units are covered by a service and maintenance agreement including call-out services.

Independent audits were carried out in February 2021 and 2022 by National Physical Laboratory. No audit has been carried out yet in 2023 due to staff change over, however an audit will be arranged to be undertaken as soon as possible.

Data from 2022 were subsequently scaled, validated and ratified by WeCare4Air, including the removal of erroneous data and applying relevant calculations in line with the technical guidance LAQM TG(22) to obtain the final data set. As part of the ratification process.

PM10 and PM2.5 Monitoring Adjustment

The type of PM10/PM2.5 monitors utilised by City of Doncaster Council do not require the application of a correction factor.

Automatic Monitoring Annualisation

Data capture for our BAM at CM1 and CM5 began monitoring in July and so the valid capture during 2022 (calendar year) for CM1 was 69.29%; data capture for this period was 79.26% and for CM5 was 44.06%; data capture for this period was 87.41%(CM5). As,

annualisation is required for any site with data capture less than 75% but greater than 25%, these data were therefore annualised in accordance with Box 7.9 (Annualising Continuous Monitoring Data) and the annualisation data presented below in Table C.1A and C1B.

Table C.1A – Annualisation Summary (concentrations presented in µg/m^3, PM_{10} continuous data)

Site ID	Annualisation Factor Leeds Centre	Annualisation Factor York Bootham	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
CM1	1.089	1.069	1.089	14	15.25
CM5	1.133	1.092	1.113	19.7	21.93

Table C.1B – Annualisation Summary (concentrations presented in µg/m^3, $PM_{2.5}$ continuous data)

Site ID	Annualisation Factor Leeds Centre	Annualisation Factor York Bootham	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
CM1	1.091	1.140	1.116	8.82	9.84
CM5	1.137	1.178	1.158	9.50	11

NO2 Fall-off with Distance from the Road

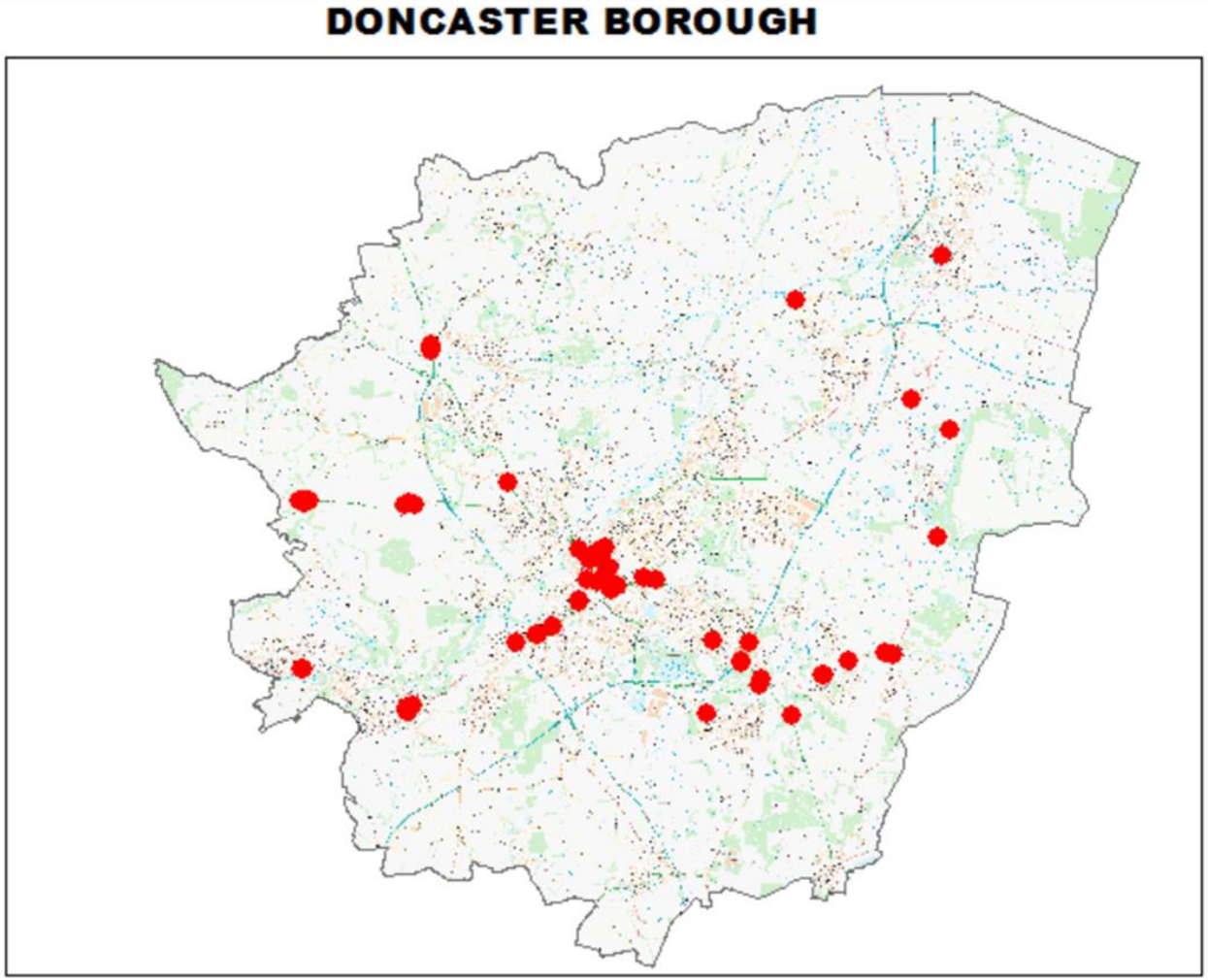
Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO2 concentration at the nearest location relevant for exposure has been estimated using the NO2 fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO_2 concentrations corrected for distance are presented in Table B.1.

Table C.4 details our diffusion tube data where distance correction has been applied (LAQM NO_2 fall-off with distance calculator). This correction has only been applied for those annual mean concentrations greater than 36 µg/m^3 and the monitoring site is not located at a point of relevant exposure (taking the limitations of the calculator into account). Specifically, this applied to DTs 21, 28, 44, 47, 48 and 54 in 2022. For our 2022 background concentration contribution to the correction, we have used the relevant

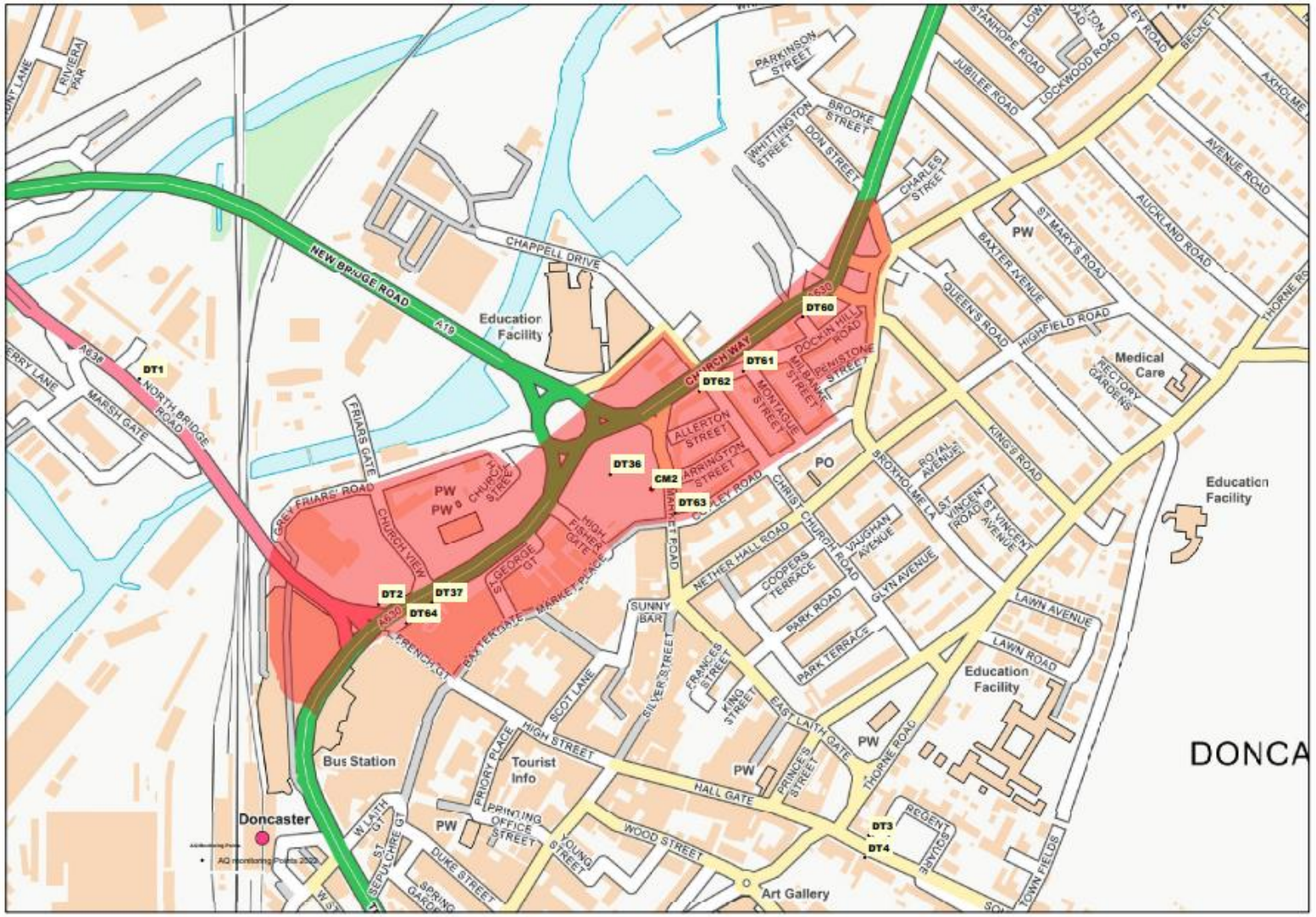
background concentration taken from Defra 1 km2 NO2 maps, estimated background for 2022 (base year 2018).

