Doncaster Council

2020 Air Quality Annual Status Report (ASR)

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

June 2020

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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 and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas[1,2].

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion[3].

There are seven areas of poor air quality in Doncaster, these Air Quality Management Areas (AQMAs) are declared due to the pollutant nitrogen dioxide. In 2020 the declaration of a further area of poor air quality close to AQMA7 will be made, following a slight delay in the legal process. The village of Marr exceeds the nitrogen dioxide annual average and traffic emissions are the source of this exceedance.

There are no other pollutants in Doncaster that exceed the air quality objectives. A decline in concentrations of nitrogen dioxide over the last 5 – 10 years can be observed in many places across the Borough and particularly in 2019 however parts of the Borough continue to exceed.

The AQMAs are located near busy roads in the following areas; Town Centre along Church Way, Balby A630, Hyde Park along Carr House Road A18, Bawtry Road M18/A638, Conisbrough A630/Low Road, Skellow along the A1 and Hickleton and Marr on the A635. An action plan is in place bringing forward measures to work towards reducing emissions and ultimately achieving compliance with the objectives.

There are no new major sources of pollution in Doncaster that will have a significant impact on the achievement of the air quality objectives however all new proposals

[1] Environmental equity, air quality, socioeconomic status and respiratory health, 2010
[2] Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006
[3] Defra. Abatement cost guidance for valuing changes in air quality, May 2013

are expected to mitigate emissions in line with current best practice thereby minimising cumulative impacts.

Actions to Improve Air Quality

The Air Quality Action Plan (AQAP) measures are progressing and the Steering Group continues to meet regularly to discuss new measures and progress.

Doncaster Council will continue to engage and develop our links with key partners to help deliver better air quality, including working with the Sheffield City Region (SCR), Highways England and local businesses and communities.

In 2019 the ECO Stars Fleet Recognition Scheme focus was placed on a future business case to allow the scheme to become self-funding, further work on recruitment and guidance was also completed.

Active travel schemes have also been progressed across the Borough.

Doncaster Council are considering the role of electric vehicles in both its own operation and enabling charging for the public. This includes promotional activity for instance during Clean Air Day.

There are two further measures that will be removed from the action plan next year as at this time activity is ongoing but not being developed further.

Technical planning guidance continues to be a useful tool to promote and increase EV Charging on all development across the Borough.

(Selection of photographs showing activity to reduce emissions in Doncaster, images property of Doncaster and Barnsley Council, 2019)

Conclusions and Priorities

This year's ASR confirms that the status of the AQMAs remains valid. The data from 2019 does not indicate any new exceedances outside of the AQMAs. A number of locations revealed a decrease in concentrations on the previous year and over the longer term the trend shows that levels are improving in many areas. Compliance with the air quality objectives has not been achieved in several of the AQMAs and some areas are not likely to meet the objectives in the short-term. Evidence indicates that AQMA3 and AQMA4 are likely be compliant in 2020 and will be monitored over the coming years with a view to the AQMA status being revoked.

The priority for the Council is to continue to implement the measures in the air quality action plan and identify further measures that could bring forward compliance, in particular facilitating the change to cleaner vehicles and active travel.

The risks remain the same as in many other Council areas and are mainly of funding and resource issues. The Clean Air Zones (CAZ) are being implemented over the next 1-2 years and the impact of this on areas without CAZ, such as Doncaster, is still unknown and one the Council is monitoring.

Local Engagement and How to get Involved

Doncaster Council publishes the ASR and AQAP on its website. Daily air quality information is published via websites, twitter, newspapers and on local radio as a way to inform residents, schools and businesses of the current levels of air quality. Doncaster Council also engages 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. The 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 Highways England. Doncaster Council is also an active member of the Yorkshire and Lincolnshire Pollution Advisory Group (YALPAG).

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 obtained via www.doncaster.gov.uk or through the contact details at the front of this report.

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1 Local Air Quality Management

This report provides an overview of air quality in Doncaster during 2019. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) and the relevant Policy and Technical Guidance documents.

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

The statutory air quality objectives applicable to LAQM in England can be found in Table E.1 in Appendix E.

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 must prepare an Air Quality Action Plan (AQAP) within 12-18 months setting out measures it intends to put in place in pursuit of compliance with the objectives.

A summary of AQMAs declared by Doncaster Council can be found in Table 2.1. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=80. Alternatively, see Appendix D: Map(s) of Monitoring Locations and AQMAs, which provides for a map of air quality monitoring locations in relation to the AQMA(s).

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	City / Town	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance (maximum monitored/modelled concentration at a location of relevant exposure)		Action Plan		
						At Declaration	Now	Name	Date of Publication	Link
AQMA 1	Declared August 1st 2001	NO2 Annual Mean	Doncaster	An area along Church Way through the town centre of Doncaster encompassing the main shoping precinct, transport interchange, college and residential properties.	NO	53 µg/m3	45 µg/m3	Doncaster Air Quality Action Plan 2018	Jun-18	http://www.doncaster.gov.uk/services/environmental/air-quality-reports-available-to-the-public
AQMA 2	Declared August 1st 2001	NO2 Annual Mean	Doncaster	An area along the A630 from Balby to the A1 at Warmsworth emcompassing residentail properties.	YES	53 µg/m3	48 µg/m3	Doncaster Air Quality Action Plan 2018	Jun-18	http://www.doncaster.gov.uk/services/environmental/air-quality-reports-available-to-the-public
AQMA 3	Declared August 1st 2001	NO2 Annual Mean	Doncaster	An area encompassing residential properties along the A18.	NO	43 µg/m3	38 µg/m3	Doncaster Air Quality Action Plan 2018	Jun-18	http://www.doncaster.gov.uk/services/environmental/air-quality-reports-available-to-the-public

AQMA 4	Declared June 1st 2003	NO2 Annual Mean	Doncaster	An area encompassing a residential estate following the M18 where it crosses the A638.	YES	43 µg/m3	38 µg/m3	Doncaster Air Quality Action Plan 2018	Jun-18	http://www.doncaster.gov.uk/services/environmental/air-quality-reports-available-to-the-public
AQMA 5	Declared April 1st 2012	NO2 Annual Mean	Doncaster	A residential area along the A630 in Conisbrough including the junction with Low Road.	YES	49 µg/m3	43 µg/m3	Doncaster Air Quality Action Plan 2018	Jun-18	http://www.doncaster.gov.uk/services/environmental/air-quality-reports-available-to-the-public
AQAM 6	Declared December 1st 2013	NO2 Annual Mean	Doncaster	A residential area along the A1.	YES	51 µg/m3	38 µg/m3	Doncaster Air Quality Action Plan 2018	Jun-18	http://www.doncaster.gov.uk/services/environmental/air-quality-reports-available-to-the-public
AQMA 7	Declared February 1st 2014	NO2 Annual Mean	Doncaster	A village with residential properties along the A635.	YES	86 µg/m3	76 µg/m3	Doncaster Air Quality Action Plan 2018	Jun-18	http://www.doncaster.gov.uk/services/environmental/air-quality-reports-available-to-the-public

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

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

Defra's appraisal of last year's ASR concluded 'On the basis of the evidence provided by the local authority the conclusions reached are acceptable for all sources and pollutants. Following the completion of this report, Doncaster Metropolitan Borough Council should submit an Annual Status Report in 2020.'

Doncaster Council has taken forward a number of direct measures during the current reporting year of 2019 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2.

More detail on these measures can be found in the Air Quality Action Plan 2018.

While work has been ongoing on the AQAP, the current situation with Covid-19 has meant that some measures will be temporarily delayed or on hold and it has not been possible to get a thorough report on progress in some cases. Updates will be made in due course should details be available prior to the report publication.

In the previous ASR Doncaster Council expected the following measures to be completed in 2019:

- Measure no.2 ECO stars Fleet Recognition Scheme including business case, Taxi scheme and Non-road mobile machinery (NRMM) guidance and;

- Measure no.5 Sustainable Travel Access Fund Projects

Measure 2 was successfully completed, the business targets were met by scheme completion in August 2019. ECO Stars NRMM feasibility was completed, along with a suggested Future Business Model option. Further details can be found in the Final Report Air Quality Grant Scheme 2017 – 2018, in Appendix F.

Measure 5 has been ongoing throughout 2019 and 2020 however it has not been possible to gather all the necessary information to include into the report at this time. An update will be given as soon as possible.

Measure 3 Clean Air Plans will remain in the AQAP because it remains an important future option, however following an unsuccessful funding application will not be progressed at this time. Doncaster Council will continue to identify funding streams and options to develop this action. Doncaster Council will work with neighbouring

Clean Air Zone partners to develop an in-house modelling methodology in an attempt to strengthen the evidence base to take this measure forward.

The following measures have been removed from the Action Plan;

The measure relating to Taxi Licensing has been removed following the completion of the ECO Stars Taxi scheme during the previous ASR, while the idea of more stringent standards for Taxi will continue to be on the agenda. The lack of engagement from the Taxi operators at this time has meant that the scheme ended without the desired results. The scheme was funded through the Air Quality Grant and the final report is included in Appendix F.

Green barriers were investigated for AQMA7, in particular, however the location was not suitable for the installation of a barrier and it would have been unlikely to have improved air quality in the worst case locations. Funding is not currently available (both Highways England and Air Quality Grant excluded such bids) for such projects as it is suggested that air quality benefits from such schemes have not been proven. Therefore the action has been removed until such a time as further evidence or funding is available.

Doncaster Council's priorities for the coming year continue to be focused on the development of new measures as part of the wider Sheffield City Region plans and other local policy decisions including Cycling and Walking Strategies. The emerging Climate Commission and Environmental Strategies will take account of and influence the AQAP.

Doncaster Council and partners have developed a method for identifying the benefits of the SCR schemes in terms of damage costs. In Doncaster this equates to approximately £84,500 over the lifetime of the implementation plan.

The Motorway Road Network is a contributor to local road traffic, sometimes with significant numbers of vehicles cutting through the Borough to access the motorways. In particular this is an issue for AQMA7 at Hickleton and the soon to be declared AQMA at Marr. As such an agreement between Doncaster Council and partners has been reached to fund a feasibility study into a bypass along part of the A635. A bypass would have a significant impact on the AQMA and therefore this feasibility study will be included in the future AQAP as the main measure for dealing

with this AQMA which we acknowledge would not achieve compliance within the lifetime of this plan otherwise.

Barnsley and Doncaster Councils successfully obtained Air Quality Grant funding for a new project. ECO driver training for the grey fleet will be offered across both areas and further details of this project can be found in Appendix F (Measure 14).

A further new measure to be included in next year's ASR will be the Councils policy on developing local EV Charging Infrastructure. The internal processes to look at this are still being developed and it will be included as a measure once agreed.

The principal challenges and barriers to implementation that Doncaster Council anticipates facing are funding and resource issues along with the currently unknown impacts of Covid-19 and CAZ.

Doncaster Council anticipates that the measures stated above and in Table 2.2 will achieve compliance by 2022 in AQMA1, 3, 4, 5, 6 and the soon to be declared AQMA7A.

Whilst the measures stated above and in Table 2.2 will help to contribute towards compliance, Doncaster Council anticipates that further additional measures not yet prescribed will be required in subsequent years to achieve compliance and enable the revocation of AQMA2 and 7.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	EU Category	EU Classification	Date Measure Introduced	Organisations involved	Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
1	ECO stars Fleet Recognition Scheme	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	pre-2016	Doncaster Council, and Barnsley Council.	Air Quality Grant	No. of scheme members.	Low	173 members 12911 Vehicles registered. The Future Business Case and NRMM work has been completed. Further details provided in the Appendices.	Jun-19	Ability of scheme to become self-funding.
2	Air Quality Planning and Technical Guidance	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	April 2017 - June 2017	Doncaster Council	Doncaster Council	% of applications with air quality mitigation included.	Low	All releavnt applications now screened with this guidance.	June 2020	Continues to be used on 100% applications that Pollution Control are consulted on.
3	Clean Air Plans	Promoting Low Emission Transport	Low Emission Zone (LEZ)	August 2017 - December 2019	Doncaster Council	None	TBC	High	Applied for funding but unsuccessful. Measure to be removed until funding identified.	Dec-20	Applied for funding for similar project through Air Quality Grant but unsucessful due to not being able to demonstrate benefits.
4	Sustainable Travel Access Fund Projects	Promoting Travel Alternatives	Promotion of cycling	Pre- April 2017	Doncaster Council and Sheffield City Region	Sheffield City Region	- Dr Bike Services - Cycle Training - Cycle Package	Low		Mar-20	New funding streams identified and work will continue to progress on various projects going forward all of which will be reported on under this measure.
5	Future Transport (Fleet) Policy	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	April 2017 - April 2018	Doncaster Council	Doncaster Council	% Fleet as Diesel/ Petrol/ ULEV/ Hybrid.	Medium	Investigating funding streams.	Policy in place Summer 2018	Futher planning and investigation being carried out across the Council to develop a Strategy and Implemention Plan.
6	20mph Speed Limits	Traffic Management	Reduction of speed limits, 20mph zones	June 2017	Doncaster Council	Doncaster Council	Speed Survey Results	Low	20mph speed limits now implemented in west Bessacarr, parts of Town Moor (Manor Drive/Alderson Drive area) and has commenced in north Wheatley. Preparation work on-going for Intake, Thorne (Southfield) and Moorends, and new	March 2020	20mph speed limit work continuing with schemes recently completed in Town Moor, Intake, Bessacarr and Edlington, and work on-going in Wheatley Park, Thorne and Moorends.

									areas identified as parts of Edlington, Conisbrough and Mexborough.		
7	Co-ordination of road works on key routes	Traffic Management	Other	July 2017 - September 2017	Doncaster Council	Doncaster Council	Reduction in journey time on key routes	Low	Permit now required for all roads in AQMAs. Tighter controls and conditions can now be implemented on utility companies etc, leading to reduced delays and congestion.	March 2020	Ongoing however to be removed from report next year.
8	Cycling Strategy	Promoting Travel Alternatives	Promotion of cycling	Adopted 2013	Doncaster Council and Sheffield City Region	Sheffield City Region	• numbers of people cycling •number of journeys by bicycle • improve health by increasing cycling as part of everyday life	Low	Strategy currently being updated. Sustrans are developing an implementation to deliver.	March 2020	Funding and uptake
9	Quality Bus Partnership	Promoting Low Emission Transport	Other	2016	Doncaster Council, SYPTE and Bus Operators	Doncaster Council and Private Business	•Reduce and limit traffic congestion and thereby air through investment in higher Euro Engine specifications • Provide high quality choice for those with use of a car • Reduce environmental impact	Low	Still in place however nothing further report.	March 2020	Get Doncaster Cycling strategy was approved December 2019. The implementation is oveseen by the Active Travel Alliance. Recommendations incoporated into Transforming Cities Fund proposalas and more recently emergency COVID funding.
10	Parking Strategy	Policy Guidance and Development Control	Other policy	2018	Doncaster Council	Doncaster Council	Six EV chargers in Council operated car parks.	Low	Car parking health check completed.	June 2020	Increased charging capaciy in central car Council run car park. Plans to implement further charging being made.
11	Walking Strategy	Alternatives to private vehicle use	Other	2018	Doncaster Council and Sheffield City Region	Doncaster Council and Sheffield City Region	TBC	Low	14 Community street audits completed and 44 volunteers trained.	June 2020	Majority of activity has now paused due to COVID however some elements considered in the COVID emergency fund.
12	Highways Planned Maintenance Scheme Priority	Traffic Management	Other	2018	Doncaster Council	Doncaster Council	No. of works co-ordinated	Low	An air quality site rating score has been introduced as part of our scheme priority modelling process, to date no air quality related sites have been identified for	June 2020	None.

									planned highway maintenance works in 2019/20.		
13	Procurement	Policy Guidance and Development Control	Sustainable Procurement Guidance	2018	Doncaster Council	Doncaster Council	TBC	Medium	None	June 2020	None.
14	ECO Driver Training	Vehicle Fleet Efficiency	Driver training and ECO driving aids	2019	Doncaster and Barnsley Council	Air Quality Grant	No. of companies & No. of drivers	Low	Contract awarded launch carried out in Doncaster. First sessions carried out prior to covid-19 halting the project.	Summer 2020	Covid-19 has led the scheme has been put on hold while businesses are back in a position to accept training and appropriate social distancing measures can be adhered to.

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

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

The Public Health Outcomes Framework indicator for Doncaster (2018) for deaths attributable to $PM_{2.5}$ stands at 4.6% which is lower than the national average but worse than the Yorkshire and Humber average.

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

- Smoke Control Orders are in place across the Borough with complaint led enforcement
- Promotion of ULEV, modal shift and active travel in the AQAP
- Public Health Action Plan (see appendices).

There is no $PM_{2.5}$ monitoring data for Doncaster in 2019 although an estimation derived from PM_{10} monitoring is provided in the monitoring section of this report. Doncaster Council intends to implement monitoring for $PM_{2.5}$ across the Borough and the first monitoring site is now in place and data will be available for 2021.

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

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

This section sets out what monitoring has taken place and how it compares with objectives.

Doncaster Council undertook automatic (continuous) monitoring at 4 sites during 2019. Table A.1 in Appendix A shows the details of the sites.

National monitoring results are available at https://uk-air.defra.gov.uk/networks/site-info?site_id=DCST

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.

Automatic monitoring sites across the Borough have been in-situ for in some instances over 15 years and data capture has gradually decreased due to instrument age. Doncaster Council have committed funding to implement a rolling programme of renewal of all the sites within Doncaster. The first new station was installed in 2019 (AQMA1) and in 2020 a further site will be installed in AQMA7

3.1.2 Non-Automatic Monitoring Sites

Doncaster Council undertook non- automatic (passive) monitoring of NO_2 at 61sites during 2019. Table A.2 in Appendix A shows the details of the sites.

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

3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for bias[4], "annualisation" (where the data capture falls below 75%), and distance correction[5]. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO_2)

Table A.3 in Appendix A compares the ratified and adjusted monitored NO_2 annual mean concentrations for the past 5 years with the air quality objective of 40µg/m^3. Note that the concentration data presented in Table A.3 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 2019 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.4 in Appendix A compares the ratified continuous monitored NO_2 hourly mean concentrations for the past 5 years with the air quality objective of 200µg/m^3, not to be exceeded more than 18 times per year.

The data in 2019 indicates an improvement in nitrogen dioxide concentrations across the Borough, in some cases these are significant. This improvement continues for the 2nd year running after an increase in concentratiosns was observed across the Borough in 2017.

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

AQMA1, 2, 5 and 7 have at least one site that continues to exceed the objective, both at roadside and at a point of relevant expsoure once the figures are distance corrected. In AQMA6 exceedances are observed at roadside but distance corrected values are below the objective. AQMA3, 4 and the soon to be declared 7A have no exceedances at roadside or following distance correction.

[4] https://laqm.defra.gov.uk/bias-adjustment-factors/bias-adjustment.html
[5] Fall-off with distance correction criteria is provided in paragraph 7.77, LAQM.TG(16)

AQMA 1, 3 and 4 have for some time seen monitored levels fall below the objective at long-term sites and therefore further short-term studies have been carried out in 2018 and 2019 for 2 of these areas.

The data comprises DT60-64 for AQMA 1 and DT65-67 for AQMA3. AQMA4 study began in 2020 and will be reported on in next years ASR. In AQMA1 it is clear that at many locations of relevant exposure concentrations still exceed. The AQMA3 data shows that all sites are now compliant and below the objective, in most cases well below. The monitoring will remain in place to establish whether this AQMA can be revoked.

In conclusion the AQMAs remain valid for the current time but will continue to be reviewed.

The new AQMA at Marr – proposed at this time as AQMA7a – is along the same stretch of road as AQMA7 and is essentially an extension of this AQMA. Marr should have its formal declaration in Summer 2020 and along with AQMA7 reductions in concentrations have been observed in this case such that no exceedance was recorded for 2020, the designation is still required until several years of data have been obtained to evidence a sustained compliance in the area. The proposed boundary can be found in the appendices.

There are 3 non-passive sites that record annual concentrations above 60µg/m^3 and are therefore likely to lead to an exceedance of the hourly objective, these are all located within AQMA7 which is declared for a breach of both nitrogen dioxide objectives.