Appendix D: Maps of Monitoring Locations and AQMAs

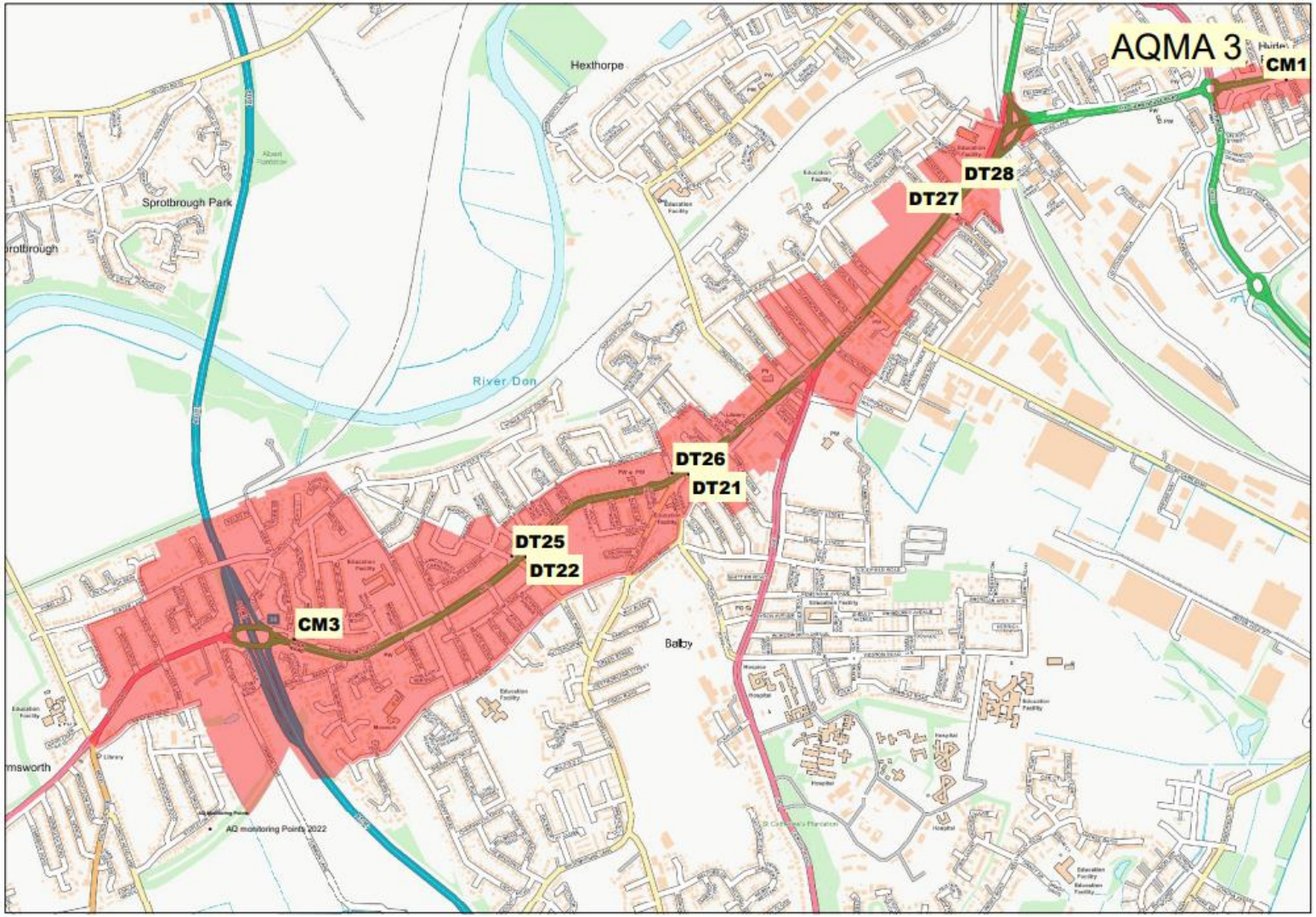
Map of Non-Automatic Monitoring Site



Map of AQMA 1 – Market, City Centre



Map of AQMA 2 Balby Road, Balby



N

Key

Mon Point	Location
CM3	A1/A630 Grosvenor Terrace, Warmsworth
DT21	A630, Balby, Hall Flat Junction
DT22	A630, Warmsworth, nr Warde Ave.
DT25	A630, Warmsworth, junc. Waverley Ave.
DT26	A630 High Road, Balby, junc. Oswin Ave.
DT27	A630 Balby Rd, Hexthorpe, junc. Belmont Ave.
DT28	A630 Balby Rd, Hexthorpe, nr junc. Mansfield Rd

Title :

AQMA 2

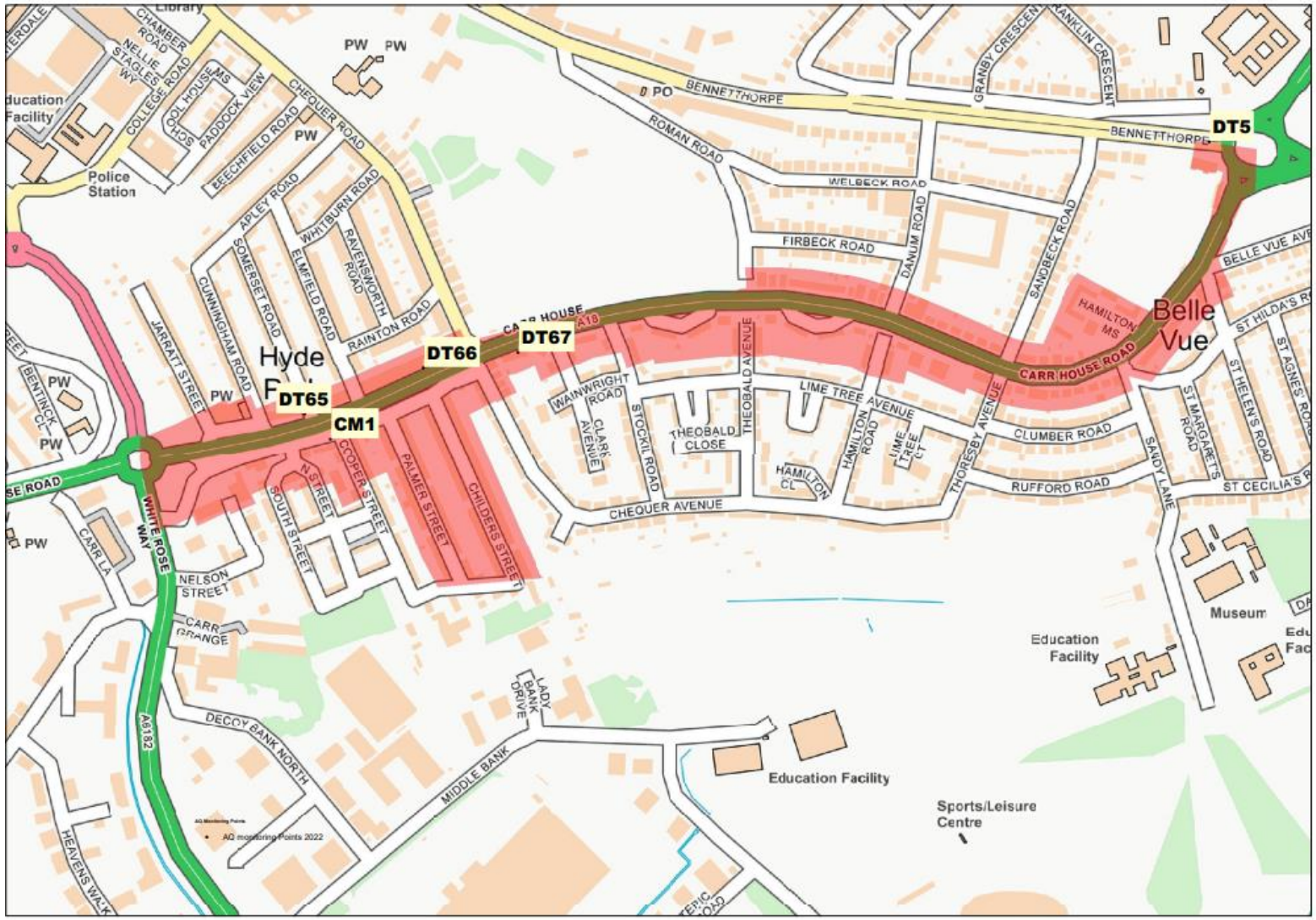
Completed by:
GeraldineP

Reference :
AQ REPORT MAP_MAY 2022

Date :
06/07/2022

Scale :
1:4,313

Map of AQMA 3 Carr House Road, near City Centre



N

Key

Mon Point	Location
CM1	A18 Carr House Road, Doncaster
DT5	Bennethorpe Rd adj. A18 Carr House Rd
DT65	Somerset Road, adj A18 Carr House Road
DT66	A18 Carr House Road
DT67	A18 Carr House Road