Long term trend graphs, Figure A.1. to A.8. have been included in Appendix A and present an overall positive position of annual average nitrogen dioxide concentrations in Doncaster.

The long-term monitoring data outside AQMAs continues to indicate a clear downward trend. This pattern is also seen across all AQMAs with the exception of AQMA7 where the trend is flat over the whole monitoring period. The downward trend is more pronounced in some AQMAs than others however with improvements in AQMA2 in particular being less significant.

3.2.2 Particulate Matter (PM_{10})

Table A.5 in Appendix A compares the ratified and adjusted monitored PM_{10} annual mean concentrations for the past 5 years with the air quality objective of 40µg/m^3.

Table A.6 in Appendix A compares the ratified continuous monitored PM_{10} daily mean concentrations for the past 5 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 PM_{10} across any of the montoring sites in Doncaster and therefore both the annual and daily mean objectives are considered to be met within the Borough.

Figure A.9. shows the long-term trend of PM_{10} monitoring results in Doncaster and shows a consistant downward trend within Doncaster.

3.2.3 Particulate Matter ($PM_{2.5}$)

No monitoring data is available locally and no national monitoring is carried out within the Borough. A rolling programme of monitoring is being implemented with the first analyser now in place in Doncaster Town Centre and data will be available for 2020.

PM_{10} data can be used to estimate $PM_{2.5}$ following guidance in TG(16). A national ratio can be used in the absence of a suitable local site; applying this ratio to PM_{10} monitoring in Doncaster produced the following results for $PM_{2.5}$;

Carr House Road, Doncaster – 10.71 µg/m^3.

Low Road, Conisbrough – 12.18µg/m^3.

These concentrations over previous years have agreed closely with the modelled figure but the latest modelling is suggesting a reduction that we have not observed with the factored data. Modelled data shows $PM_{2.5}$ in Doncaster, at the above monitoring sites, as 7.9µg/m^3 and 7.5µg/m^3 respectively which is lower than both of the factored results. As the new monitoring is implemented $PM_{2.5}$ concentrations in Doncaster will continue to be reviewed.

National modelling suggests that concentrations are low across Doncaster. The highest concentration is 8.8µg/m^3 close to the M18 motorway near Armthorpe.

No exceedanced have been identified.

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?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
CM1	Unit 1 A18 Carr House Road	Roadside	458027	402475	NO2; PM10	Y	Chemiluminescent Analyser; TEOM	4	1.7m	3
CM2	Unit 3 Market Place	Urban centre	457669	403611	NO2; PM10	Y	Chemiluminescent Analyser; TEOM	30.7	20m	3
CM3	Unit 4 A1/A630 Grosvenor Terrace	Roadside	454964	400745	NO2	Y	Chemiluminescent Analyser	15.7	7.3m	3
CM4	Unit 6 A638 Bawtry Road	Roadside	462278	400111	NO2	Y	Chemiluminescent Analyser	20	2.2m	3
CM5	Unit 10 A6023 Low Road, Conisbrough	Roadside	451438	398528	NO2; PM10	Y	Chemiluminescent Analyser; TEOM	17	2.95m	2
CM6	A1, Skellow	Roadside	452185	410380	NO2	Y	Chemiluminescent	11	2.5m	2

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

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
DT1	North Bridge (North)	Kerbside	456946	403763	NO2	N	20+	0.8	N	2
DT2	North Bridge (South)	Roadside	457308	403458	NO2	Y	20+	9.2	N	2
DT3	Regent Sq.	Kerbside	457952	403123	NO2	N	1	0.5	N	2
DT4	South Parade	Roadside	457975	403134	NO2	N	20+	2	N	2
DT5	Bennethorpe Road	Kerbside	459113	402842	NO2	Y	20+	0.5	N	2
DT6	Carr House Road	Roadside	459533	402768	NO2	N	20+	6.8	N	2
DT7	Sheep bridge Lane	Kerbside	462899	399328	NO2	N	20+	1	N	2
DT8	Hayfield Lane	Roadside	463023	399428	NO2	N	20+	2.3	N	2
DT9	Hurst Lane	Kerbside	463888	398416	NO2	N	20+	0.8	N	2
DT10	Hayfield Lane/Hurst Lane	Kerbside	464879	399699	NO2	N	20+	0.7	N	2
DT11	Gattison Lane	Roadside	461334	397977	NO2	N	13.3	2.3	N	2
DT12	West End Lane	Roadside	461164	398459	NO2	N	23.8	2	N	2
DT13	Bawtry Road	Roadside	462242	400134	NO2	Y	20+	3.5	N	2
DT14	Stoops Lane	Roadside	461362	400777	NO2	N	14	3.2	N	2

DT15	Dunniwood Avenue	Roadside	461875	400396	NO2	N	9.5	1.5	N	2
DT16	Burnham Close	Roadside	460703	400559	NO2	N	10.8	1.2	N	2
DT17	Lindrick Close	Roadside	459947	401538	NO2	N	7.5	3	N	2
DT18	Cantley Lane	Roadside	460342	402108	NO2	N	12.5	1.2	N	2
DT19	Gliwice Way (Dome)	Roadside	459745	402638	NO2	N	20+	3.3	N	2
DT20	Gliwice Way (Town)	Roadside	459721	402650	NO2	N	20+	2.3	N	2
DT21	Hall Flat Junction	Roadside	456164	401227	NO2	Y	6	1.5	N	2
DT22	Warde Avenue	Roadside	455679	401000	NO2	Y	10.7	2.5	N	2
DT23	Low Road	Kerbside	451457	398659	NO2	N	1.2	1	N	2
DT24	Clifton Hill Junction	Roadside	451419	398540	NO2	N	2.7	2.2	N	2
DT25	Waverley Avenue	Roadside	455635	401002	NO2	Y	20+	1.5	N	2
DT26	High Road	Roadside	456130	401258	NO2	Y	20+	2.5	N	2
DT27	Belmont Avenue	Roadside	457010	402056	NO2	Y	1	1.5	N	2
DT28	Mansfield Road	Roadside	457022	402141	NO2	Y	0.3	3.7	N	2
DT29	Airport – Hayfield Lane	Roadside	464986	399697	NO2	N	0	8.7	N	2
DT30	Airport – Gate House Lane	Roadside	465719	400140	NO2	N	9.3	6	N	2
DT31	Airport – Mosham Road	Roadside	466895	400405	NO2	N	0	11.3	N	2
DT32	Airport – Rose Cottage	Roadside	467174	400372	NO2	N	0	5.5	N	2
DT33	Airport – Hatfield Moors	Background	468629	404336	NO2	N	20+	N/A	N	2
DT34	Airport – Hatfield Woodhouse	Roadside	467755	408643	NO2	N	20+	2.3	N	2

DT35	Airport - Hollinbridge Lane	Background	469056	407623	NO2	N	20+	N/A	N	2
DT36	Market Place	Roadside	457615	403630	NO2	Y	20+	6.3	N	2
DT37	Church Way	Roadside	457379	403460	NO2	Y	4	4	N	2
DT38	Stainforth	Urban background	464046	411818	NO2	N	20+	9.3	N	2
DT39	Howden Avenue, Skellow	Roadside	452219	410224	NO2	YES	0	7	N	2
DT40	Hill Crest, Skellow	Kerbside	452195	410302	NO2	YES	0.3	7.6	N	2
DT41	Five Lane Ends, A1, Skellow	Roadside	452180	410377	NO2	YES	6.65	9.35	N	2
DT42	Skellow – Crabgate Lane	Roadside	452180	410402	NO2	YES	15	1	N	2
DT43	Skellow – Hampole Balk	Roadside	452192	410389	NO2	YES	12	1.8	N	2
DT44	Hickleton – Sue Ryder Care Home	Kerbside	448221	405303	NO2	YES	3	1	N	2
DT45	Hickleton – Doncaster Road	Roadside	447966	405303	NO2	YES	0	14.4	N	2
DT46	Hickleton – Barnsley Road	Roadside	448149	405296	NO2	YES	0	3.6	N	2
DT47	Hickleton – Opp. Fir Tree Close	Kerbside	448054	405319	NO2	YES	0.3	0.8	N	2
DT48	Hickleton – John O'Gaunts	Kerbside	448218	405320	NO2	YES	0.3	0.8	N	2
DT49	Marr	Kerbside	451331	405219	NO2	YES	0	3.1	N	2
DT50	Thorne – King Street	Roadside	468749	413300	NO2	N	0.5	2	N	2
DT51	Willow Street, Conisbrough	Roadside	451446	398582	NO2	Y	20+	2.1	N	2

DT52	Doncaster Road (Junction), Conisbrough	Roadside	451485	398514	NO2	Y	2	2	N	2
DT53	27 Low Road, Conisbrough	Kerbside	451453	398632	NO2	Y	0	1.88	N	2
DT54	32/34 Low Road, Conisbrough	Roadside	451440	398652	NO2	Y	0.3	1.78	N	2
DT55	Doncaster Road, Conisbrough	Roadside	451624	398690	NO2	Y	0	6	N	2
DT56	Mason Arms, Mexborough	Roadside	448047	399880	NO2	N	3	4	N	2
DT57	Doncaster Road, Mexbrough	Roadside	448004	399862	NO2	N	13	2	NO	2
DT58	Barnsley Road, Marr	Kerbside	451824	405228	NO2	YES	0.3	1	NO	2
DT59	Bus Stop, Marr	Roadside	451514	405247	NO2	YES	0	18	NO	2
DT60	St Leger Place	Roadside	457870	403839	NO2	YES	0.5	7	NO	2
DT61	Dockin Hill Road	Roadside	457791	403767	NO2	YES	0.5	15.5	NO	2
DT62	Church Way	Roadside	457733	403740	NO2	YES	0.5	7	NO	2
DT63	Market Road	Roadside	457701	403579	NO2	YES	0	1.7	NO	2
DT64	The Swan	Roadside	457345	403433	NO2	YES	0	13.4	NO	2
DT65	Somerset Road	Roadside	457995	402506	NO2	YES	3.7	8	NO	2
DT66	Carr House 1	Roadside	458142	402563	NO2	YES	0	5.8	NO	2
DT67	Carr House 2	Roadside	458259	402582	NO2	YES	0	6.3	NO	2
DT68	Carr House 3	Roadside	458923	402567	NO2	YES	0	4.7	NO	2
DT69	White Road Rdbt	Roadside	457932	402448	NO2	YES	0	12.9	NO	2

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 NO_2 Monitoring Results

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	NO_2 Annual Mean Concentration (µg/m³) (3) (4)				
							2015	2016	2017	2018	2019
CM1	458027	402475	Roadside	Automatic	n/a	60	n/a	20	28.6	n/a	20.1
CM2	457669	403611	Urban Background	Automatic	n/a	n/a	n/a	**46.8**	26.1	25.6	n/a
CM3	454964	400745	Roadside	Automatic	n/a	77.1	n/a	**43.1**	23.9	n/a	23
CM4	462278	400111	Roadside	Automatic	n/a	n/a	n/a	n/a	37.2	28.1	n/a
CM5	451438	398528	Roadside	Automatic	n/a	74	31.2 (6 months)	31.6	37	30.5	25.4
CM6	452185	410380	Roadside	Automatic	n/a	99.97	39.6	39.2	**45.8**	37.3	27.9
DT1	456946	403763	Kerbside	Diffusion Tube	n/a	92	32	33	33	32	28
DT2	457308	403458	Roadside	Diffusion Tube	n/a	100	36	**40**	**41**	**41**	37
DT3	457952	403123	Kerbside	Diffusion Tube	n/a	100	27	33	33	31	27
DT4	457975	403134	Roadside	Diffusion Tube	n/a	100	39	**40**	**45**	39	35
DT5	459113	402842	Kerbside	Diffusion Tube	n/a	100	36	39	**43**	37	35
DT6	459533	402768	Roadside	Diffusion Tube	n/a	100	29	30	35	30	29
DT7	462899	399328	Kerbside	Diffusion Tube	n/a	100	27	35	**43**	no data	30
DT8	463023	399428	Roadside	Diffusion Tube	n/a	100	24	28	26	26	23

DT9	463888	398416	Kerbside	Diffusion Tube	n/a	100	25	33	37	27	20
DT10	464879	399699	Kerbside	Diffusion Tube	n/a	92	19	23	25	22	22
DT11	461334	397977	Roadside	Diffusion Tube	n/a	n/a	20	25	24	24	27
DT12	461164	398459	Roadside	Diffusion Tube	n/a	100	21	27	28	27	26
DT13	462242	400134	Roadside	Diffusion Tube	n/a	100	39	**43**	**44**	**41**	38
DT14	461362	400777	Roadside	Diffusion Tube	n/a	100	38	**41**	**44**	37	37
DT15	461875	400396	Roadside	Diffusion Tube	n/a	100	20	23	Ceased	Ceased	Ceased
DT16	460703	400559	Roadside	Diffusion Tube	n/a	100	20	24	Ceased	Ceased	Ceased
DT17	459947	401538	Roadside	Diffusion Tube	n/a	100	21	23	Ceased	Ceased	Ceased
DT18	460342	402108	Roadside	Diffusion Tube	n/a	100	22	26	Ceased	Ceased	Ceased
DT19	459745	402638	Roadside	Diffusion Tube	n/a	100	39	**41**	Ceased	Ceased	Ceased
DT20	459721	402650	Roadside	Diffusion Tube	n/a	100	35	**40**	Ceased	Ceased	Ceased
DT21	456164	401227	Roadside	Diffusion Tube	n/a	100	**42**	**47**	**50**	**50**	**46**
DT22	455679	401000	Roadside	Diffusion Tube	n/a	100	**43**	**48**	**50**	**52**	**46**
DT23	451457	398659	Kerbside	Diffusion Tube	n/a	100	35	37	**41**	**40**	38
DT24	451419	398540	Roadside	Diffusion Tube	n/a	100	34	**40**	**41**	**43**	39
DT25	455635	401002	Roadside	Diffusion Tube	n/a	100	32	38	**41**	**41**	38
DT26	456130	401258	Roadside	Diffusion Tube	n/a	100	32	35	38	39	34

DT27	457010	402056	Roadside	Diffusion Tube	n/a	83	35	**44**	**48**	**45**	**40**
DT28	457022	402141	Roadside	Diffusion Tube	n/a	92	**43**	**52**	**52**	**57**	**49**
DT29	464986	399697	Roadside	Diffusion Tube	n/a	92	14	17	19	16	16
DT30	465719	400140	Roadside	Diffusion Tube	n/a	92	15	18	18	19	16
DT31	466895	400405	Roadside	Diffusion Tube	n/a	100	14	17	17	16	14
DT32	467174	400372	Roadside	Diffusion Tube	n/a	100	16	20	18	19	15
DT33	468629	404336	Background	Diffusion Tube	n/a	92	9	10	12	11	9
DT34	467755	408643	Roadside	Diffusion Tube	n/a	100	19	22	23	21	19
DT35	469056	407623	Background	Diffusion Tube	n/a	100	10	12	12	13	10
DT36	457615	403630	Roadside	Diffusion Tube	n/a	100	32	38	**41**	37	32
DT37	457379	403460	Roadside	Diffusion Tube	n/a	92	34	**41**	**41**	**41**	39
DT38	464046	411818	Urban background	Diffusion Tube	n/a	100	15	18	18	19	16
DT39	452219	410224	Roadside	Diffusion Tube	n/a	100	38	**45**	**47**	**41**	37
DT40	452195	410302	Kerbside	Diffusion Tube	n/a	100	**40**	**48**	**48**	**45**	38
DT41	452180	410377	Roadside	Diffusion Tube	n/a	100	**46**	**53**	**55**	**48**	**41**
DT42	452180	410402	Roadside	Diffusion Tube	n/a	100	38	**43**	**46**	**43**	38
DT43	452192	410389	Roadside	Diffusion Tube	n/a	100	36	**42**	**43**	**40**	34
DT44	448221	405303	Kerbside	Diffusion Tube	n/a	100	**66**	**78**	**79**	**70**	**67**

DT45	447966	405303	Roadside	Diffusion Tube	n/a	100	18	23	25	25	22
DT46	448149	405296	Roadside	Diffusion Tube	n/a	100	32	**41**	37	**40**	35
DT47	448054	405319	Kerbside	Diffusion Tube	n/a	100	**87**	**106**	**100**	**91**	**76**
DT48	448218	405320	Kerbside	Diffusion Tube	n/a	100	**80**	**93**	**90**	**87**	**80**
DT49	451331	405219	Kerbside	Diffusion Tube	n/a	100	34	**44**	**46**	**43**	37
DT50	468749	413300	Roadside	Diffusion Tube	n/a	100	33	**41**	**40**	**41**	38
DT51	451446	398582	Roadside	Diffusion Tube	n/a	100	29	32	34	35	31
DT52	451485	398514	Roadside	Diffusion Tube	n/a	100	37	**42**	**43**	**44**	39
DT53	451453	398632	Kerbside	Diffusion Tube	n/a	100	34	**42**	**42**	**43**	36
DT54	451440	398652	Roadside	Diffusion Tube	n/a	100	**40**	**46**	**48**	**47**	**44**
DT55	451624	398690	Roadside	Diffusion Tube	n/a	100	27	31	36	34	31
DT56	448047	399880	Roadside	Diffusion Tube	n/a	92	32	37	**40**	**41**	38
DT57	448004	399862	Roadside	Diffusion Tube	n/a	100	33	38	38	**45**	37
DT58	451824	405228	Kerbside	Diffusion Tube	n/a	100	n/a	n/a	**46**	**43**	38
DT59	451514	405247	Roadside	Diffusion Tube	n/a	75	n/a	n/a	22	23	20
DT60	457870	403839	Roadside	Diffusion Tube	n/a	100	n/a	n/a	n/a	**43**	37
DT61	457791	403767	Roadside	Diffusion Tube	n/a	100	n/a	n/a	n/a	**42**	37
DT62	457733	403740	Roadside	Diffusion Tube	n/a	100	n/a	n/a	n/a	**53**	**45**

DT63	457701	403579	Kerbside	Diffusion Tube	n/a	92	n/a	n/a	n/a	**50**	**42**
DT64	457345	403433	Roadside	Diffusion Tube	n/a	100	n/a	n/a	n/a	**49**	**44**
DT65	457995	402506	Roadside	Diffusion Tube	n/a	100	n/a	n/a	n/a	39	34
DT66	458142	402563	Roadside	Diffusion Tube	n/a	100	n/a	n/a	n/a	**43**	38
DT67	458259	402582	Roadside	Diffusion Tube	n/a	100	n/a	n/a	n/a	38	32
DT68	458923	402567	Roadside	Diffusion Tube	n/a	100	n/a	n/a	n/a	29	Ceased
DT69	457932	402448	Roadside	Diffusion Tube	n/a	100	n/a	n/a	n/a	37	Ceased

☒ **Diffusion tube data has been bias corrected**

☒ **Annualisation has been conducted where data capture is <75%**

☒ **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 adjustment**

Notes:

Exceedances of the NO_2 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 NO_2 1-hour mean objective are shown in **bold and underlined.**

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

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

(3) Means for diffusion tubes have been corrected for bias. All means have been "annualised" as per Boxes 7.9 and 7.10 in LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

Figure A.1 – Trends in Annual Mean NO_2 Concentrations – Outside AQMA's

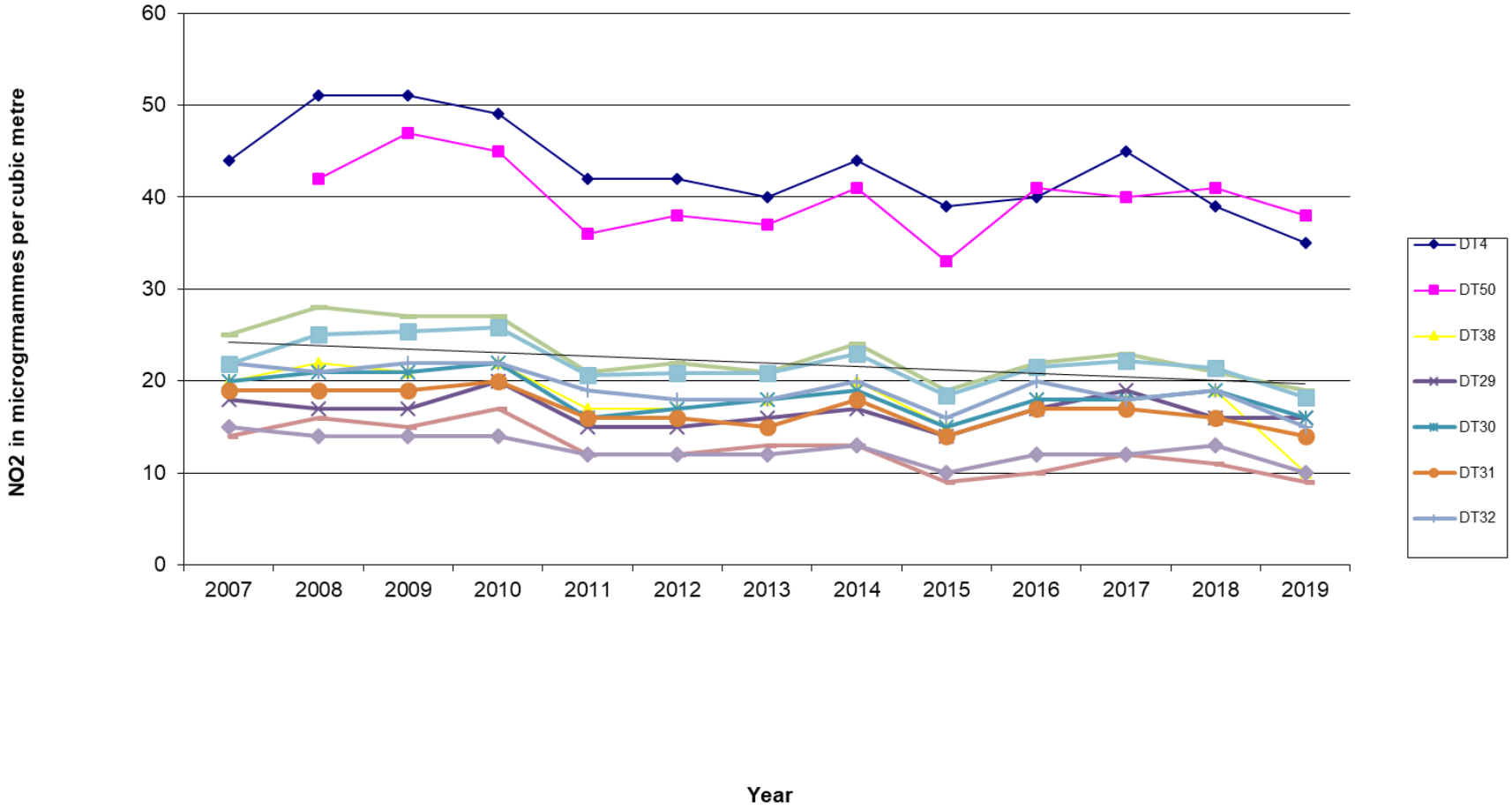


Figure A.2 – Trends in Annual Mean NO_2 Concentrations – AQMA1

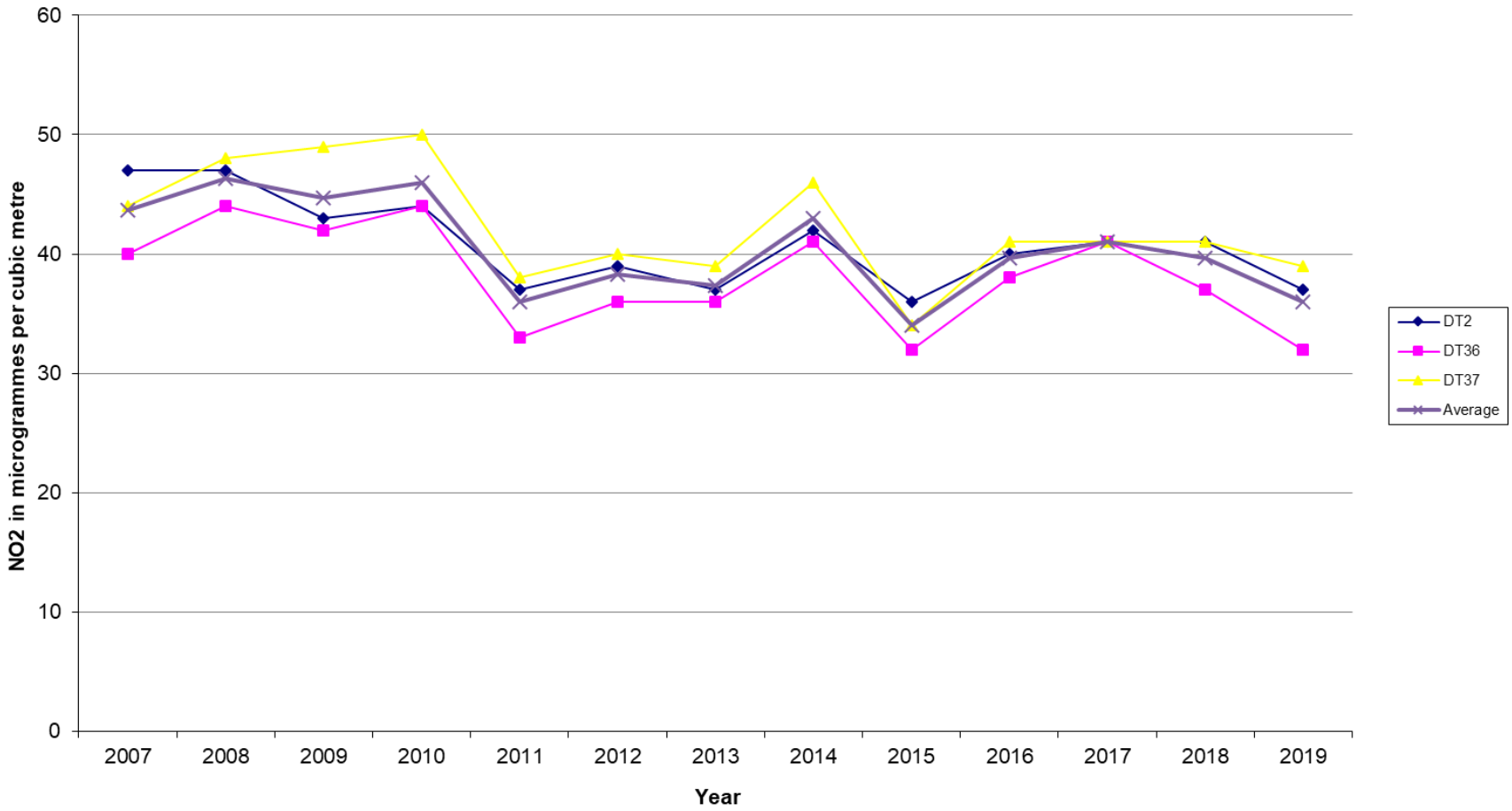


Figure A.3 – Trends in Annual Mean NO_2 Concentrations – AQMA2

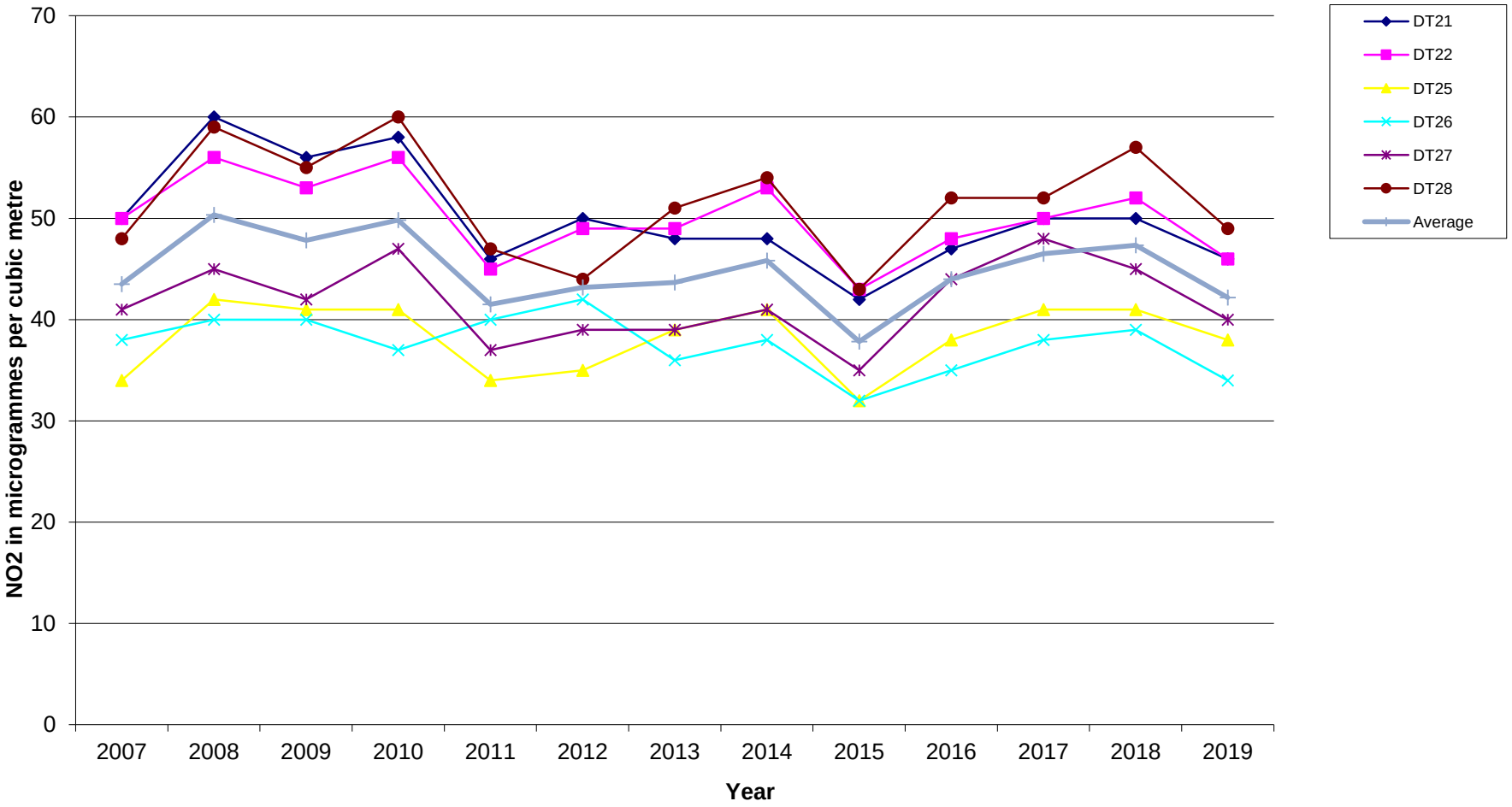


Figure A.4 – Trends in Annual Mean NO_2 Concentrations – AQMA3

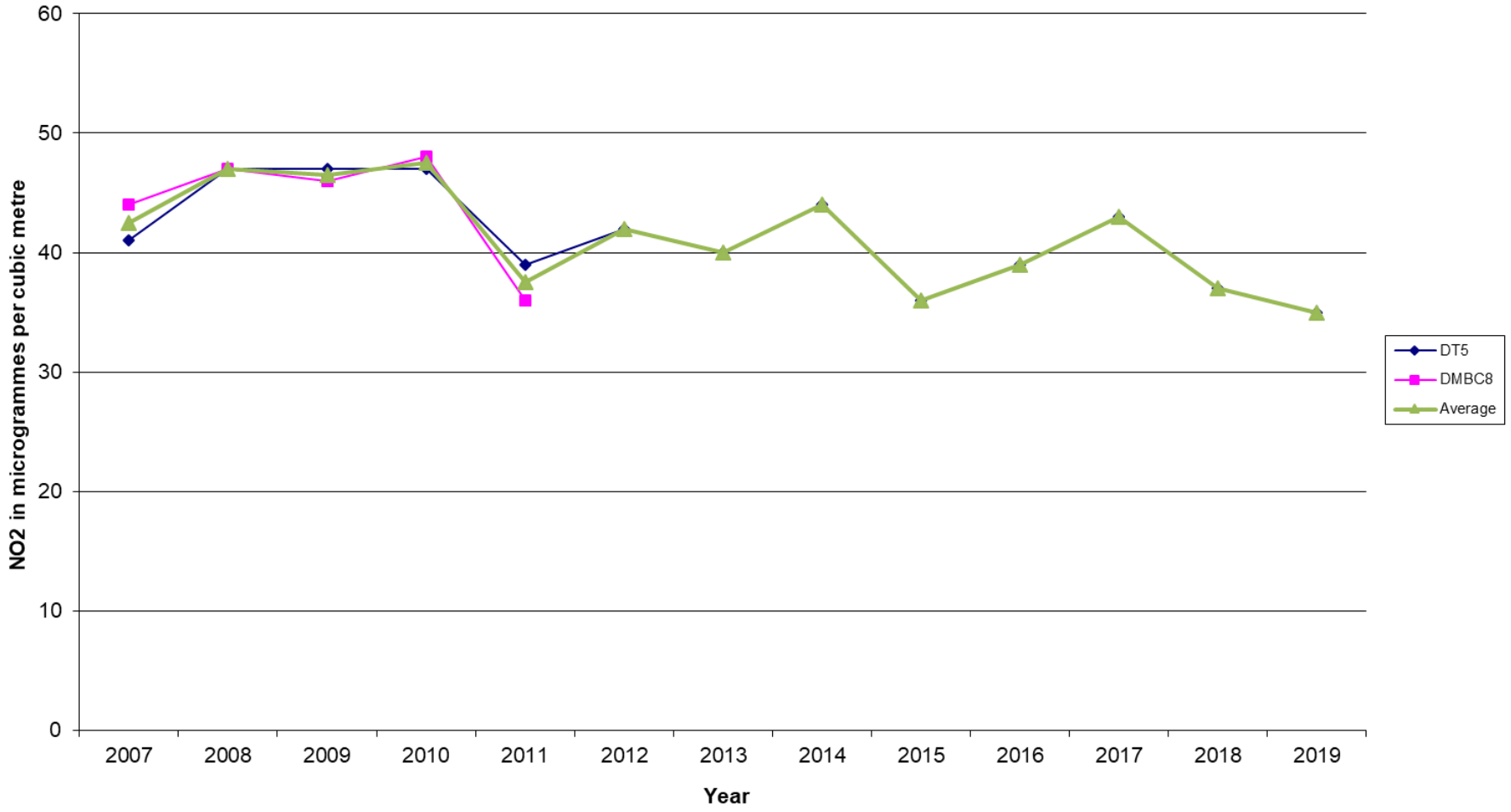


Figure A.5 – Trends in Annual Mean NO_2 Concentrations – AQMA4

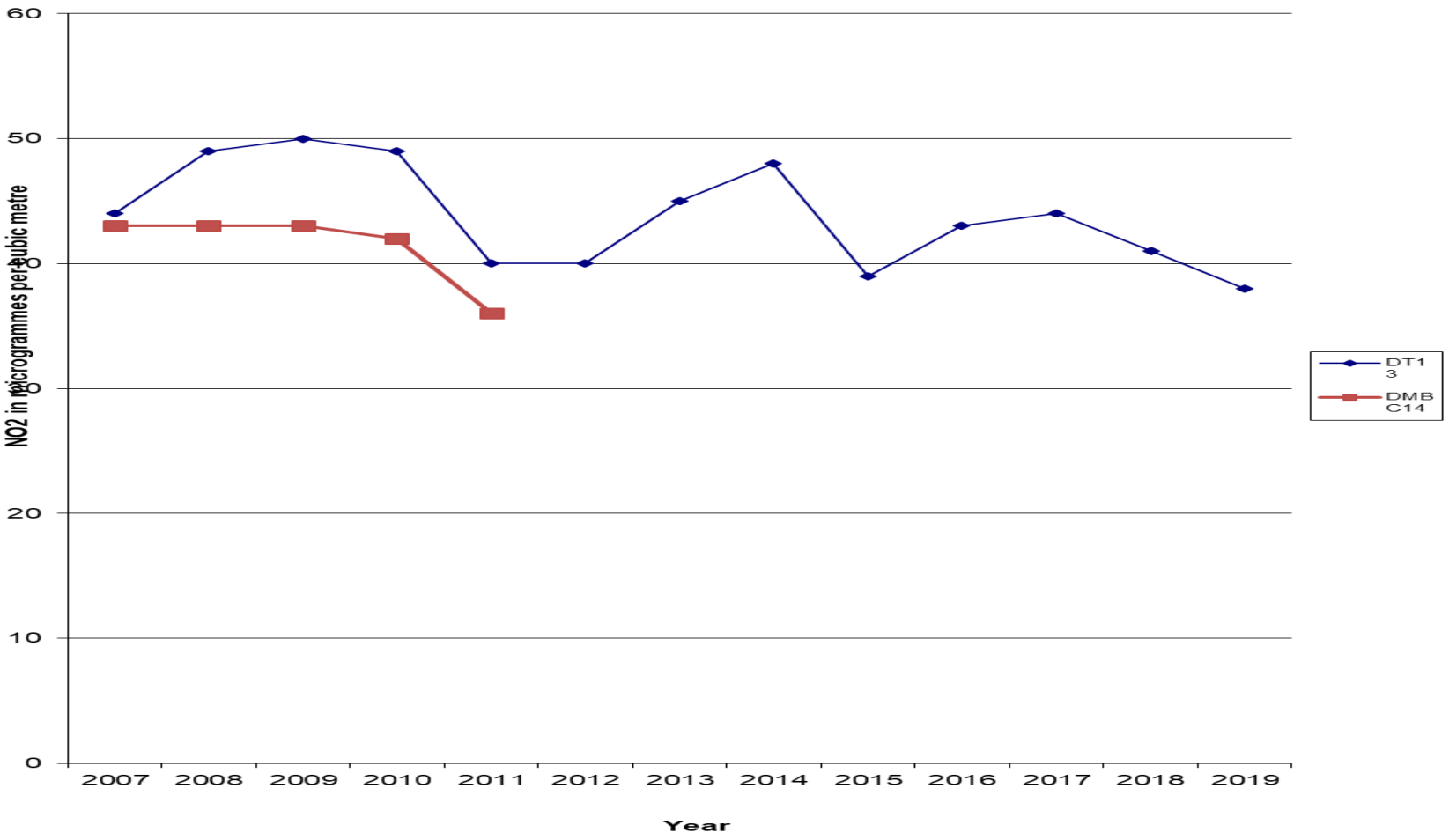


Figure A.6 – Trends in Annual Mean NO_2 Concentrations – AQMA5

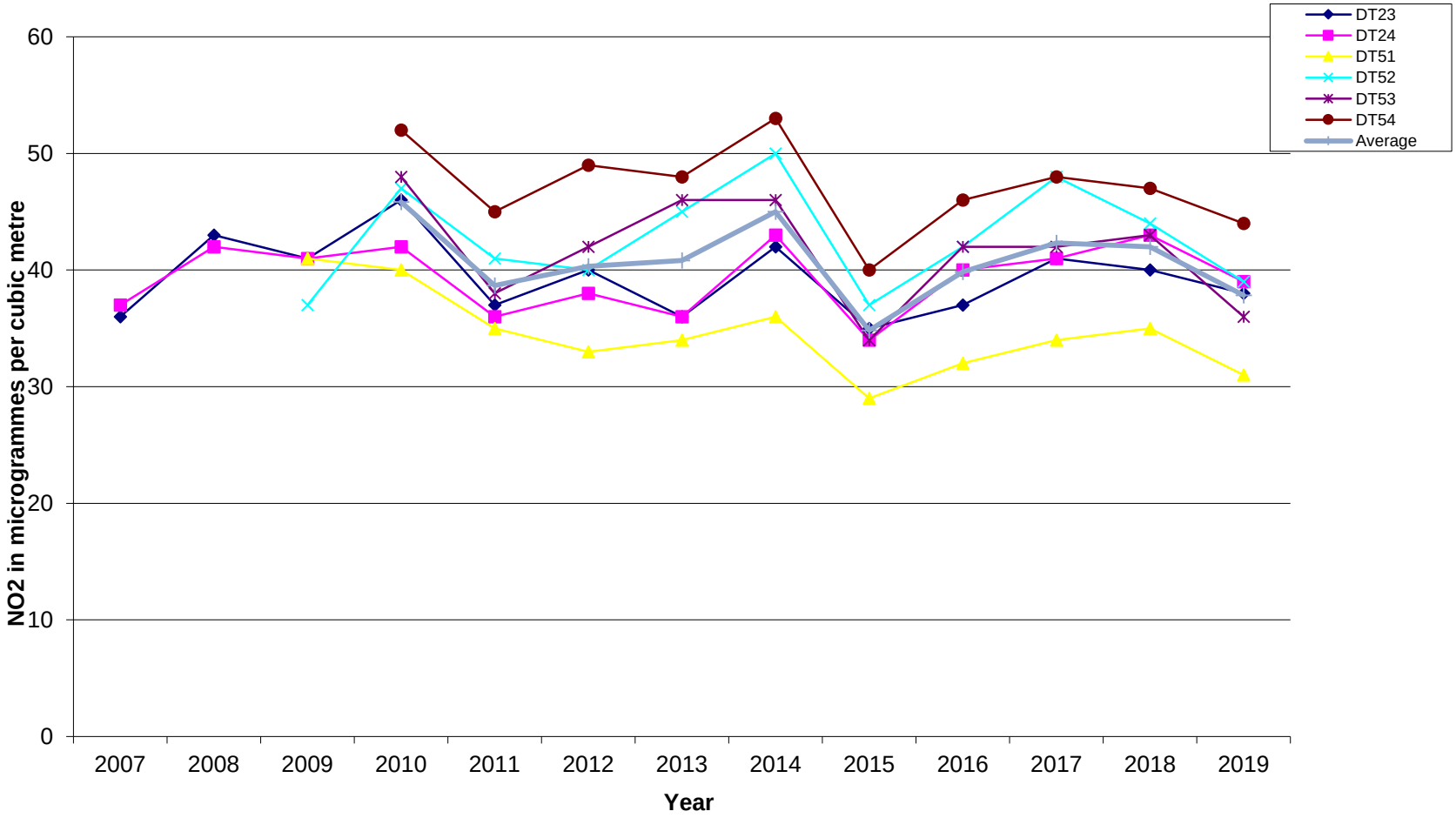


Figure A.7 – Trends in Annual Mean NO_2 Concentrations – AQMA6

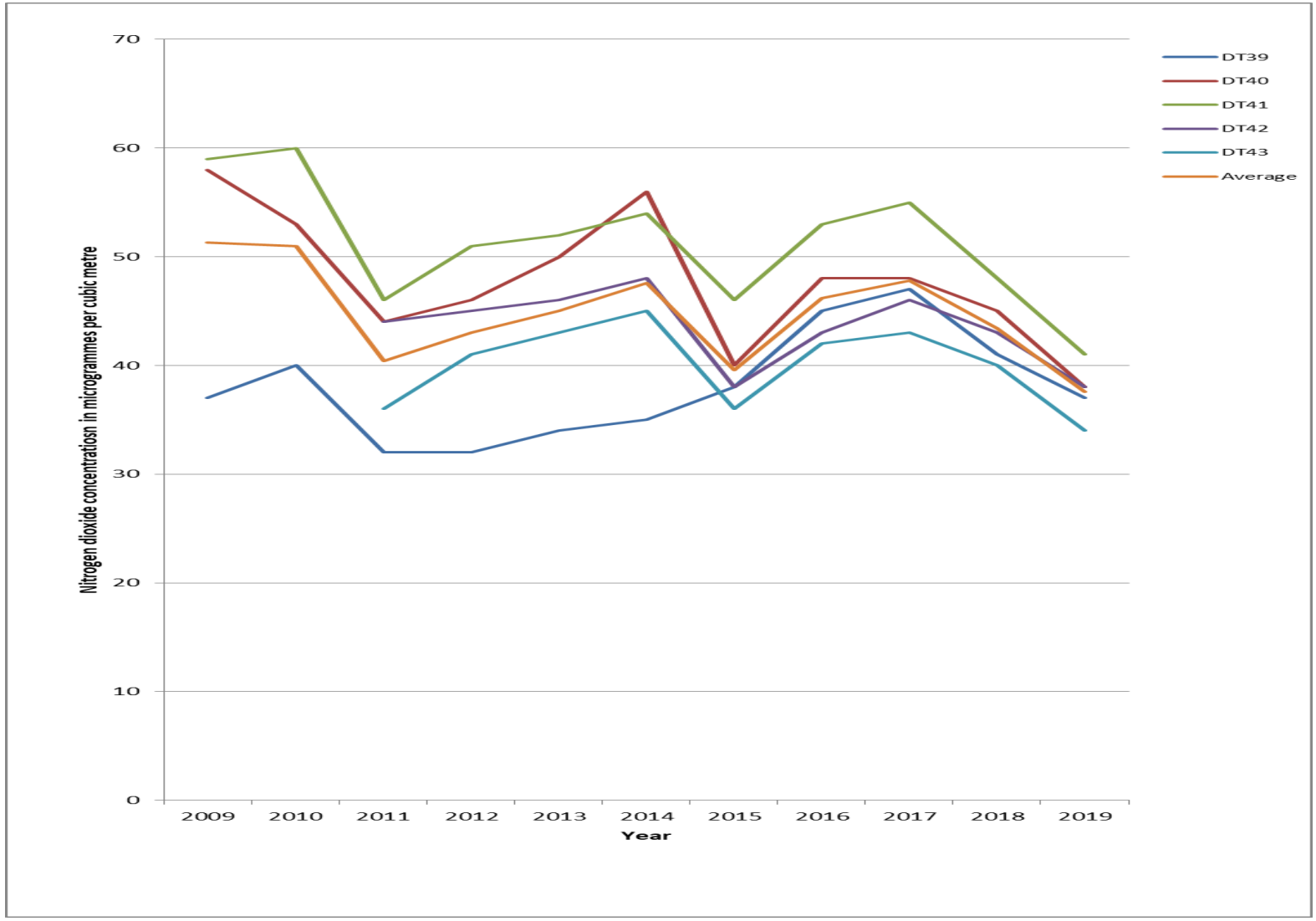


Figure A.8 – Trends in Annual Mean NO_2 Concentrations – AQMA7

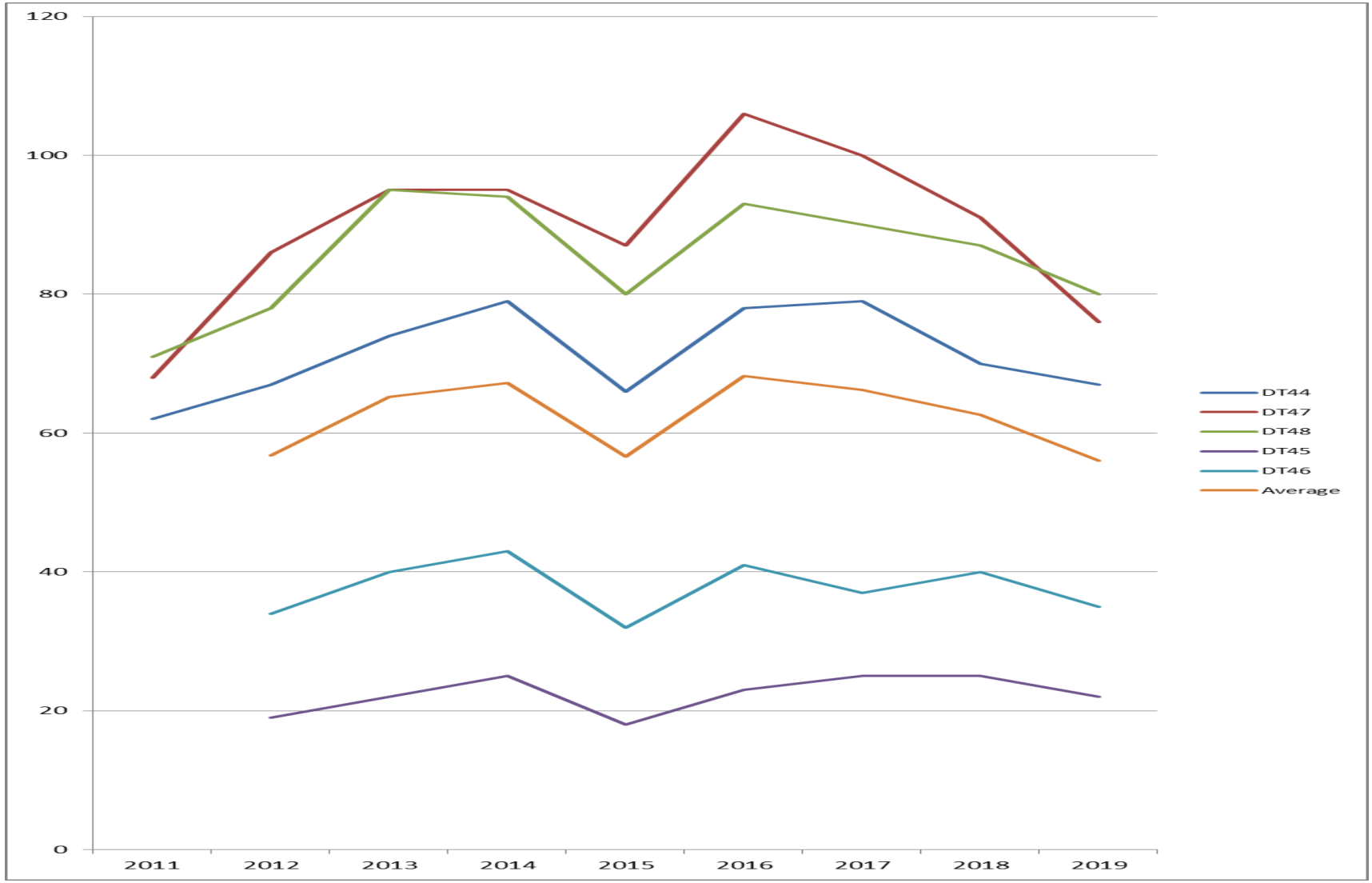


Table A.4 – 1-Hour Mean NO_2 Monitoring Results

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	NO_2 1-Hour Means > 200µg/m^3 (3)				
							2015	2016	2017	2018	2019
CM1	458027	402475	Roadside	Automatic	n/a	60	**0(184.5)**	0(45.5)	0 (93.6)	n/a	0 (48.7)
CM2	457669	403611	Urban Centre	Automatic	n/a	n/a	**n/a**	0(126.6)	0	0	n/a
CM3	454964	400745	Roadside	Automatic	n/a	77.1	**n/a**	3 (153.09)	0	n/a	0 (114)
CM4	462278	400111	Roadside	Automatic	n/a	n/a	**n/a**	0(21.5)	0 (114.4)	0	n/a
CM5	451438	398528	Roadside	Automatic	n/a	74	**0(101.0)**	0(62.1)	0 (115.6)	0	0 (57.8)
CM6	452185	410380	Roadside	Automatic	n/a	99.97	**0**	0 (61.3)	6	0	0

Notes:

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.**

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

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

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

Table A.5 – Annual Mean PM_{10} Monitoring Results

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	PM_{10} Annual Mean Concentration (µg/m³) (3)				
						2015	2016	2017	2018	2019
CM1	458027	402475	Roadside	n/a	91%	15.5 (5 months)	17.7	17.4	18.4	15.3
CM2	457669	403611	Urban Centre	n/a	no data	No data	18.5	17.7	16.7	no data
CM5	451438	398528	Roadside	n/a	88	18.7 (6 months)	19	18.8	21.8	17.4

☒ **Annualisation has been conducted where data capture is <75%**

Notes:

Exceedances of the PM_{10} annual mean objective of 40µg/m³ are shown in **bold.**

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

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

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

Figure A.9 – Trends in Annual Mean PM_{10} Concentrations

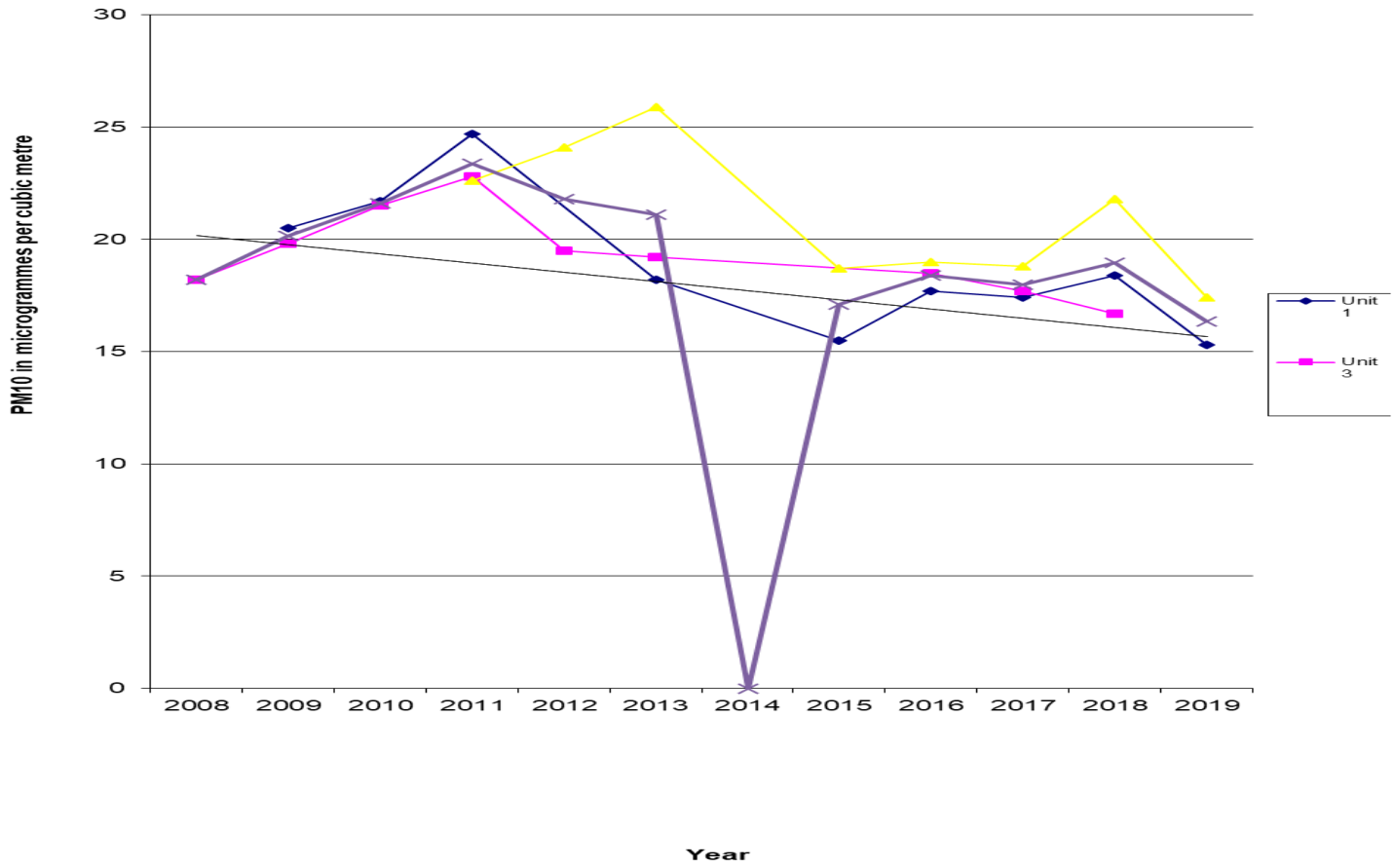


Table A.6 – 24-Hour Mean PM_{10} Monitoring Results

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	PM_{10} 24-Hour Means > 50µg/m^3 (3)				
						2015	2016	2017	2018	2019
CM1	458027	402475	Roadside	n/a	90%	0	0 (27.3)	3	2	0
CM2	457669	403611	Urban Centre	n/a	no data	No data	0 (32.4)	4	2	no data
CM5	451438	398528	Roadside	n/a	87	1 (28)	3	4	3	1

Notes:

Exceedances of the PM_{10} 24-hour mean objective (50µg/m^3 not to be exceeded more than 35 times/year) are shown in **bold.**

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

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

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

Appendix B: Full Monthly Diffusion Tube Results for 2019

Table B.1 - NO_2 Monthly Diffusion Tube Results - 2019

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	NO_2 Mean Concentrations ($\mu g/m^3$)														
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean		
															Raw Data	Bias Adjusted (0.97) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
DT1	456946	403763	37	NR	30	31	20	23	25	22	29	36	37	32	29	28	16
DT2	457308	403458	50	51	38	36	34	28	24	37	34	42	38	43	38	37	25
DT3	457952	403123	40	39	29	23	23	17	21	27	28	26	31	33	28	27	24
DT4	457975	403134	44	49	42	29	35	28	32	32	33	37	33	42	36	35	21
DT5	459113	402842	45	44	39	39	30	26	31	31	36	36	35	37	36	35	18
DT6	459533	402768	41	40	30	23	23	20	24	25	28	32	32	39	30	29	20
DT7	462899	399328	41	35	33	21	23	22	26	27	33	45	32	34	31	30	17
DT8	463023	399428	33	27	24	30	21	23	20	12	23	24	27	22	24	23	15
DT9	463888	398416	30	21	22	15	20	20	16	18	23	19	23	21	21	20	13