Title : AQMA 3

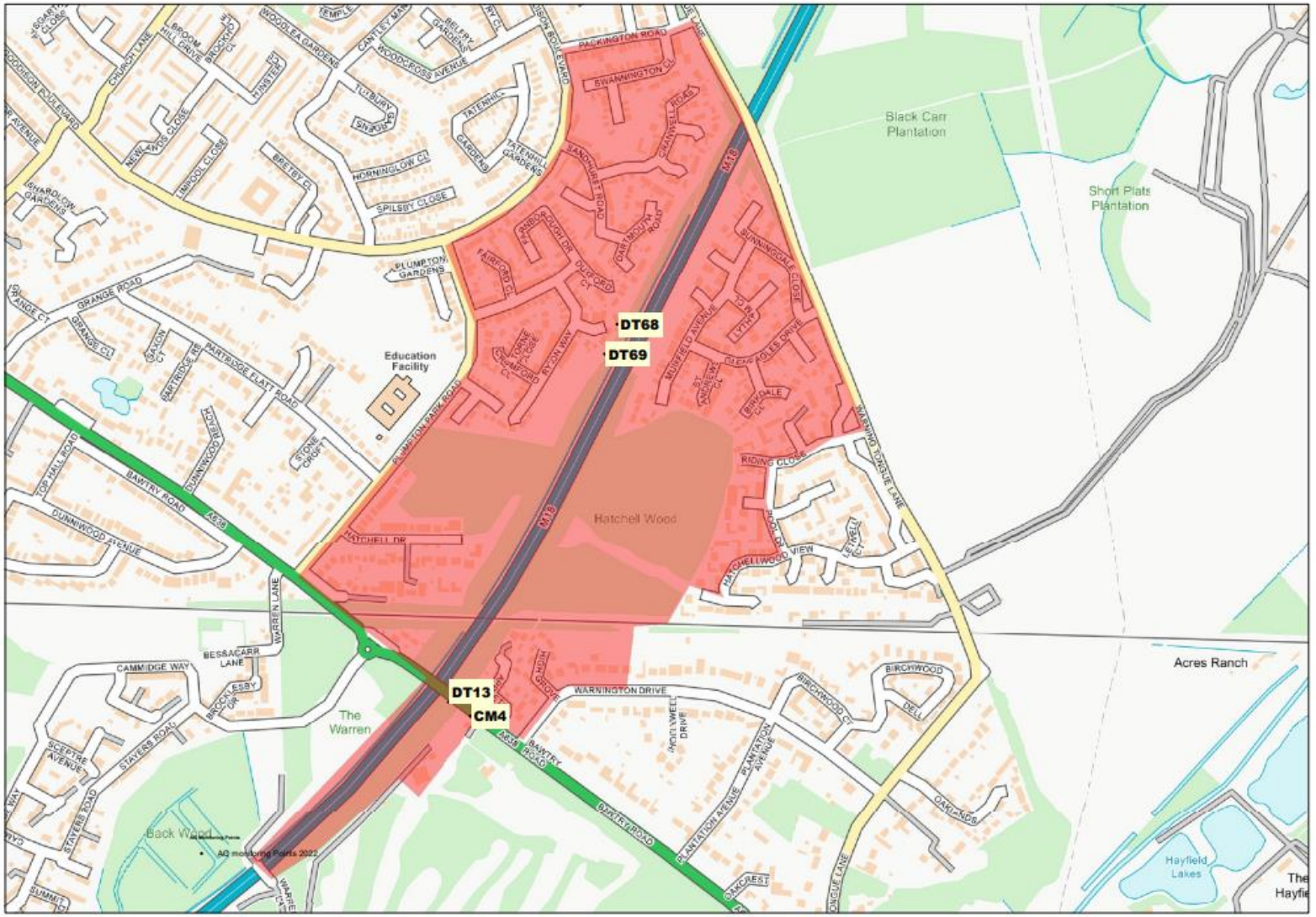
Completed by: GeraldineP

Reference : AQ REPORT MAP_MAY 2022

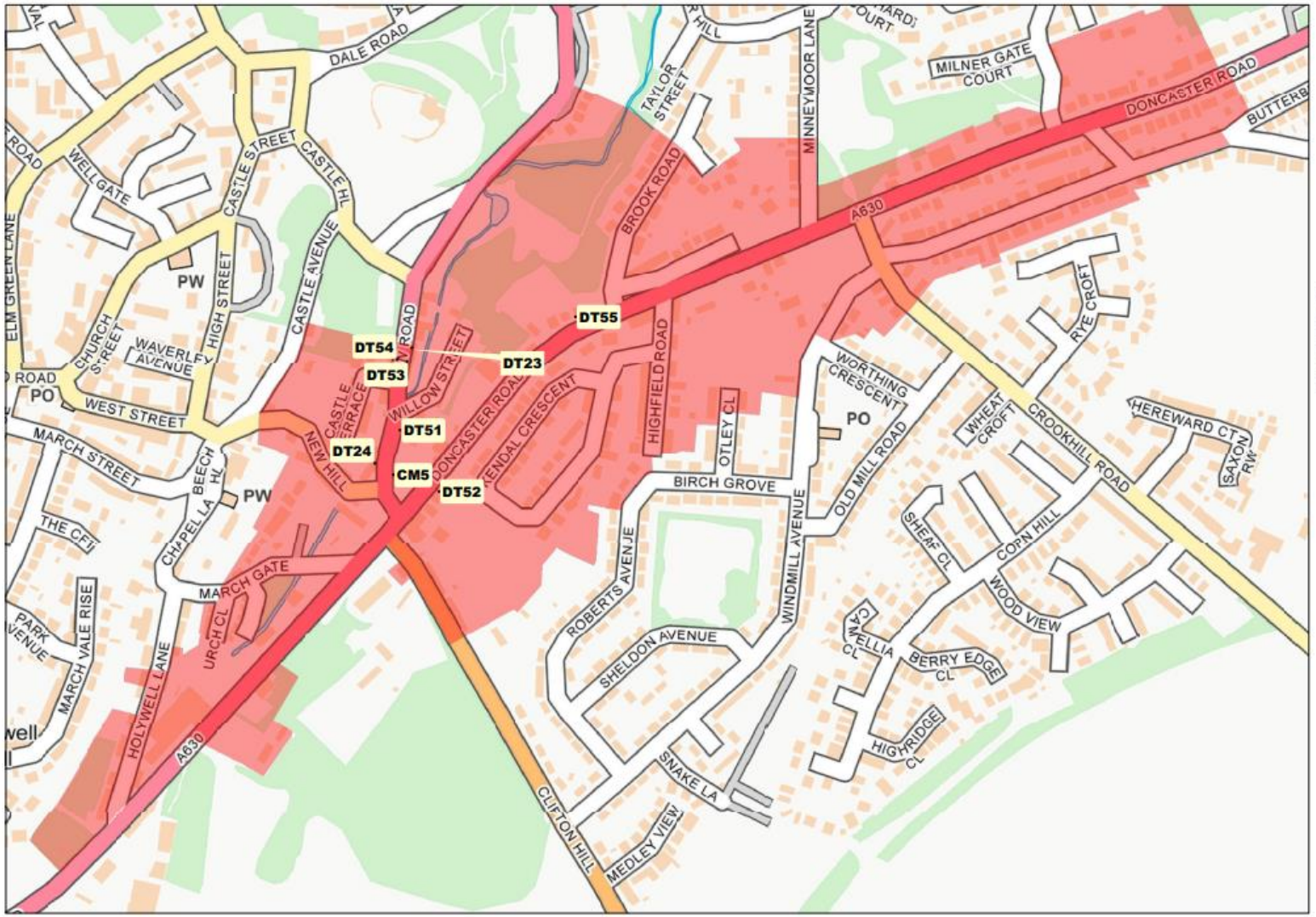
Date : 06/07/2022

Scale : 1:1,725

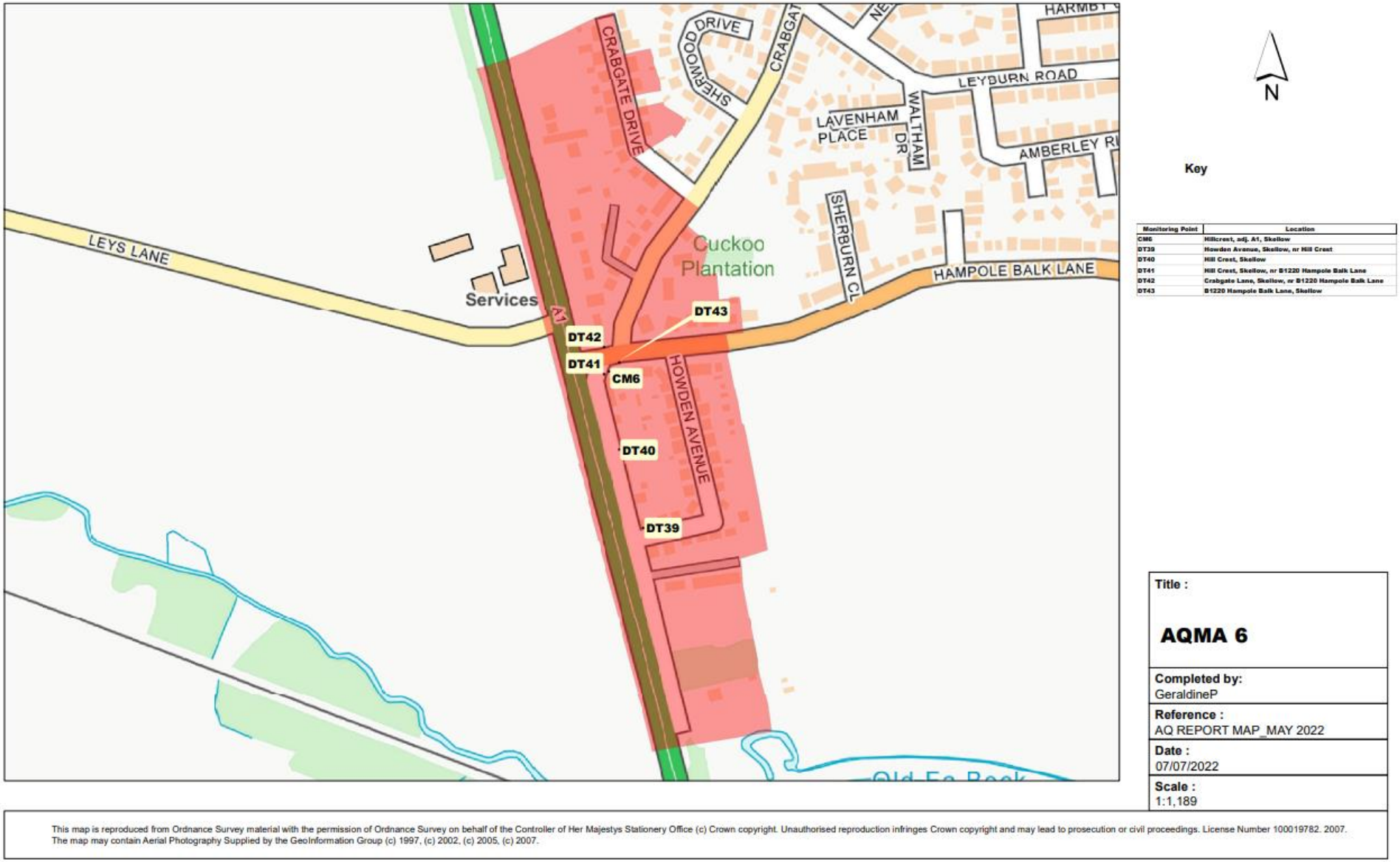
Map of AQMA 4 Bawtry Road, Bessacarr