DT10	464879	399699	32	24	25	16	NR	19	20	16	22	25	26	24	23	22	14
DT11	461334	397977	35	27	22	NR	NR	NR	NR	NR	NR	NR	NR	NR	28	27	19
DT12	461164	398459	37	35	27	27	18	22	20	18	28	32	35	27	27	26	16
DT13	462242	400134	53	47	42	37	35	29	30	33	38	43	50	37	40	38	23
DT14	461362	400777	42	52	40	33	31	31	32	38	38	42	43	40	39	37	25

DT15	461875	400396															
DT16	460703	400559															
DT17	459947	401538															
DT18	460342	402108															
DT19	459745	402638															
DT20	459721	402650															
DT21	456164	401227	57	51	50	50	39	36	42	40	43	55	60	48	48	**46**	33
DT22	455679	401000	57	54	52	48	42	37	43	38	45	53	53	48	48	**46**	31
DT23	451457	398659	45	42	39	48	33	33	33	31	37	46	43	35	39	38	33
DT24	451419	398540	50	46	42	39	34	34	36	33	38	46	50	36	40	39	33
DT25	455635	401002	44	51	37	44	32	30	31	34	36	44	47	39	39	38	21
DT26	456130	401258	42	50	37	37	21	29	26	30	22	44	45	40	35	34	21
DT27	457010	402056	61	42	33	39	36	38	32	33	NR	46	51	NR	41	**40**	37
DT28	457022	402141	55	59	NR	60	48	47	44	42	22	60	67	48	50	**49**	**48**
DT29	464986	399697	23	22	18	13	12	12	NR	10	15	17	23	15	16	16	13
DT30	465719	400140	20	20	16	14	13	NR	11	12	18	19	22	17	17	16	14
DT31	466895	400405	17	18	18	9	10	9	11	11	16	17	21	18	15	14	14
DT32	467174	400372	22	15	20	12	12	11	12	10	18	18	21	19	16	15	15
DT33	468629	404336	15	12	11	6	6	3	5	5	9	NR	15	12	9	9	n/a
DT34	467755	408643	27	27	20	15	13	14	12	13	18	20	28	22	19	19	13
DT35	469056	407623	18	16	10	8	6	5	6	6	10	10	15	13	10	10	n/a
DT36	457615	403630	43	36	35	24	29	29	27	25	37	34	41	35	33	32	21
DT37	457379	403460	42	52	NR	39	35	38	35	34	42	42	46	37	40	39	33
DT38	464046	411818	23	22	17	14	13	12	10	11	15	18	19	19	16	16	13
DT39	452219	410224	48	43	48	26	30	32	30	35	41	39	44	38	38	37	37
DT40	452195	410302	48	46	46	31	34	33	32	31	41	42	47	40	39	38	38

DT41	452180	410377	55	45	55	29	36	37	32	39	42	45	48	42	42	**41**	35
DT42	452180	410402	51	49	48	30	33	31	29	34	38	36	47	42	39	38	22
DT43	452192	410389	45	41	45	24	29	28	29	30	35	33	44	38	35	34	22
DT44	448221	405303	74	79	70	66	67	65	70	65	67	69	74	64	69	**67**	**51**
DT45	447966	405303	27	30	22	23	17	17	17	18	22	24	29	24	23	22	22
DT46	448149	405296	37	37	35	51	33	33	33	26	32	35	46	32	36	35	35
DT47	448054	405319	95	93	80	80	66	94	73	63	69	75	87	62	78	**76**	**72**
DT48	448218	405320	94	77	84	81	93	81	82	87	80	81	83	63	82	**80**	**76**
DT49	451331	405219	51	48	42	36	35	31	33	36	32	33	43	35	38	37	37
DT50	468749	413300	52	43	44	33	37	33	28	33	35	40	49	44	39	38	37
DT51	451446	398582	40	37	37	29	23	26	25	27	29	35	41	37	32	31	19
DT52	451485	398514	46	48	42	40	42	36	34	31	36	37	48	42	40	39	34
DT53	451453	398632	48	45	38	51	39	34	33	30	23	26	37	44	37	36	36
DT54	451440	398652	54	50	47	41	41	39	41	41	41	48	58	45	46	**44**	**43**
DT55	451624	398690	41	41	34	30	26	22	24	29	28	32	40	38	32	31	31
DT56	448047	399880	54	NR	41	39	37	32	30	29	37	40	51	38	39	38	34
DT57	448004	399862	53	45	45	46	36	29	28	29	34	34	47	36	39	37	24
DT58	451824	405228	46	44	40	41	37	36	31	31	39	40	49	30	39	38	37
DT59	451514	405247	24	26	NR	18	NR	NR	11	18	21	22	26	23	21	20	20
DT60	457870	403839	51	42	43	34	31	33	31	31	36	39	47	38	38	37	36
DT61	457791	403767	50	45	43	28	30	35	31	32	33	38	50	43	38	37	37
DT62	457733	403740	58	57	53	41	42	39	35	43	39	47	64	43	47	**45**	**45**
DT63	457701	403579	60	NR	48	42	39	41	35	32	36	47	57	43	44	**42**	**42**
DT64	457345	403433	49	54	48	47	44	37	43	40	37	41	60	45	45	**44**	**44**
DT65	457995	402506	47	49	39	27	29	24	26	33	28	41	40	38	35	34	31
DT66	458142	402563	50	40	44	25	40	38	34	36	36	36	47	38	39	38	38

DT67	458259	402582	41	37	39	26	32	28	28	29	31	31	37	34	33	32	32
DT68	458923	402567															
DT69	457932	402448															

☒ **Local bias adjustment factor used**

☐ **National bias adjustment factor used**

☒ **Annualisation has been conducted where data capture is <75%**

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

Notes:

Exceedances of the NO_2 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 NO_2 1-hour mean objective are shown in **bold and underlined.**

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

(2) Distance corrected to nearest relevant public exposure.

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

Screening, Significantly Altered Emissions or New Developments

There have been no newly identified sources or significantly increased emissions in the Borough that have not been assessed. All new developments with the potential to impact on air quality provide an Air Quality Assessment and are required to mitigate any significant impacts. No developments have been granted planning permission that has significant emissions in 2019. All Planning Applications in Doncaster can be viewed at https://planning.doncaster.gov.uk/online-applications/

Diffusion Tube Bias Adjustment Factors, Precision and Accuracy

The tubes are supplied and analysed by South Yorkshire Air Quality Samplers. The tubes are prepared by spiking acetone:triethanolamine (50:50) onto the grids prior to the tubes being assembled. The tubes are then desorbed with distilled water and the extract analysed using a segmented flow auto analyser with ultraviolet detection.

The national factor for 2019 was 0.78 based on 1 study.

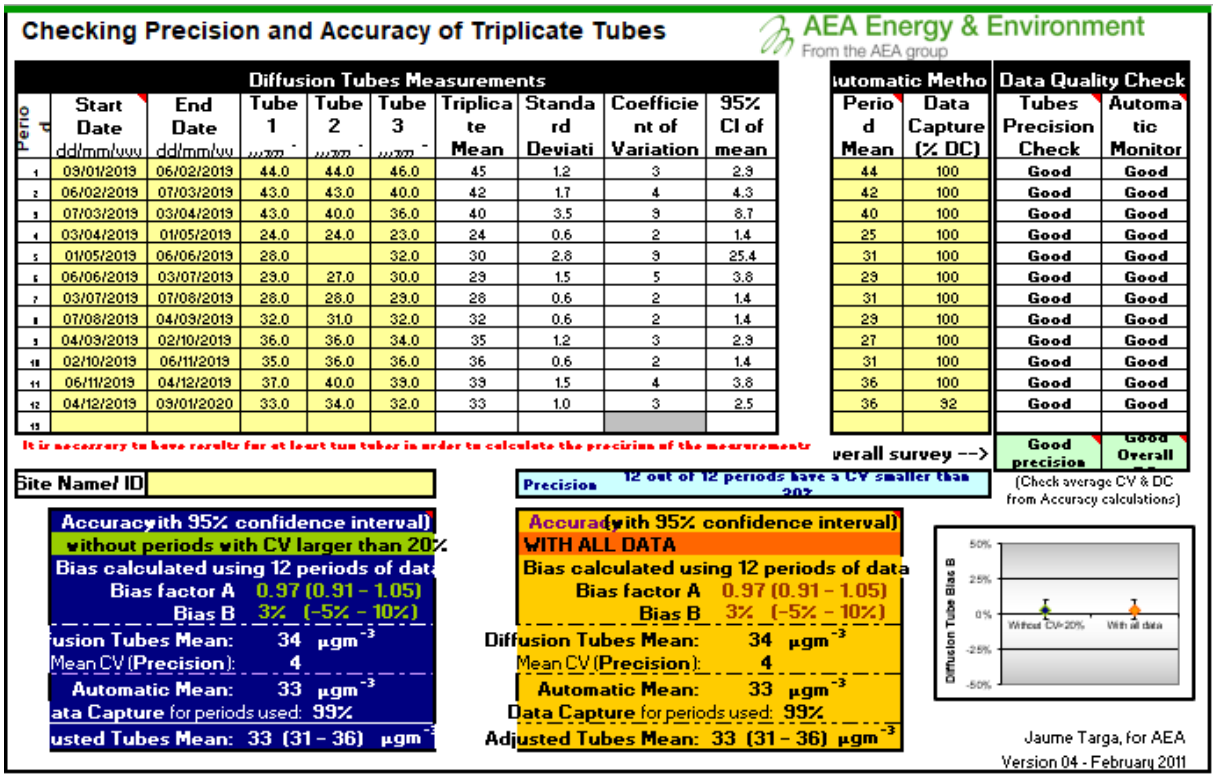
The results were downloaded on the 23 June 2020 from;
http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html

Discussion of Choice of Factor to Use

National factors had been used during review and assessment in Doncaster until 2014. The use of national bias had provided consistency, however on recommendations from previous review and assessment feedback a local co-location study was implemented.

The national factor is consistently low and with one of the sites being kerbside in London it was felt that this became unrepresentative.

In 2019 Doncaster Council conducted a co-location study within Doncaster. The results of the bias adjustment are as follows;



Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tubes Measurements

Period	Start Date dd/mm/yyy	End Date dd/mm/yy	Tube 1 µg/m³	Tube 2 µg/m³	Tube 3 µg/m³	Triplicate Mean	Standard Deviati	Coefficient of Variation	95% CI of mean
1	03/01/2019	06/02/2019	44.0	44.0	46.0	45	1.2	3	2.9
2	06/02/2019	07/03/2019	43.0	43.0	40.0	42	1.7	4	4.3
3	07/03/2019	03/04/2019	43.0	40.0	36.0	40	3.5	9	8.7
4	03/04/2019	01/05/2019	24.0	24.0	23.0	24	0.6	2	1.4
5	01/05/2019	06/06/2019	28.0		32.0	30	2.8	9	25.4
6	06/06/2019	03/07/2019	29.0	27.0	30.0	29	1.5	5	3.8
7	03/07/2019	07/08/2019	28.0	28.0	29.0	28	0.6	2	1.4
8	07/08/2019	04/09/2019	32.0	31.0	32.0	32	0.6	2	1.4
9	04/09/2019	02/10/2019	36.0	36.0	34.0	35	1.2	3	2.9
10	02/10/2019	06/11/2019	35.0	36.0	36.0	36	0.6	2	1.4
11	06/11/2019	04/12/2019	37.0	40.0	39.0	39	1.5	4	3.8
12	04/12/2019	09/01/2020	33.0	34.0	32.0	33	1.0	3	2.5
13									

Automatic Metho Period	Automatic Metho Data Capture (% DC)	Data Quality Check Tubes Precision Check	Data Quality Check Automatic Monitor
44	100	Good	Good
42	100	Good	Good
40	100	Good	Good
25	100	Good	Good
31	100	Good	Good
29	100	Good	Good
31	100	Good	Good
29	100	Good	Good
27	100	Good	Good
31	100	Good	Good
36	100	Good	Good
36	32	Good	Good
		Good precision	Good Overall

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

Overall survey -->

(Check average CV & DC from Accuracy calculations)

Site Name/ ID:

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 12 periods of data
Bias factor A 0.97 (0.91 - 1.05)
Bias B 3% (-5% - 10%)
Diffusion Tubes Mean: 34 µgm⁻³
Mean CV (Precision): 4
Automatic Mean: 33 µgm⁻³
Data Capture for periods used: 99%
Adjusted Tubes Mean: 33 (31 - 36) µgm⁻³

Accuracy (with 95% confidence interval):
WITH ALL DATA
Bias calculated using 12 periods of data
Bias factor A 0.97 (0.91 - 1.05)
Bias B 3% (-5% - 10%)
Diffusion Tubes Mean: 34 µgm⁻³
Mean CV (Precision): 4
Automatic Mean: 33 µgm⁻³
Data Capture for periods used: 99%
Adjusted Tubes Mean: 33 (31 - 36) 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

The most important factors to be considered when deciding which bias-adjustment factor to use are:

- Tube exposure time (in our case 1 month)
- Length of the monitoring study (one year)
- QA/QC of the chemiluminescence analyser (carried out locally be NPL)
- QA/QC of diffusion tubes (Air PT NO2)
- Siting of the co-location study (if roadside tubes are being factored it is important to use a roadside factor)
- Siting of other tubes in the survey

The locally derived factor in Doncaster is 0.97.

This compares well with other local South Yorkshire bias adjustment factors of

Barnsley 0.98

Rotherham 0.95

Sheffield 0.97

As you can see all the South Yorkshire BAF (2019) are very similar which gives confidence to the results. All SY Authorities use the same laboratory and participate in joint monitoring studies across South Yorkshire reporting to the Sheffield City Region Air Quality and climate group.

The data in the ASR has been corrected with the local factor as a more conservative bias.

PM Monitoring Adjustment

PM_{10} TEOM data for 2011 - 2019 were corrected to gravimetric equivalent using King's College London Volatile Correction Method (VCM) for PM_{10} as prescribed by TG(16)). These results may therefore differ from previous years, which were corrected using the factor as per the relevant procedure at that time. Comparison against previous years should therefore be viewed with caution.

Short-term to Long-term Data Adjustment

Annualisation was not required in this assessment as all relevant diffusion tube data capture was above 75%.

Distance Correction

The procedure and tools recommended in LAQM.TG(16) have been followed to distance correct all relevant diffusion tubes. In AQMAs and areas which are close to the objective the national background maps have been used in the calculations however in all other locations the local background factor from DT33 has been used. The calculations are available on request however a selection of the calculatiosn are shown below;

Enter data into the pink cells

Site Name/ID	Distance (m)		NO_2 Annual Mean Concentration ($\mu g/m^3$)			Comment
	Monitoring Site to Kerb	Receptor to Kerb	Background	Monitored at Site	Predicted at Receptor	
DT48	0.8	1.1	10.4	80	75.7	Predicted concentration at Receptor above AQS objective.
DT49	3.1	3.1	10.3	37	37.0	Predicted concentration at Receptor within 10% the AQS objective.
DT50	2	2.5	9.0	38	36.5	Predicted concentration at Receptor within 10% the AQS objective.

Annualisation

The annualisation of the automatic nitrogen dioxide data has not been possible, the data loss is not a result of a single calendar period but rather sporadic and spread throughout the year making it unsuitable for applying the relevant procedures as recommended in the technical guidance.

QA/QC of Automatic Monitoring

The QA/QC procedure consists of bi-monthly calibrations performed manually on-site by the Local Site Operator (Doncaster Council). Daily data checks are carried out remotely.

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

The last independent audit was carried out in 2019, the analysers tested were found to be satisfactory and any issues addressed.

Data is scaled, validated and ratified in house and includes removing erroneous data and applying relevant calculations in line with the technical guidance LAQM TG(16) to obtain the final data set.

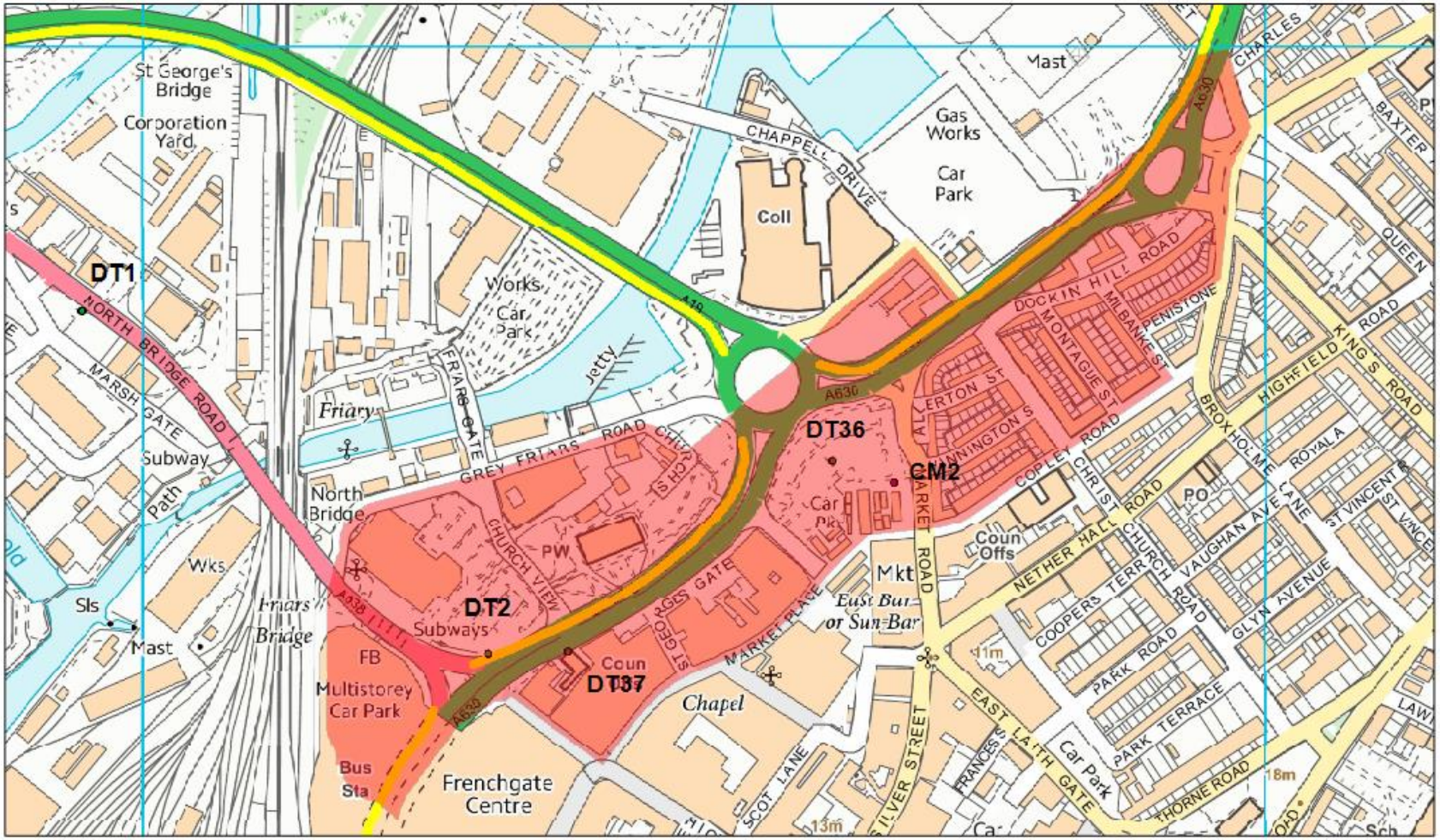
QA/QC of Diffusion Tube Monitoring

The Laboratory Performance in AIR NO2 Proficiency Testing scheme report covering 2019 lists South Yorkshire Air Quality Samplers as having 94% of samples rated as **Satisfactory.** In 2009 procedures have been amended so that the laboratory is in line with the harmonisation procedures.

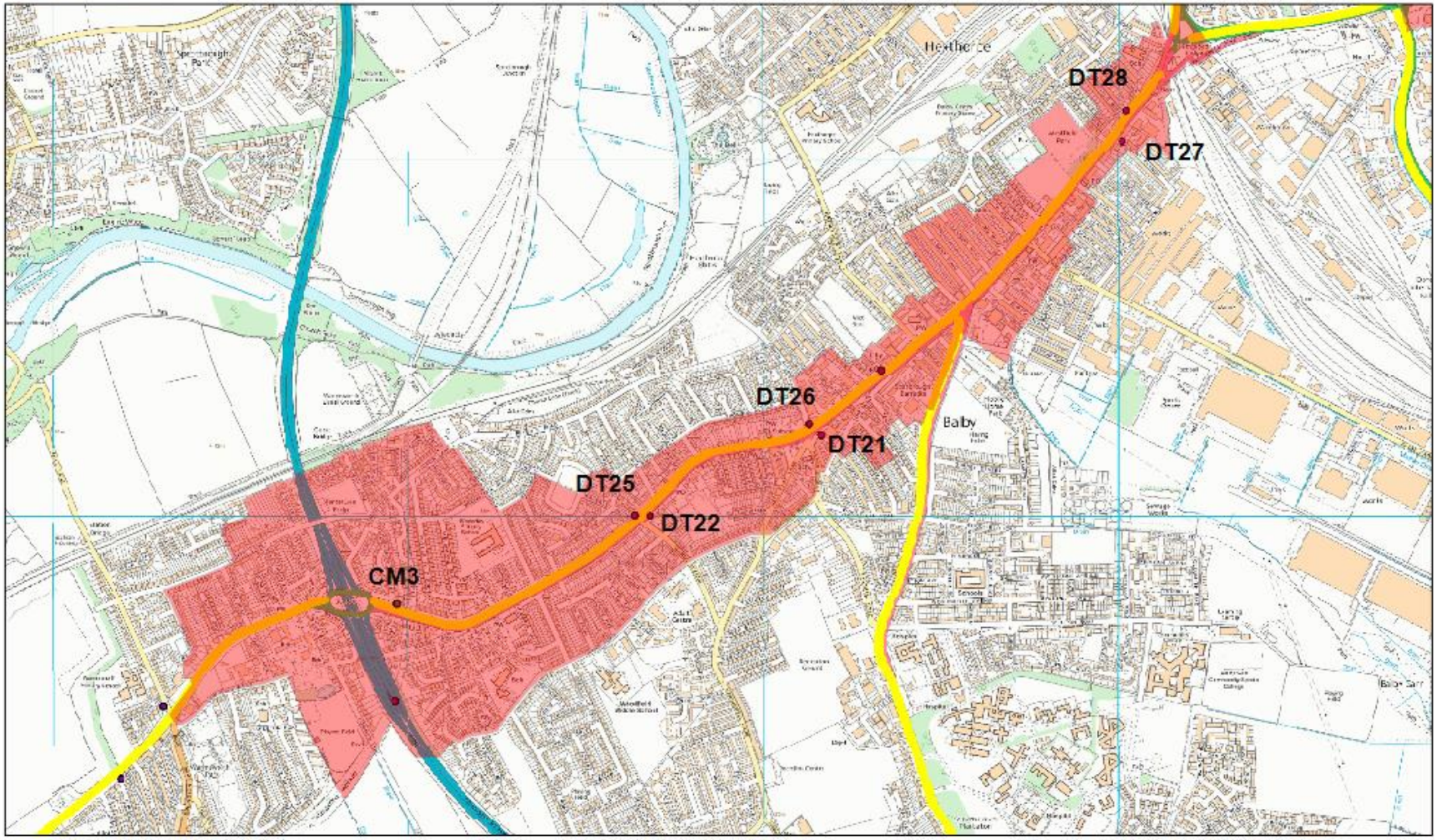
Precision was good throughout 2019.
https://laqm.defra.gov.uk/assets/laqmno2performancedatauptonovember2019v1.pdf