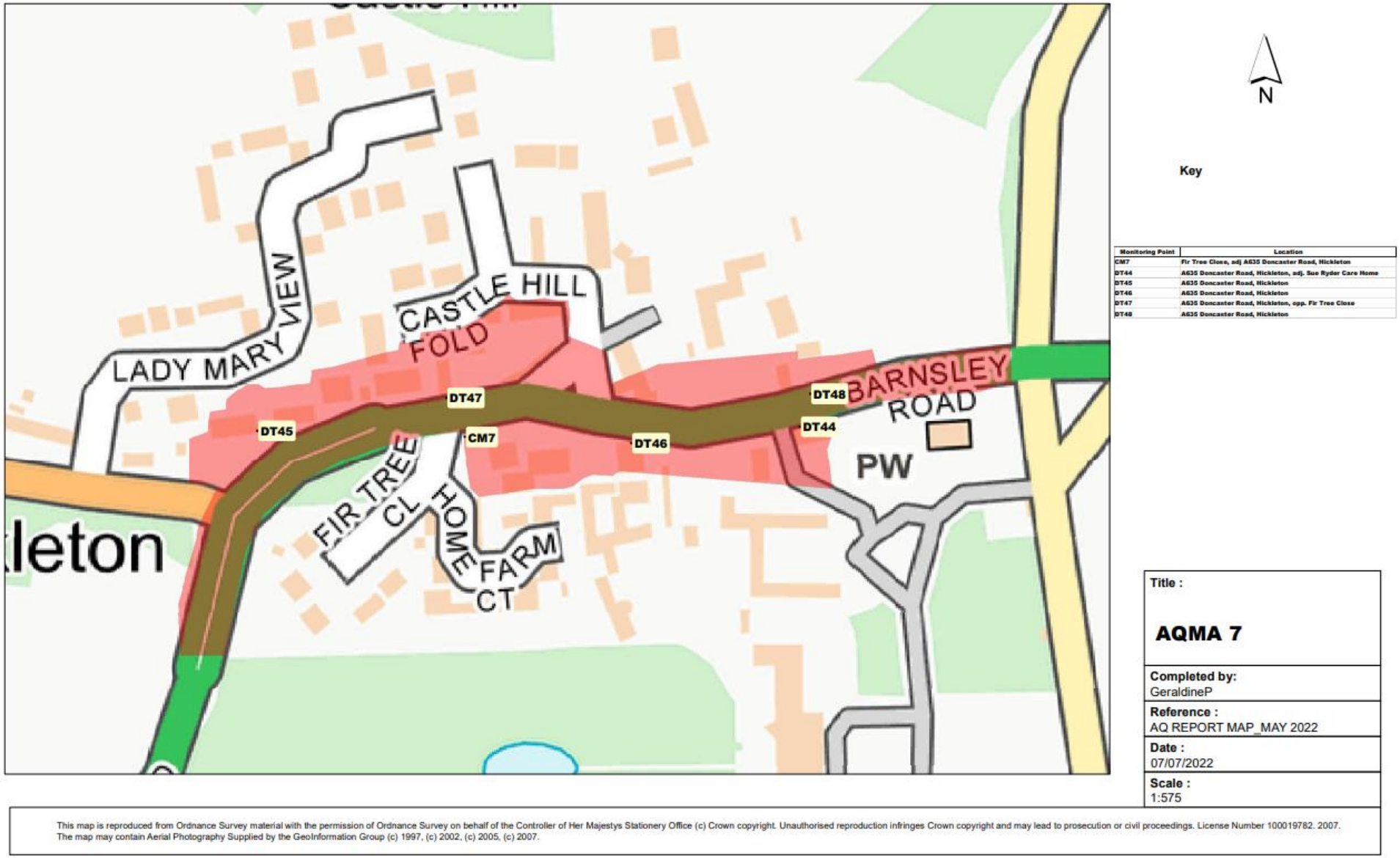
Map of AQMA 5, Conisbrough



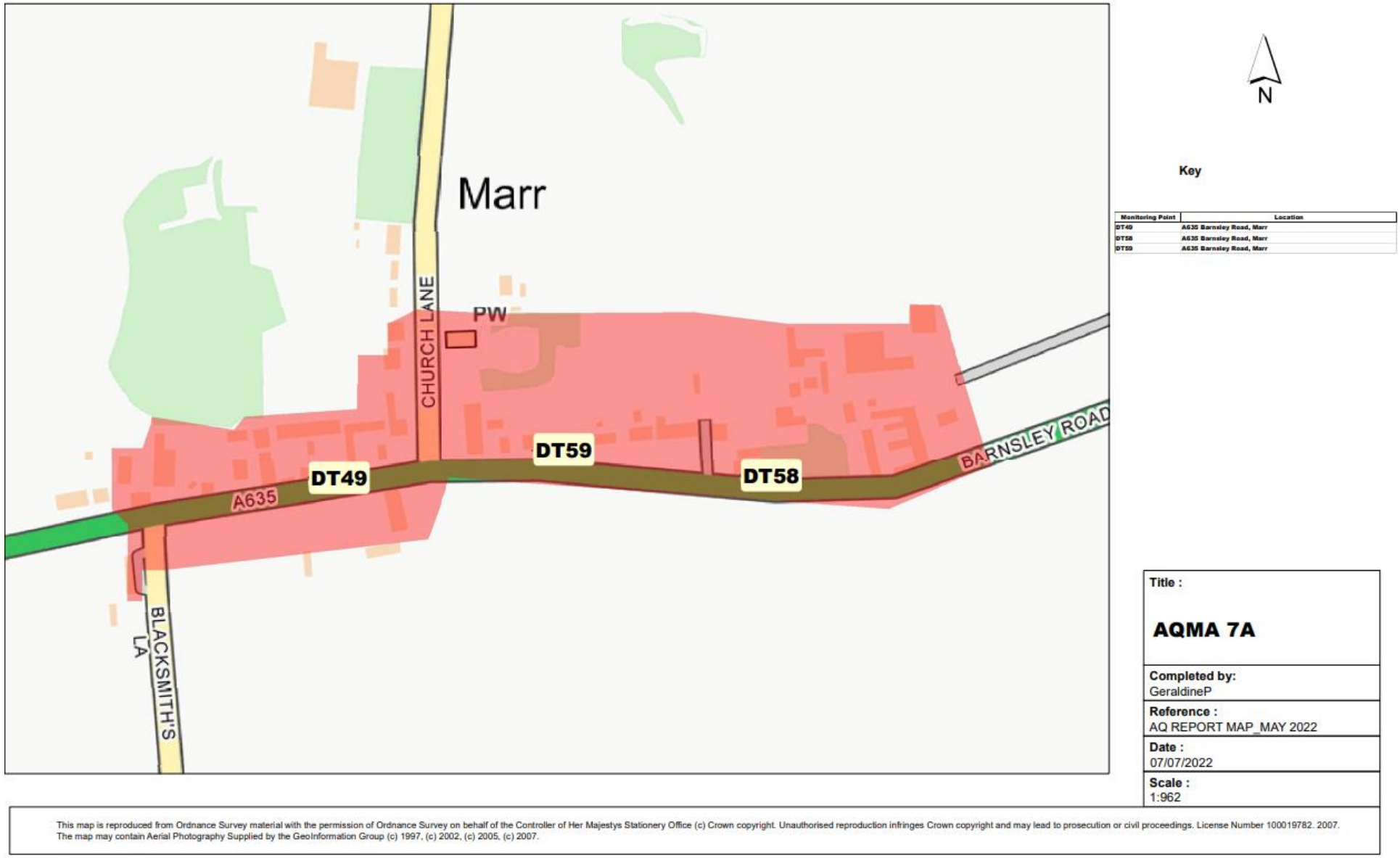
Map of AQMA 6, Skellow



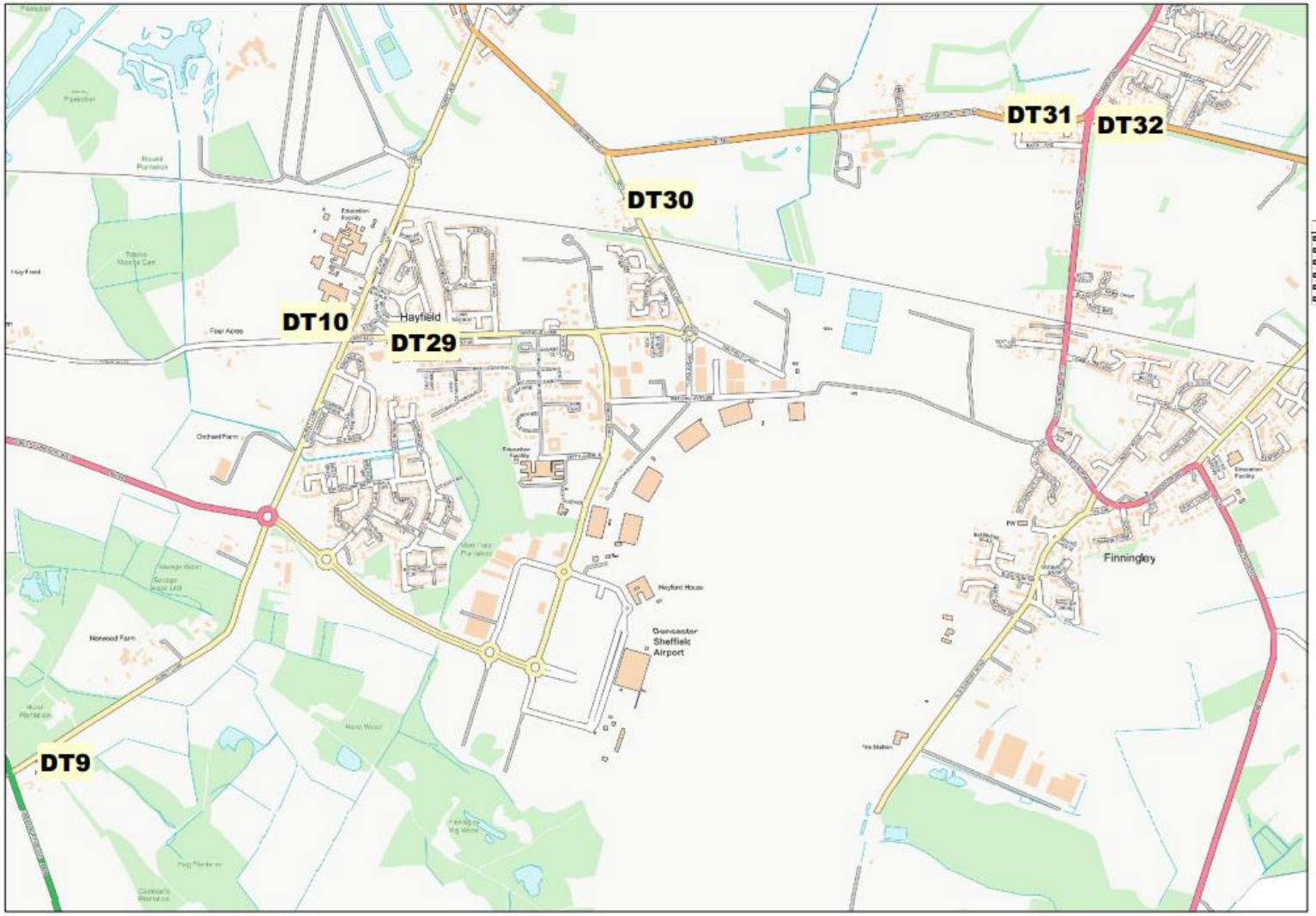
Map of AQMA 7, Hickleton



Map of AQMA 7A, Marr



Map of Diffusion Tubes located near Doncaster Sheffield Airport