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

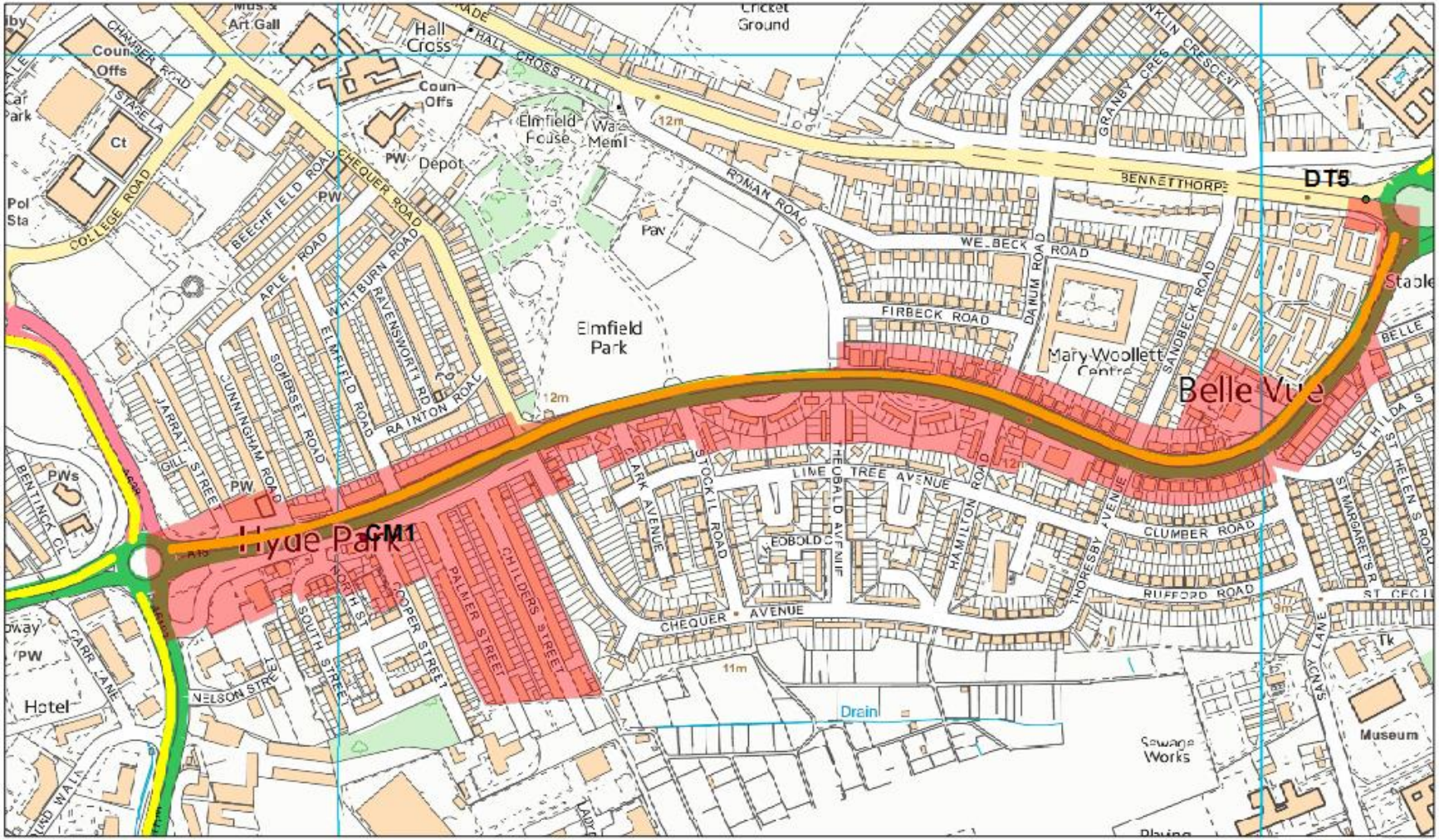
AQMA1



AQMA2

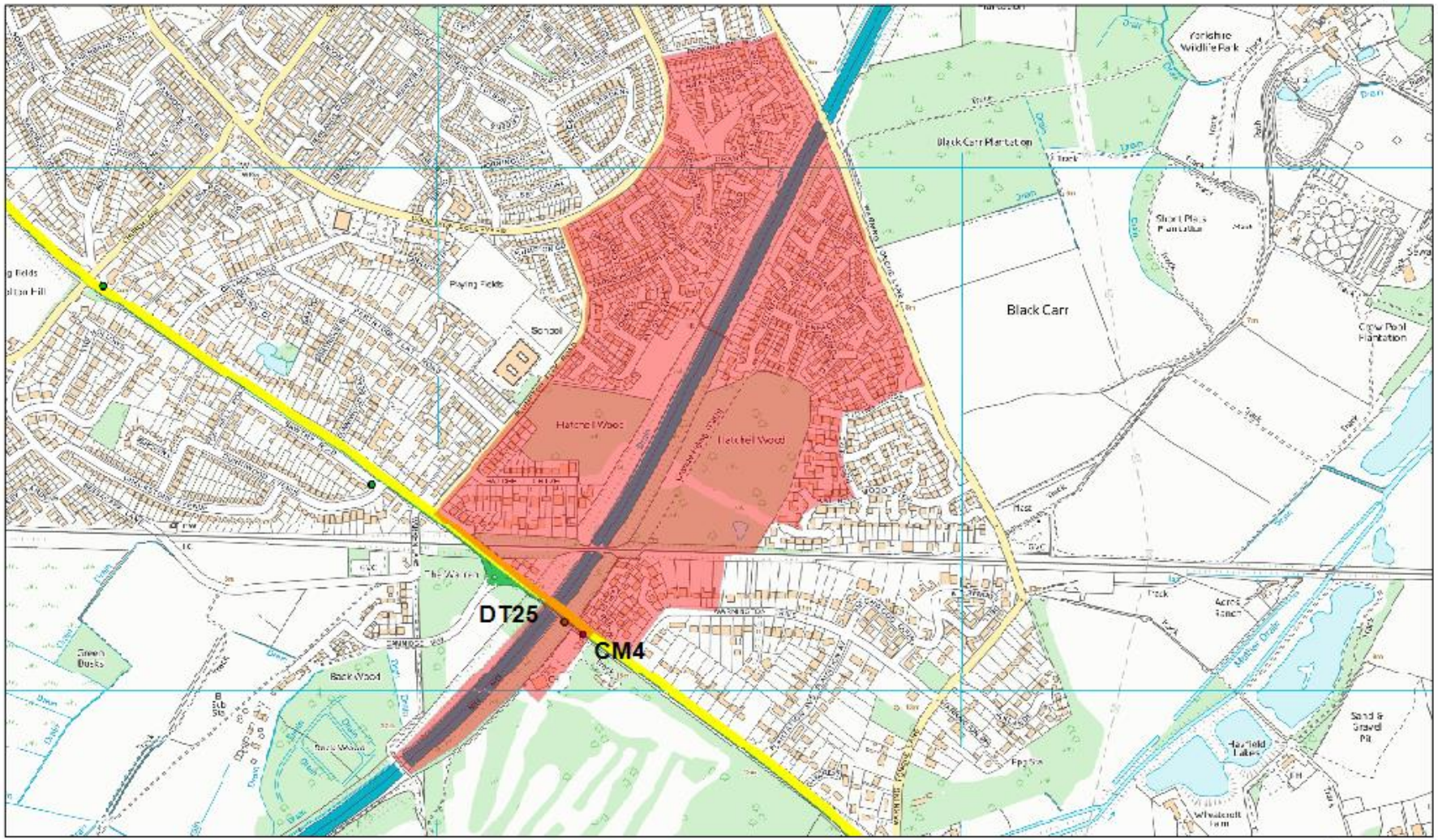


AQMA3

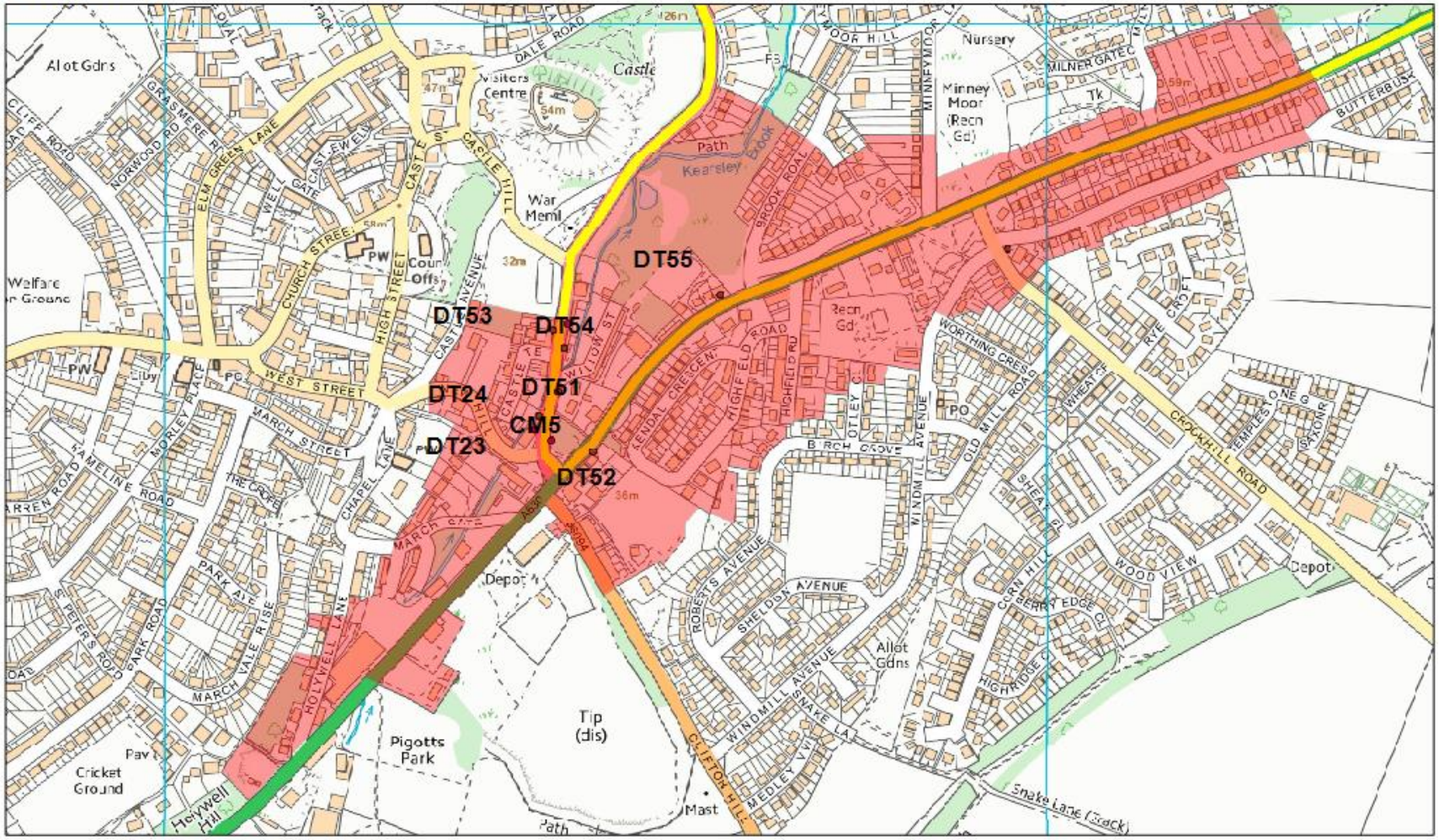


Doncaster

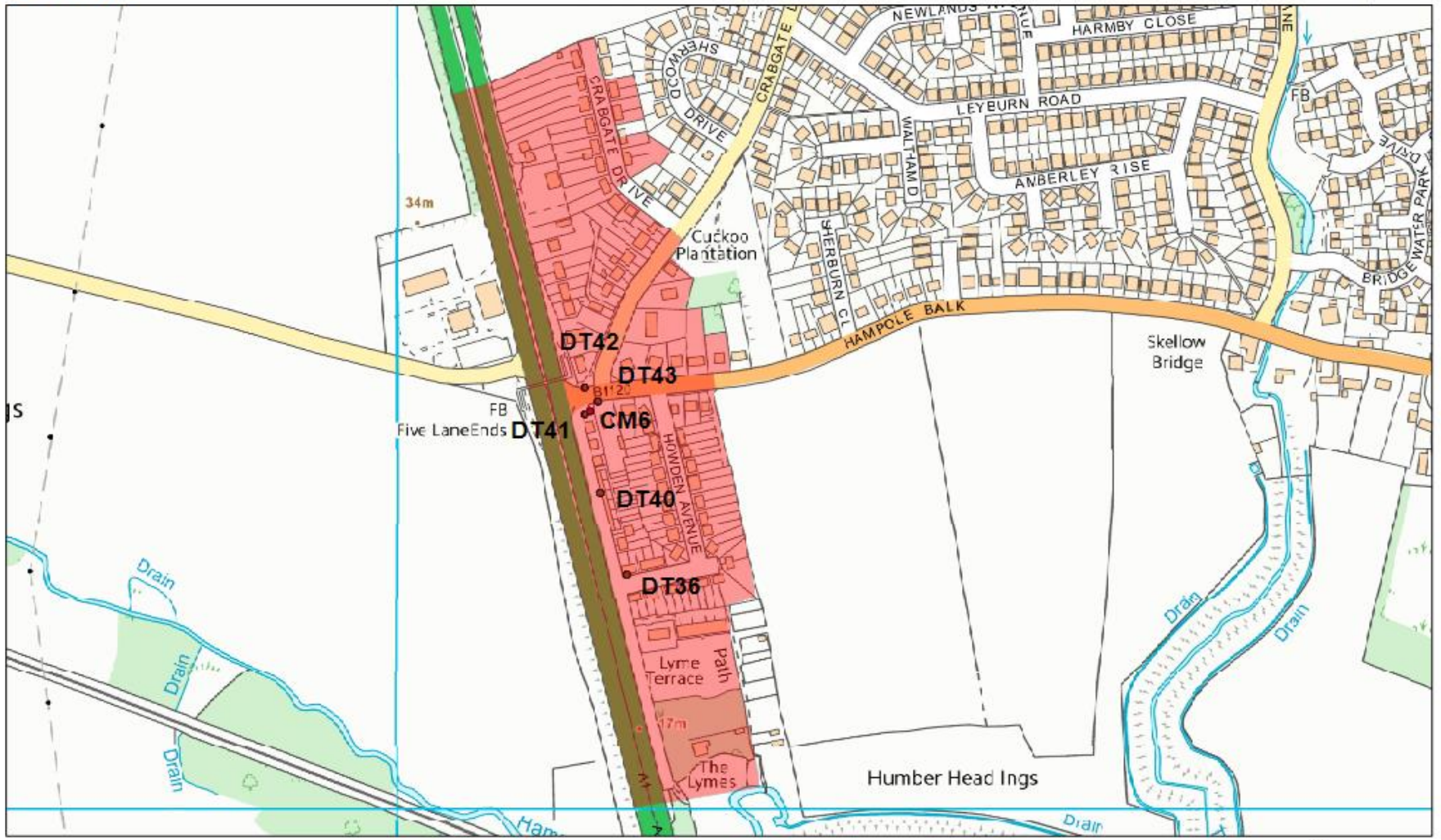
AQMA4



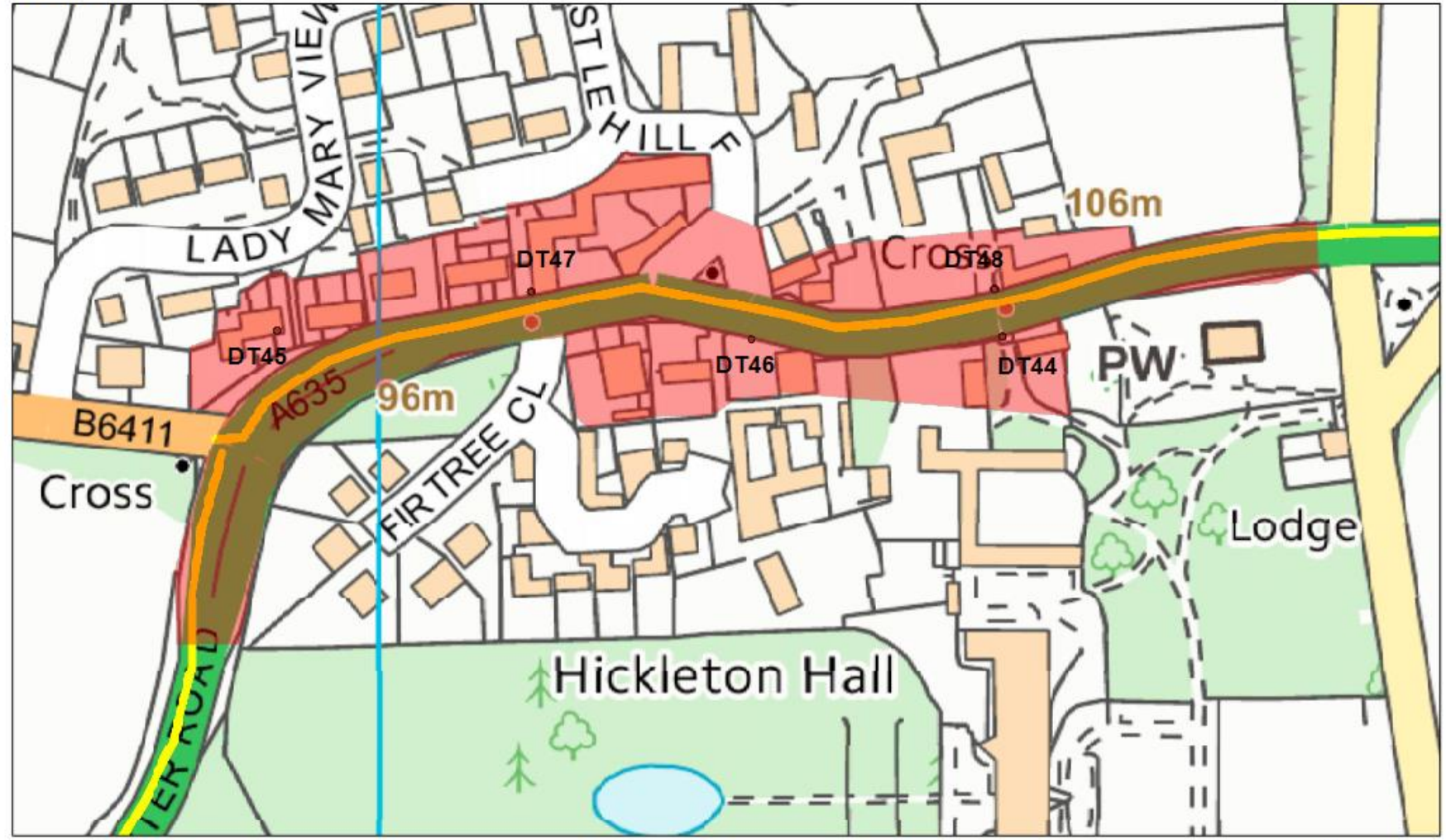
AQMA5



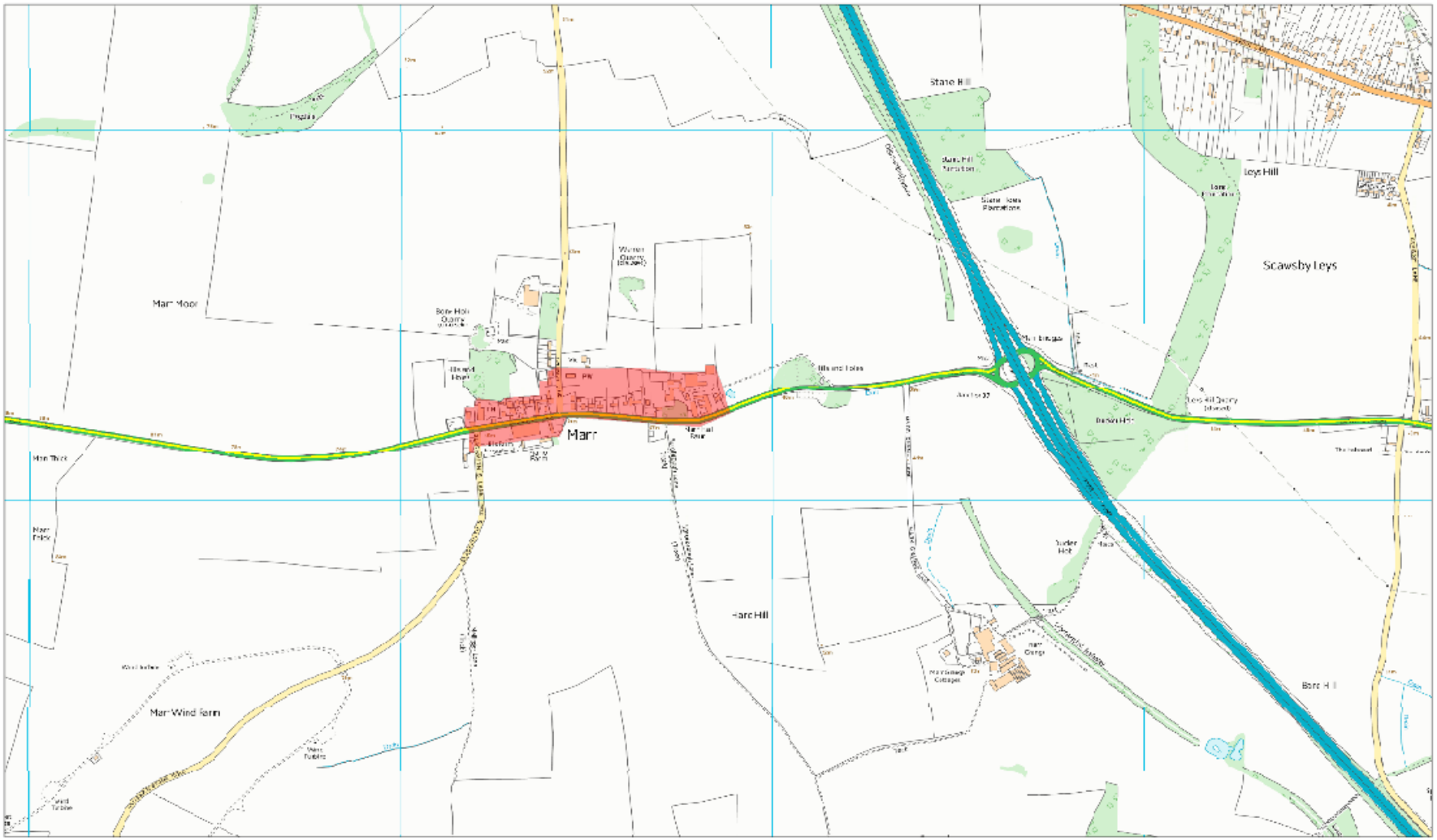
AQMA6



AQMA7



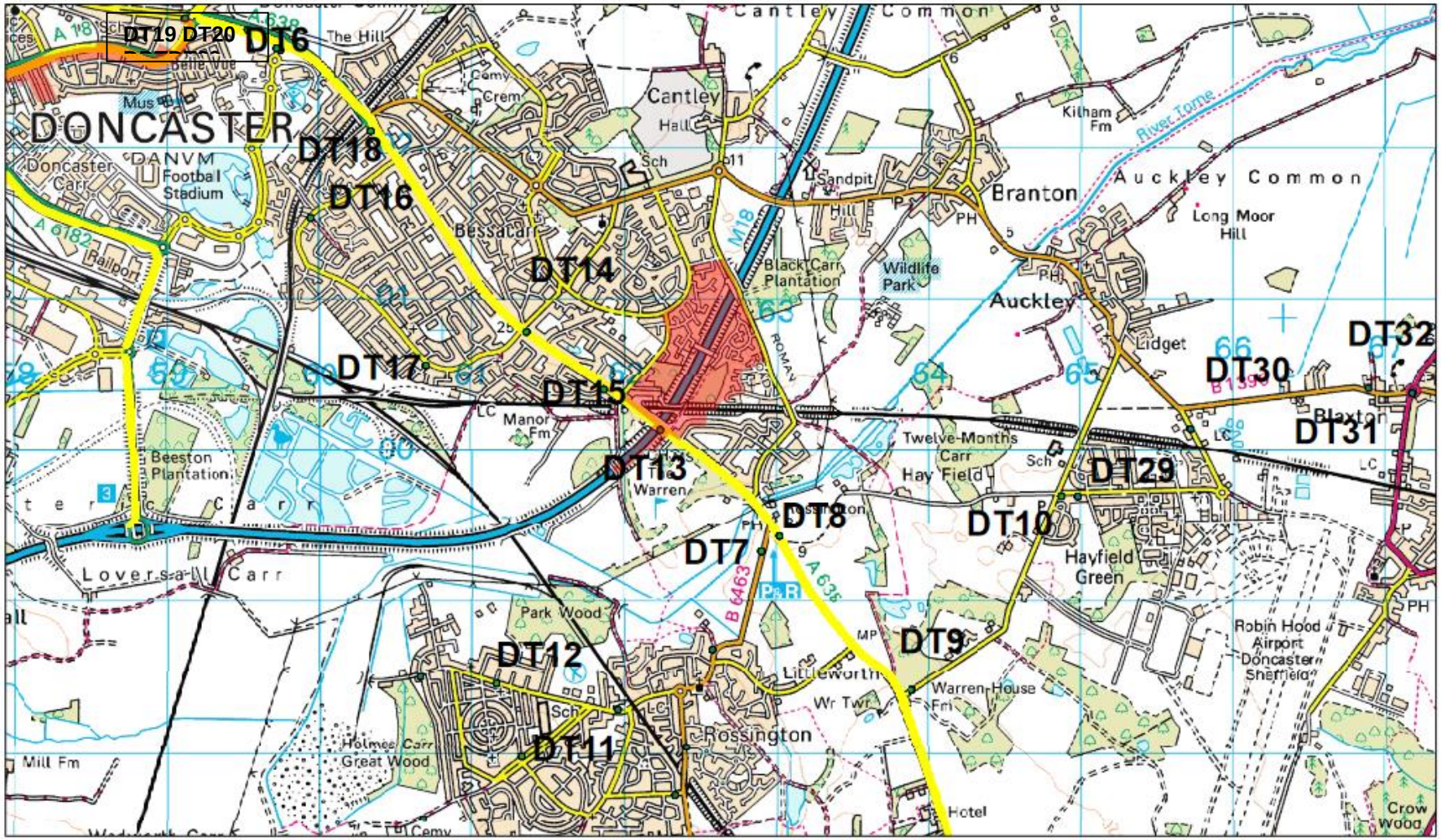
AQMA7A



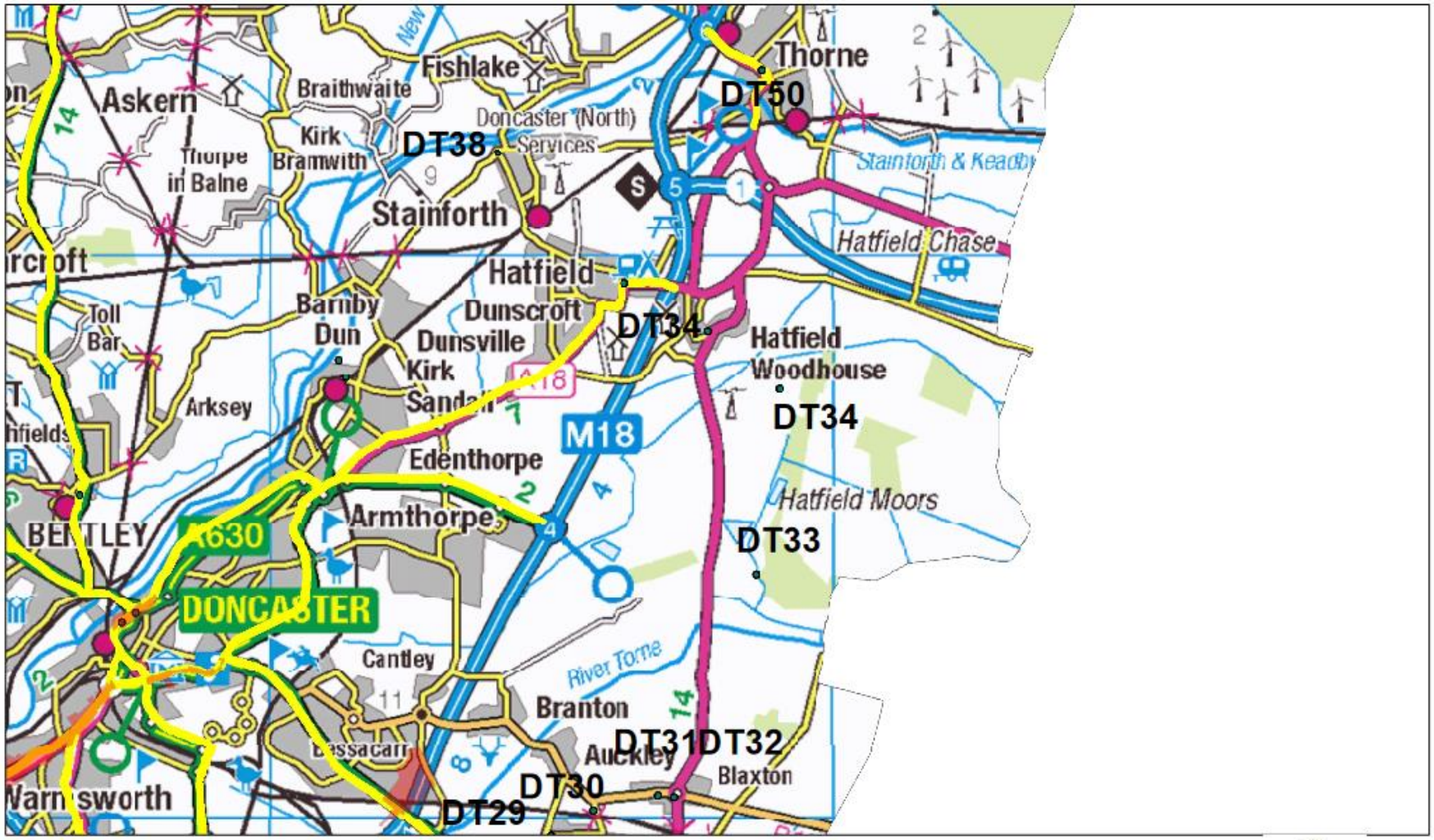
(c) Crown copyright. License Number 100019782. 2013. (c) Copyright GeoInformation Group 1997, 2002, 2005 and 2007.	Completed By : geraldinep	Map Reference: MARR boundary map LC	Date : 13/06/2019	Scale : 1:3,314

Doncaster

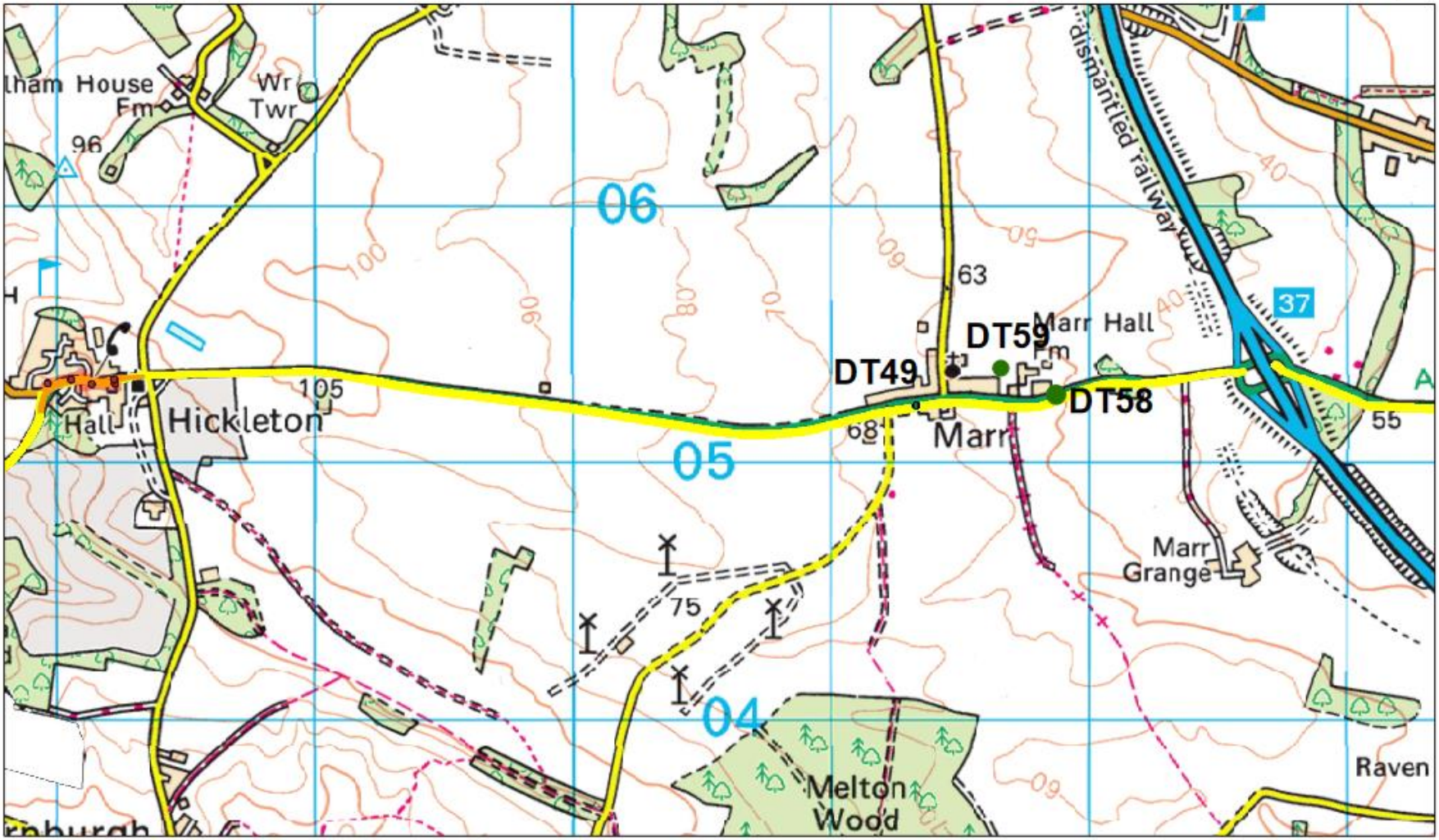
Non-AQMA Monitoring Sites



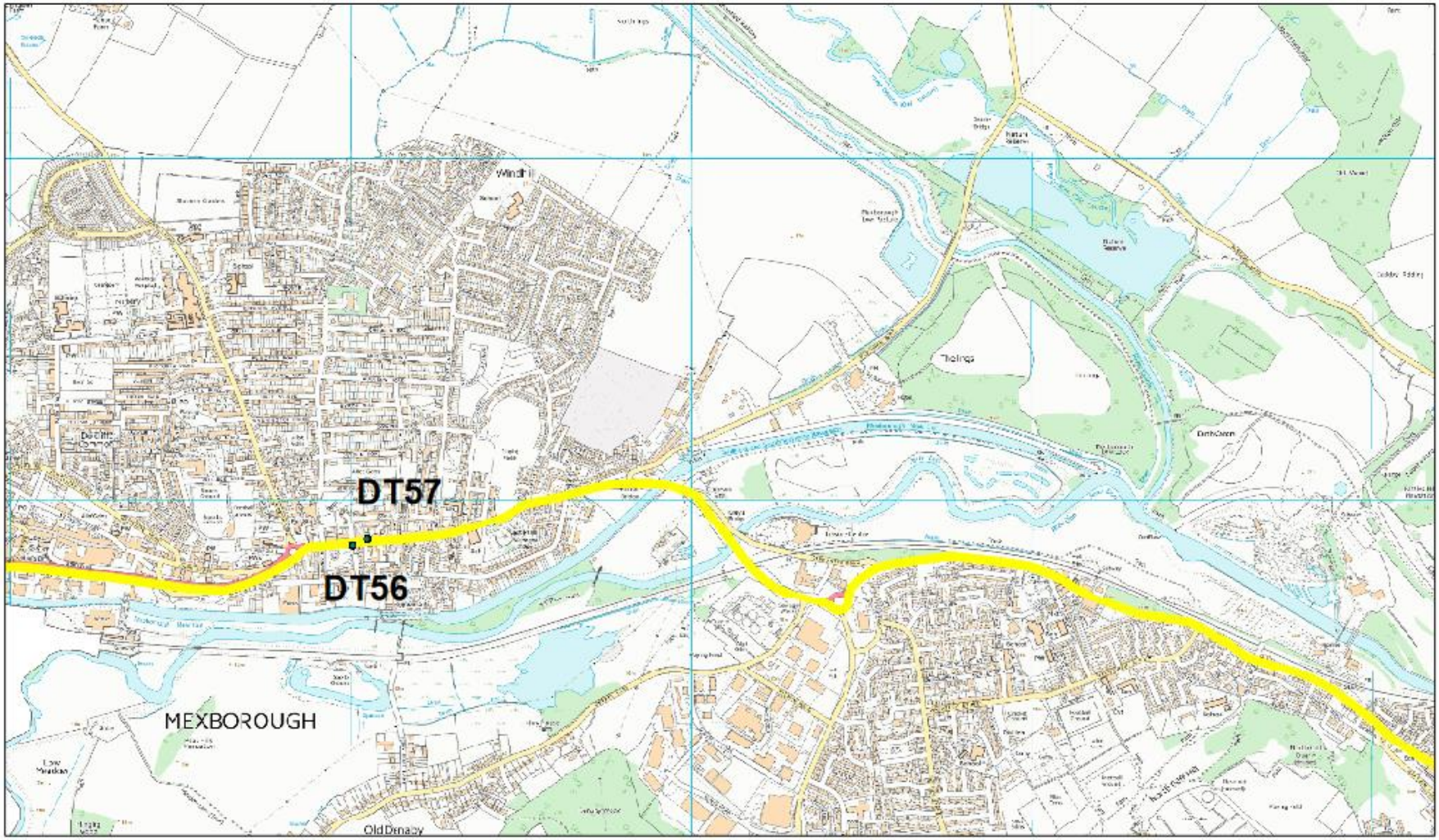
Non-AQMA Monitoring Sites



Marr Diffusion Tube Study



Non-AQMA Mexborough



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective[6]	
	Concentration	Measured as
Nitrogen Dioxide (NO_2)	200 µg/m^3 not to be exceeded more than 18 times a year	1-hour mean
	40 µg/m^3	Annual mean
Particulate Matter (PM_{10})	50 µg/m^3, not to be exceeded more than 35 times a year	24-hour mean
	40 µg/m^3	Annual mean
Sulphur Dioxide (SO_2)	350 µg/m^3, not to be exceeded more than 24 times a year	1-hour mean
	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean
	266 µg/m^3, not to be exceeded more than 35 times a year	15-minute mean