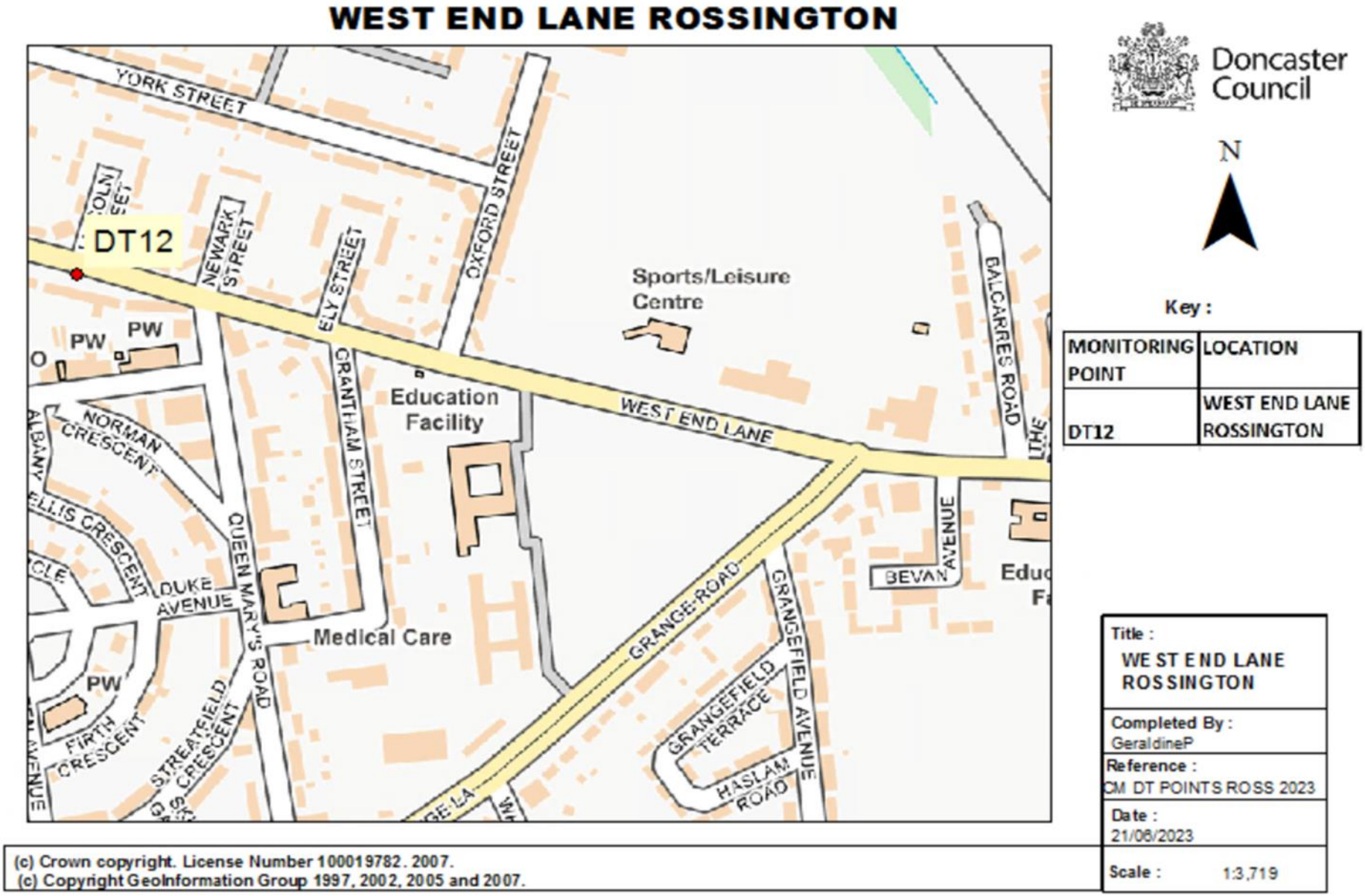


Key

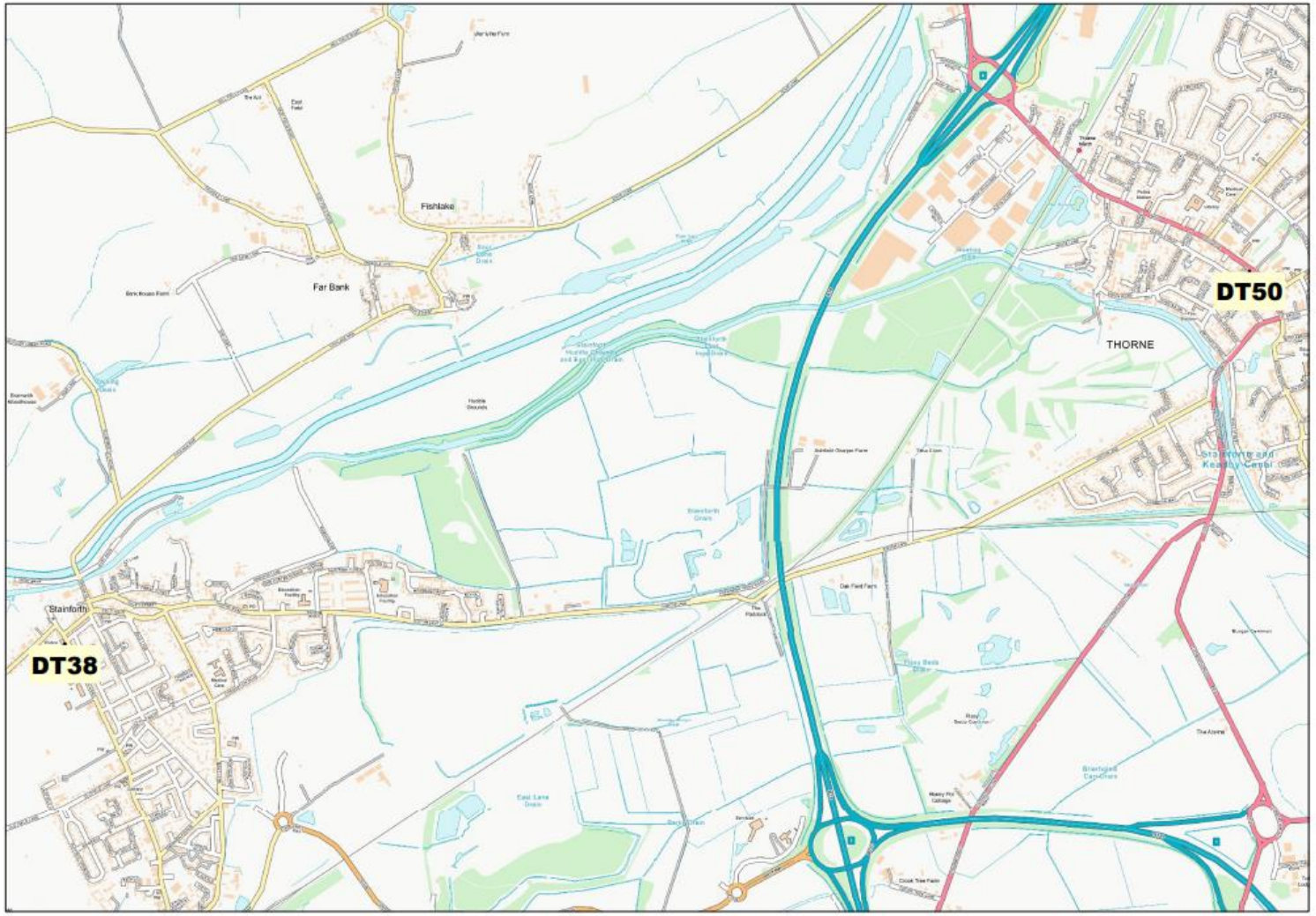
Monitoring Point	Location
DT9	Hurst Lane nr junc. A638 Bawtry Rd
DT10	Hayfield Lane, Auckley, nr Hurst Lane
DT29	Hayfield Lane, Auckley
DT30	Gate House Lane, Auckley
DT31	B1396 Mosham Road, Blaxton
DT32	A614 Station Road, Blaxton

Title :	**AIRPORT**
Completed by:	GeraldineP
Reference :	AQ REPORT MAP_MAY 2022
Date :	07/07/2022
Scale :	1:4,313

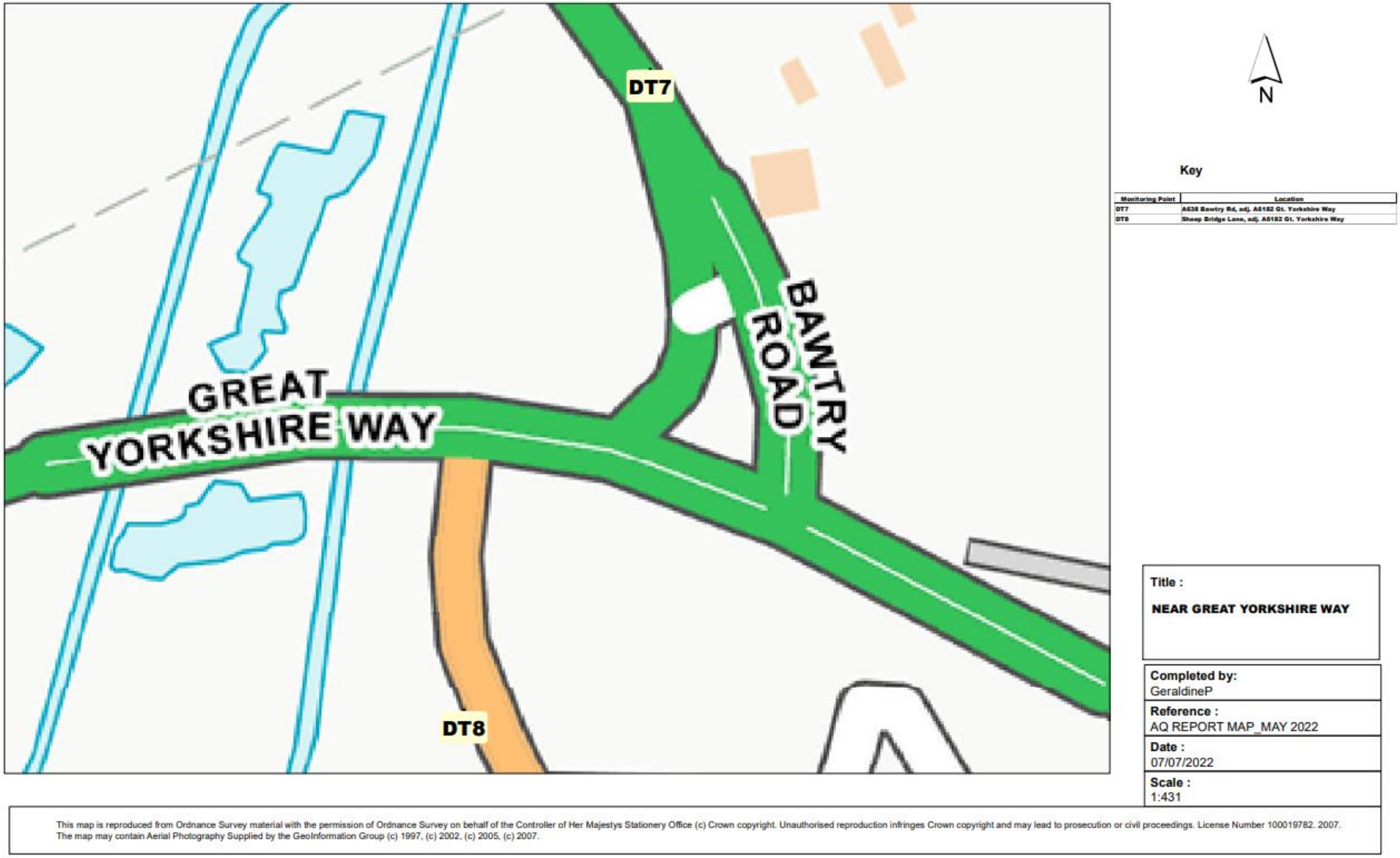
Map of Diffusion Tubes in Rossington



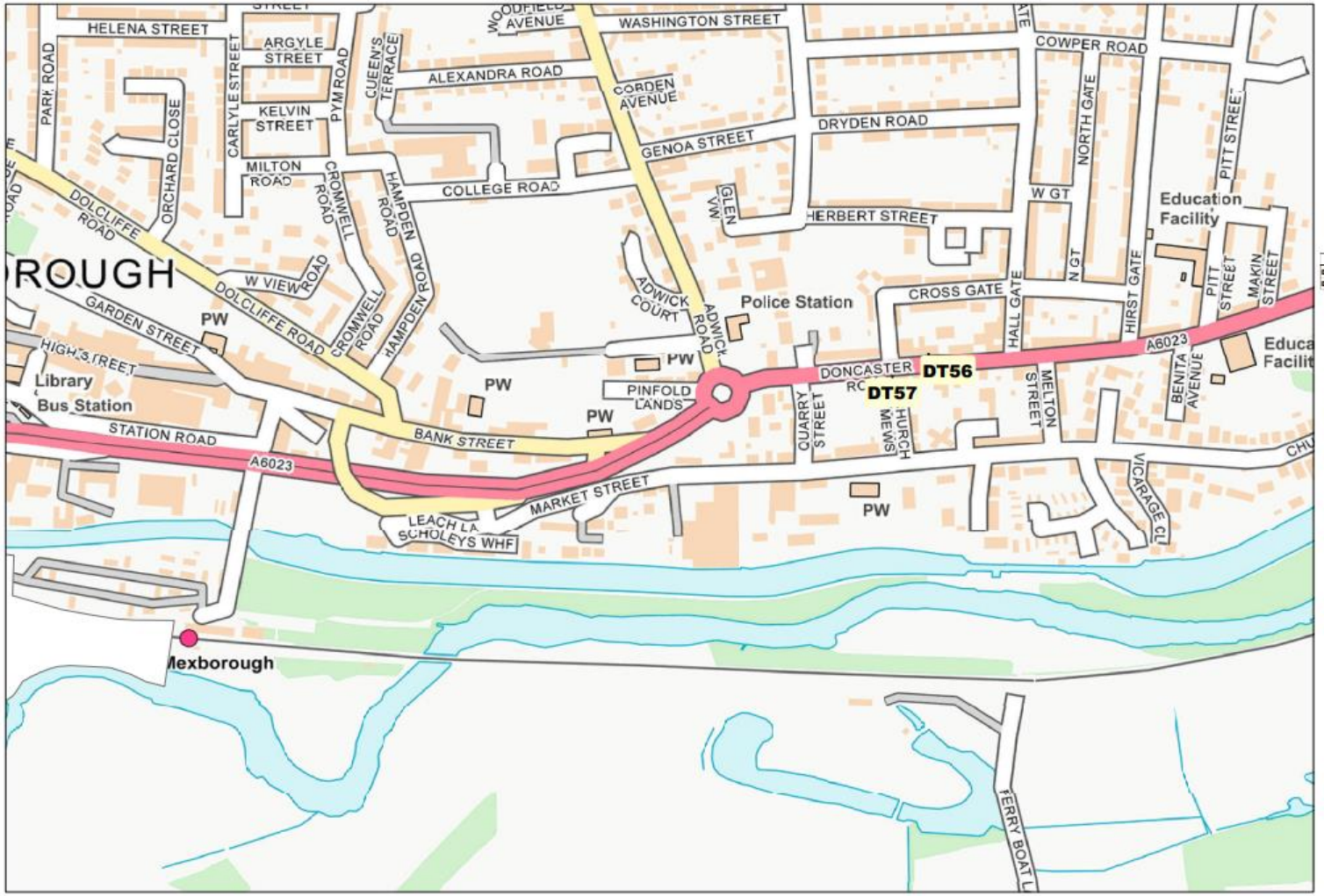
Map of Diffusion Tubes located in Stainforth and Thorne



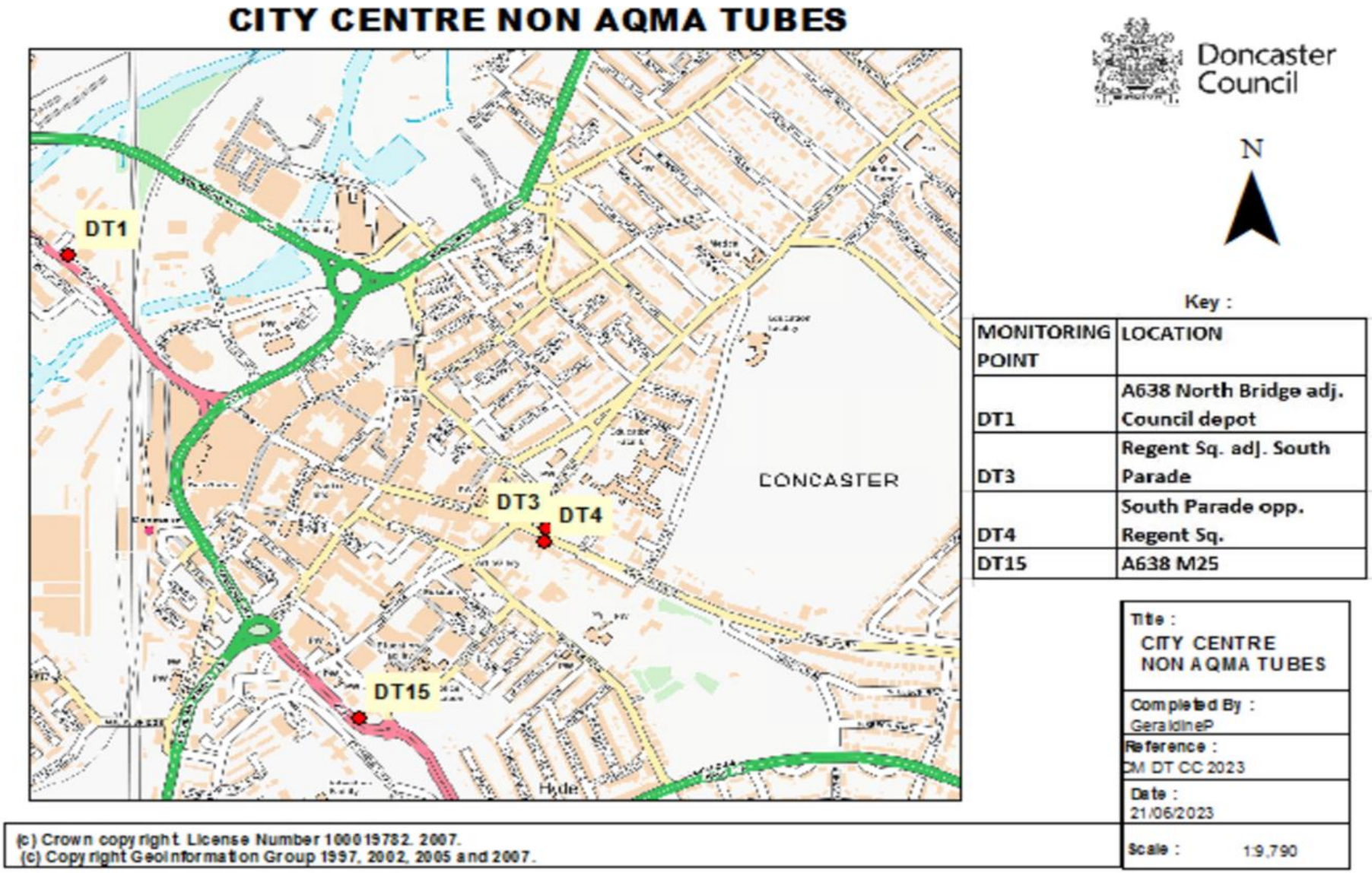
Map of Diffusion Tubes located near Great Yorkshire Way



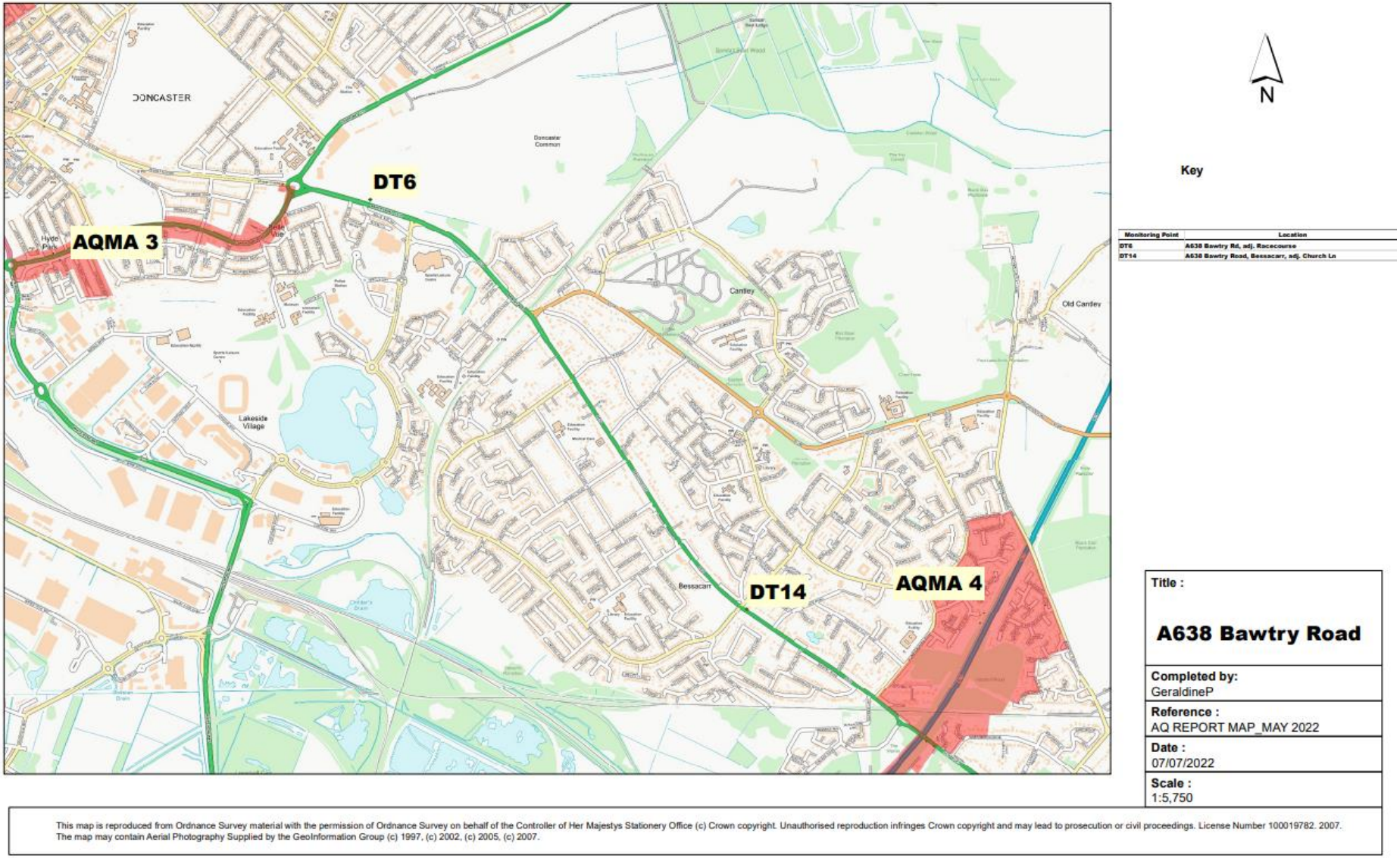
Map of Diffusion Tubes located in Mexborough



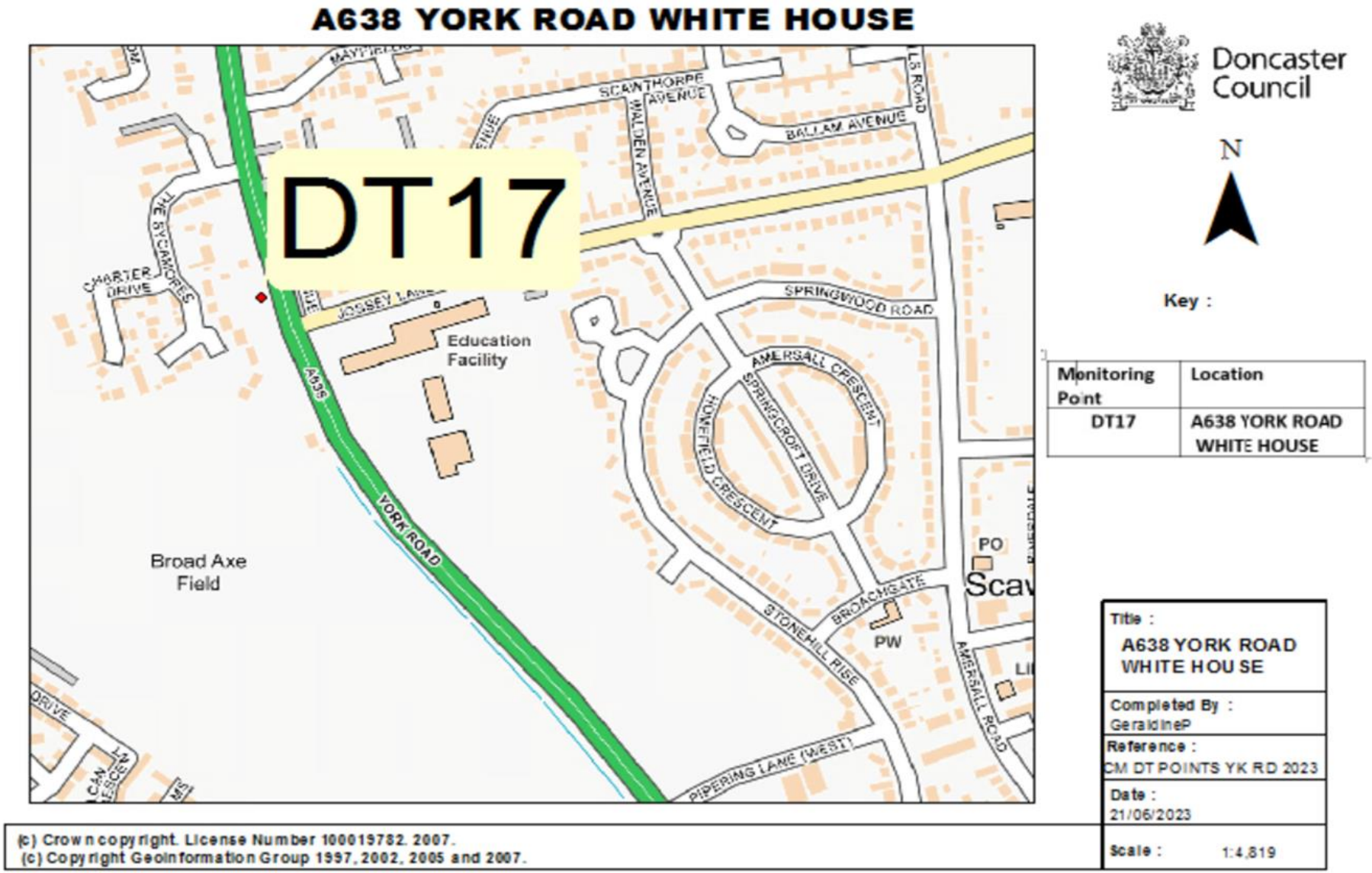
Map of Diffusion Tubes located Along City Centre Non AQMA



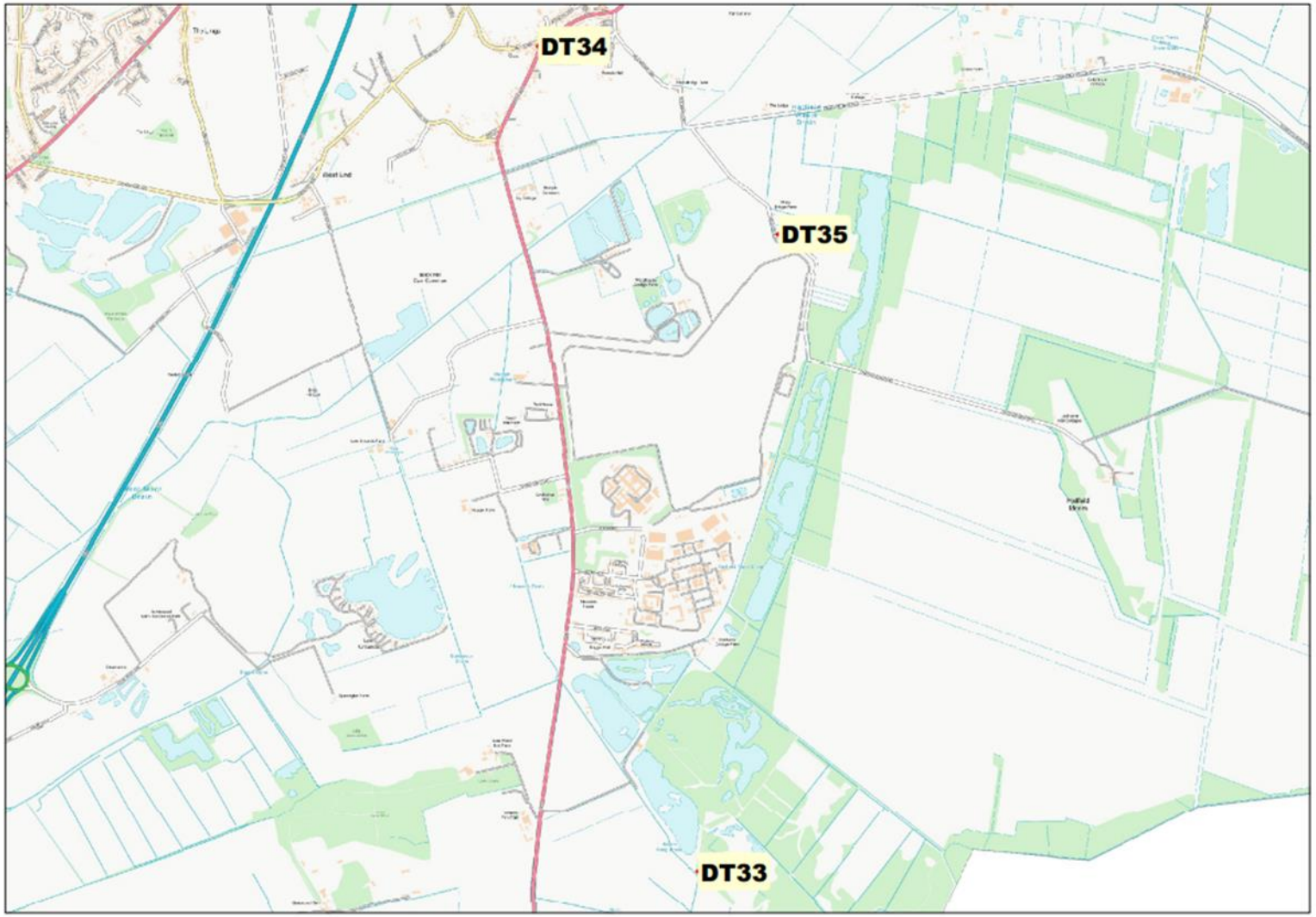
Map of Diffusion Tubes located Along A638 Bawtry Road



Map of Diffusion Tubes located Along A638 York Road



Map of Diffusion Tubes located near Hatfield Moors



N

Key

Monitoring Point	Location
DT33	Hatfield Moors, off A614 Thorne Road
DT34	A614 Bawtry Rd, Hatfield Woodhouse
DT35	Hatfield Moors, Hollinbridge Lane. H'field, W'house

Title :

HATFIELD MOORS

Completed by:
GeraldineP

Reference :
AQ REPORT MAP_MAY 2022

Date :
07/07/2022

Scale :
1:7,544

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[9]

Pollutant	Air Quality Objective: Concentration	Air Quality Objective: Measured as
Nitrogen Dioxide (NO2)	200µg/m^3 not to be exceeded more than 18 times a year	1-hour mean
Nitrogen Dioxide (NO2)	40µg/m^3	Annual mean
Particulate Matter (PM10)	50µg/m^3, not to be exceeded more than 35 times a year	24-hour mean
Particulate Matter (PM10)	40µg/m^3	Annual mean
Sulphur Dioxide (SO2)	350µg/m^3, not to be exceeded more than 24 times a year	1-hour mean
Sulphur Dioxide (SO2)	125µg/m^3, not to be exceeded more than 3 times a year	24-hour mean
Sulphur Dioxide (SO2)	266µg/m^3, not to be exceeded more than 35 times a year	15-minute mean

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

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Annual Status Report
BAM	Beta Attenuation Monitor
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by National Highways
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO_2	Sulphur Dioxide

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- City of Doncaster Council Local Plan https://www.doncaster.gov.uk/services/planning/local-plan

- City of Doncaster Council Environment and Sustainability Strategy 2020-2030 https://doncaster.moderngov.co.uk/documents/s28624/Environment%20Strategy%20AppendixA.pdf