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

Appendix F: Air Quality Action Plan Further Information

Table F.1 – Public Health Action on PM2.5

Public Health & Air Quality Mapping – Doncaster		
Source	**Examples of action**	**Doncaster Position Statement/Actions**
Kings Fund: To reduce the negative impact of air pollution on health, local authorities can lead by example in their local area by (Kilbane-Dawe 2012):	implementing business engagement programmes to reduce air pollution	Potential through the inMotion business engagement.
	encouraging expansion of council-run income-generating car clubs	DMBC Transport Team currently promote South Yorkshire Car Share scheme on Council website.
	promoting zero emission 'last mile' delivery of as many goods and services as possible	Potential through procurement policy – to be developed using West Yorkshire example.
	organising 'eco-driving' training for taxi-drivers to encourage more fuel-efficient driving, and finding ways to reduce idling at taxi ranks	List of licensed taxi drivers provided to Business Eco-driving project – LSTF.
Invest in longer-term changes with potentially greater impacts, such as:	vertical roof exhausts for buses, and fitting diesel particle filters	CVTF – successful bid for emissions reduction measure on X78 bus route. On board trials showing a reduction of NOx emissions by 35%, roll out of equipment mid-July.
	rolling replacement of boilers with the least polluting models	Warmfront scheme – previously done – ask RS/KG
	ensuring that new buildings are air quality neutral	This could be developed through the new guidance being developed across Yorkshire. Pollution Control intends to adopt this approach.
	encouraging people to make more journeys by bike, through integrated and harmonised cycling networks.	Doncaster Cycling Strategy adopted December 2014. Doncaster Cycling Festival 2015
Warning/informing the public and professionals		In the event of high levels of air pollution, PH and Air Quality will work together to provide appropriate messages for staff and the public.
Defra Website	Local authorities can:- •Encourage schemes like ECOSTARS that recognise excellent levels of environmental and energy saving performance for the vehicles that operate within their area. •Introduce intelligent transport systems that maximise the efficiency of the highway network and also give real time information on traffic delays and journey times, car parking availability, and bus arrival times; together,	South Yorkshire developed the ECOstars scheme, LC sits on the steering group. There are 9 fleet operators based in Doncaster that are members of ECOstars including Doncaster Council. Transportation may have more detail on this but these actions have been available in Doncaster for some time.http://www.doncaster.gov.uk/Images/Air%20Quality%

	these allow people to make better informed travel choices and also reduce traffic emissions. See example (PDF, 54.3KB, 10 pages). •Incorporate air quality into planning considerations for new developments and refurbishments. See example (PDF, 410KB, 37 pages) •Promote energy efficiency and sustainable transport to residents and businesses in the borough and putting in the necessary infrastructure to enable people to reduce the emissions they produce. See example.	20Planning%20Guidance%20Addendum%20v12011537-110386.pdf InMotion LSTF scheme promotes sustainable travel to businesses in South Yorkshire. The LTP has funded energy efficiency measures and renewable energy on transport assets across South Yorkshire.
	Public Health professionals can also help to: • explain to their local population the impact of air pollution on health; • • tailor messages to target those members of the public particularly susceptible to air pollution and to raise understanding that improving air quality would help to improve healthy life expectancy and reduce early death from cardio-respiratory diseases; • work with others to promote initiatives to facilitate active travel (for example Healthy Schools Programmes, school travel plans; cycle to work schemes etc • raise awareness of the need to improve air quality through linking to other public health issues such as obesity and through working with Health and Wellbeing Boards to include air quality in Joint Strategic Needs Assessments and Health and Wellbeing Strategies.	Information provided on the DMBC website and SY Care4Air. Health advice provided is tailored to address some specific conditions. Public Health sit on the cycling strategy working group and Doncaster Active Partnership. Actively promote cycling and walking via Get Doncaster Walking/ Cycling campaigns & Change4Life campaigns. Doncaster Council currently manage a number of initiatives to encourage cycling including: Bike It Officer for schools, Cycle/Walk Boost, Bikeability training.
Other actions/Areas of Work		**Electric vehicles** – This is a South Yorkshire Scheme, managed by Sheffield City Council it aims to deliver; • a grant to lease hire an electric car or van for 1,2,3 or 4 years, and a standard charge point installation at their premises for circa 80 small and medium enterprises in South Yorkshire • In each South Yorkshire Local Authority there will be 2 fast chargers sited in off street council operated car parks • An Office for Low Emission Vehicles funded network of 20+ publicly accessible rapid chargers across South Yorkshire– these take recharge times down from 6/8 hours

		to 30 minutes to support these vehicles (and others) whilst out and about • Each vehicle will be tracked to measure miles driven, carbon saved and fuel savings. **Compressed Natural Gas Feasibility** A considerable amount of work has been carried out in South Yorkshire to establish the most suitable sites for compressed natural gas (CNG) refuelling stations. There are several excellent potential sites in South Yorkshire where the high pressure gas main is suitably close to the surface and close to the major road network. A full feasibility report is available and investor interest is increasing. The Council shall promote this work where appropriate. **Hydrogen Vehicle Trail** In partnership with ITM power a hydrogen re-fuelling site is to be brought back into use along with a Hyundai vehicle which will be available to Doncaster Council for trails over 3 years. The aim is to demonstrate the benefits and practicalities of hydrogen vehicles. The Council will feed into the trail and if suitable promote the vehicles in the local area.

Table F.2 – Air Quality Grant Final Report on ECO Stars

ECO Stars Fleet Recognition Schemes Programmes

Barnsley MBC: Final Report Air Quality Grant scheme 2017-18 (funding reference: 24619)

Introduction

Paragraph 4.8 of the Defra Air Quality Grant scheme 2017-18 (24619) states the following:

"By the agreed project completion date the Recipient will provide a final evaluation report to the Authority confirming that the grant outputs and outcomes have been delivered to a satisfactory standard and that the expected benefits have accrued or will accrue. The report should also highlight where expected outputs and outcomes have not been delivered and the reasons for this. As per paragraph 4.19, failure to submit a final evaluation report may result in the Authority requiring repayment of grant funding by the Recipient. ***The final report should set out a summary, the aims of the project, work actually undertaken, details of stakeholder engagement, focussing on whether the project was effective, compared to aims, achieved its objectives, milestones and whether the outcomes had an impact, and lessons learnt. The evaluation report should also include a review of the benefits and challenges of the chosen delivery model, whether this was a sole or Joint Proposal. Evaluation reports must cover activities for the grant period.*** *The type of evaluation will vary depending on the objectives set within individual projects, the outputs created and the outcomes envisaged. The final report must highlight any best practice or lessons learned."*

This final report subsequently follows the requirements of paragraph 4.8 above.

Supporting this evaluation are various technical reports produced by contractors appointed on behalf of Barnsley MBC to undertake this funded project. These should be read in conjunction with this report. Furthermore, at times within this report, the project is referred to us as a South Yorkshire project. Historically this scheme has included all four South Yorkshire local authorities (Barnsley, Doncaster, Rotherham and Sheffield), however the 2017/18 fund was restricted to non-Clean Air Zone authorities, so the reference to South Yorkshire is within the above context.

Summary

Barnsley MBC submitted a successful bid for Defra air quality 2017/18 grant funding in order to continue and further develop the ECO Stars fleet recognition scheme (https://www.ecostars-uk.com/). This bid (£125 0000) was in partnership with our neighbouring local authority Doncaster MBC with Barnsley acting as lead. The subsequent project consisted of four themes, these being:

- Continuation of the established ECO Stars Heavy Duty Fleet (HDV) fleet recognition
- Piloting of ECO Stars Taxi Recognition Scheme in South Yorkshire
- Development of an ECO Stars Non Road Mobile Machinery Scheme (NRMM)
- Development of a ECO Stars Future Business Model (FBM) Scheme

Following grant award, a procurement exercise was undertaken in accordance with Barnsley MBC financial regulations and contractors (scheme providers) were appointed. One scheme provider was appointed to develop the FBM, with another scheme provider to develop the remaining three themes of the project.

Due to delays with award of grant, the project deadline was revised, with the project subsequently being undertaken for the period 01.07.18 to 30.06.19. Following this, due to an unforeseen issue with the contractor appointed to deliver the three themes, the project was subsequently extended to 31.08.19, in order to account for re-profiling of the projects' work packages due to the contractor re-structure.

Furthermore, Barnsley and Doncaster initially required that the HDV fleet recognition theme be targeted towards those organisations located close to or within each of our AQMAs. Whilst the scheme provider made every endeavour to incorporate this particular recruitment approach, this proved ultimately challenging due to the complexities of fleet movements and ownerships associated with these organisations and subsequently identifying potential members to join the HDV scheme. This approach was eventually abandoned for more conventional modes of ECO Stars recruitment.

The scheme successfully delivered on recruitment of new members to the ECO Stars HDV Fleet Recognition Scheme; however re-assessments of existing members did not show the expected progress through the star rating of the scheme. This was due to re-evaluation of the scheme's star rating criteria just prior to project inception. This re-evaluation was undertaken to reflect more adequately the changing "EURO" composition of vehicles, which resulted in a temporarily more difficult progression through the EURO star ratings for existing members.

The pilot ECO Stars taxi scheme failed to deliver in meeting its recruitment targets. Despite extensive efforts to recruit by both the scheme provider, with assistance from the local authorities, the number of taxi operators joining the scheme was disappointingly low, although actual recruitment of taxi vehicle numbers in Barnsley was better, due to sign-up of one of the major local operators. The reasons for this poor response to recruitment are discussed further in this report and in detail within the final report from the scheme provider. However, we believe that we have learnt some very valuable lessons, which can be used going forward when engaging with the hackney and private hire community in order to secure emission reduction going forward, either as part of a revised ECO Stars taxi scheme, or engaging with this community in order to secure emission reduction by other means.

A study evaluating the feasibility of creating a Non Road Mobile Machinery (NRMM) ECO Stars scheme was undertaken, following the highlighting of this sector within the Government's Clean Air Strategy as an increasingly important source of oxides of nitrogen (NOx) and particulate emissions (PM) within urban areas in particular. The study considered the use of NRMM on construction sites and investigated complications with supply chains and sub-contracting of work onsite. The findings of this study concluded that it would be challenging to develop an ECO Stars scheme based on the voluntary nature of ECO Stars. The study also considered a scheme based on the emission "staging" of NRMM. Whilst the study indicated that it would prove challenging to develop an ECO Stars scheme for NRMM, we believe that this study is an important piece of work which can contribute towards Defra's evidence base, as well as gain greater insight of the complexities of these issues, as it considers how these emissions can be most appropriately tackled.

ECO Stars has reached a critical mass in terms of its operational reach and funding model where it can clearly demonstrate its value. However, it needs to change its organisational shape to ensure that it can continue to grow and support the national and local clean air strategy properly. The focus on achieving its principal objectives through education of its members is bearing exemplary outcomes. However, in order to provide consistent benefit to an ever-growing beneficiary network it will need to carefully consider the organisational structure and bi-directional value flows very carefully.

In terms of its critical mass, this project commissioned a Future Business Model (FBM), which considered how the ECO Stars suite of schemes can be developed in future and become more self-funding by developing a membership schemes based on a proportionate charging regime. This would enable ECO Stars be less subject to the uncertainties surrounding annual funding bids. Following completion of this work, local authorities are now actively considering how this work can be taken forward. The benefits of a membership model could include:

- **Stable Cash Flow**: If members pay monthly subscriptions, cash flow and available revenue could be sustainable.

- **The Ability to innovate**: Through the provision of high-value resources (workshops, events, certification etc.) to multiple members, this could create a community of like-minded organisations, with common aims and objectives.

- **Access to Exclusive Data and information**: Organisations that build a community are able to track member's behaviour. Understanding this data presents an opportunity to fine-tune the membership model to gain more members, reduce costs, and increase member retention.

- **Additional Revenue Opportunities**: As well as member subscriptions, members can also be sold additional services and may be willing to pay for events. Advertisers may be interested in accessing the membership via website

Aims of the work

The aims of the project were:

- To further reduce emissions from the local heavy duty fleet sector by recruitment of 20 new operator members and liaise with existing members to re-assess their fleets where appropriate, by using a well-established scheme with known benefits to operators as well as emission reduction benefit

- To pilot an ECO Stars taxi scheme in Barnsley and Doncaster, including initial recruitment of local taxi fleets to the scheme

- To undertake a feasibility study into developing a NRMM ECO Stars scheme

- To develop a Future Business Model

- To disseminate as widely as possible the experiences gained and lessons learnt from this project

- To roll out Enhanced Road Maps when appropriate.

- To enhance the long term sustainability of ECO Stars, with ongoing development of the scheme and support for operators

Following appointment of the scheme providers, the following deliverables were agreed. These assist in meeting the above aims, and would be undertaken and completed over the lifetime of the funded project.

Scheme	Deliverables / Outcomes
ECO Stars HDV scheme	Recruitment of 20 new members to the HDV Fleet Recognition Scheme concentrating on those operating in areas of air quality concern in Barnsley and Doncaster including communications Contact 100% of current scheme membership and conduct an reassessment as required Provide evaluation report for HDV Fleet Recognition Scheme
Pilot ECO Stars Taxi scheme	Establish scheme and recruit 10 new members to the ECO Stars Taxi Fleet Recognition Scheme Provide evaluation report for Taxi Recognition Scheme
NRMM feasibility study	Draft report for NRMM commission
Future Business Model	Draft report for FBM commission

Work undertaken

Work undertaken is discussed in detail within the reports supplied by the contractors who undertook this work. The below table summarises the work undertaken:

Scheme	Work undertaken
ECO Stars HDV scheme	Recruitment of new members consisting of commercial vehicle operators who were either based in Barnsley and/or Doncaster or with a daily operating footprint in the area. The new members consisted of 12 haulage operators, 8 service providers and 1 coach operator. This was achieved by working within local air quality hot spots, along with national contacts and liaising with 3rd parties Every member of the Scheme based and/or operating in the Barnsley and Doncaster areas was re-engaged to determine whether changes and improvements made to their fuel management processes had been made since last engaged, along with upgrade of the fleet profiles

	A supporting marketing and communications campaign
Pilot ECO Stars Taxi scheme	Liaison with local authority licensing officers and procurement officers to determine the most effective engagement with local taxi operators Engagement with taxi operators by telephone, e-mail, office and taxi-rank visit, and subsequent recruitment Assisting with engagement by local authority Licensing and Procurement officers to encourage uptake of the scheme A supporting marketing and communications campaign
NRMM feasibility study	Engagement with local construction sites to review use of NRMM and typical operators, users and suppliers Review of existing information Provision of final report for National ECO Stars Steering Group to consider next steps
Future Business Model	Engagement with stakeholders including ECO Stars partners (local authorities), providers and members. Review of current scheme and develop a new business model Provision of final report for National ECO Stars Steering Group to consider next steps

Stakeholder engagement

Stakeholder engagement is summarised in the above table and in more detail in the service provider reports

Aims, objectives, milestones and outcomes

The below table summarises the final outcomes of the project against the projects aims, objectives, milestones and outcomes.

Scheme	Deliverables / Outcomes	Actual Outcome	Comments
ECO Stars HDV scheme	20 new members to be recruited 100% of existing members to be re-assessed	21 new members recruited 100% of existing members to be re-assessed	No change in star rating following re-assessment of members due to change in star rating criteria to reflect current fleet composition. In early 2018, star rating criteria was revised to include low and/or zero emission vehicles in the candidate fleet in order to gain the highest, 5 Star, membership rating.
Pilot ECO Stars Taxi scheme	10 members to be recruited to this pilot scheme	3 members actually recruited (56 companies / organisations contacted / engaged)	The non-attainment of the taxi outcome is discussed in more detail below and within the service providers' final report
NRMM feasibility study	Engagement with local construction sites to review use of NRMM and typical operators, users and suppliers Provision of final feasibility study report	26 construction sites visited and operators engaged with Report completed	The conclusions of the report are discussed in the lessons learnt section below
Future Business Model	Provision of final report for National ECO Stars Steering Group to consider next steps	Report completed	The conclusions of the report are discussed in the lessons learnt section below

Lessons learnt

ECO Stars HDV scheme

At scheme inception, Barnsley and Doncaster officers requested that recruitment would be targeted within identified areas of air quality concern, such as AQMAs, and areas where NO_2 concentrations are known to be relatively close to the annual average objective. Consequently, the service provider concentrated on these areas in both Boroughs, which involved engaging with businesses in these areas in order to ascertain the fleet operators who supplied these businesses as a prelude to recruitment.

This proved to be challenging as these businesses had more complex supply chains then originally perceived, which made identification of fleet operators difficult, as these businesses had complicated contractual issues with suppliers. Consequently, after an approximate 2-3 month period of the contract following this model of recruitment, this was abandoned and recruitment reverted back to conventional methods. This proved successful as recruitment targets were subsequently met and slightly exceeded.

ECO Stars Pilot Taxi Scheme

Recruitment failed to meet targets, despite significant local authority officer time, as well as additional service provider resource being allocated to taxi recruitment. Several reasons are given for this, primarily dealing with operator perception of the scheme. In order to overcome this perception, the contractor proposed that in future *"the taxi scheme be continued at a reduced scale, allowing operators to be assessed, without fleet listings, and being classified as members only without a Star rating."*

Nevertheless, there was successful recruitment with one of the major operators within Barnsley and this successful engagement may prove useful in the future as the Council seeks to promote the use of low emission vehicles.

Non-Road Mobile Machinery (NRMM)

The service provider undertook an extensive review of local site operations with regard to use of NRMM, as well as significant background research. The study highlighted the complexities of operation of NRMM and how a potential ECO Stars scheme could attempt to accommodate this complexity, which is in part due to ownership of NRMM onsite and general operations onsite (e.g. use of contractors, sub-contractors etc.). We therefore conclude that developing an ECO Stars NRMM scheme would be very challenging; however we believe that this study is an important piece of work which can contribute towards Defra's evidence base, as well as gain greater insight of the complexities of these issues, as it considers how these emissions can be most appropriately tackled in future.

Future Business Model (FBM)

ECO Stars started in 2009 in South Yorkshire and recently celebrated its 10th Anniversary. Whilst the success of the scheme is demonstrated by the numbers of operators and vehicles signed up to the scheme in the United Kingdom (570 operators as members and approximately 76000 vehicles registered to the scheme), the scheme has not been able to develop to its full potential due to annual uncertainties with securing appropriate funding from various sources.

The FBM study proposes a potentially more financially sustainable way forward for ECO Stars, established on a fee based membership scheme, the costs of which would be offset by the benefits of the scheme. In addition, the FBM report maps out alternative ways of delivering ECO Stars, with the proposal for a central organisation to manage the scheme, including negotiation and management of all contracts; to manage the wider development of the scheme (including marketing and promotion); and ultimately develop a more inclusive and engaged scheme, which can subsequently deliver further and more widespread emission reduction.

The ECO Stars Steering Group is currently considering our next steps, following completion of this study.

Subsequently, further funding is been sought in order to develop and then undertake a transition from the current ECO Stars funding model to a future one, based upon (in part) member membership subscription. Officers from Barnsley MBC are subsequently happy to discuss this work with Defra and JAQU, should this be required.

Review of benefits and challenges

This project has demonstrated that the ECO Stars HDV fleet recognition scheme continues to progress, and has scope to develop further, bringing further emission reduction PM and NOx, as well as CO_2. As indicated in the service provider report the ECO Stars Toolkit provides

estimates of carbon, fuel and financial impacts, and previous studies have demonstrated reduction of NOx and PM within HDV fleets, as a consequence of ECO Stars membership.

The pilot taxi scheme however proved challenging in meeting recruitment targets. As detailed earlier, in order to boost recruitment for any future taxi schemes, that fleets are assessed without fleet listings and join the scheme without star rating. This approach will ensure that the emission reduction guidance can still be passed onto taxi operators, should a taxi scheme be continued in the future.

The FBM study has highlighted the significant potential of ECO Stars to develop and grow, securing further emission reduction benefit, and putting the scheme on a more sustainable footing going forward. This approach brings its own challenges however, as implementing the FBM could produce further uncertainty. It is therefore essential that further funding is secured to bridge the gap between current and future funding models, which will allow the recommendations of the FBM, to be fully implemented, evaluated and then modified accordingly. Barnsley MBC is currently in the process of securing this transition funding to take the scheme forward into 2020 and beyond.

Table F.3 – Air Quality Grant Progress Report on Eco Driver Training

Progress Report Template

Air Quality Grant 2018/19

Barnsley MBC – Eco-driver training project

Introduction

In the Invitation to Apply for grants under the Air Quality Grant Scheme 2018/19, local authorities awarded a Grant are asked to provide progress reports on the supported project(s) after the grant has been paid to the authority.

Reports should be provided on a quarterly basis for the duration of the project. The form set out below should be used to report quarterly progress in all cases.

A final report should be published and provided within six months of the project end. The report should clearly set out the impacts of the project as compared to its original objectives.

How to complete the form

- Section 1 – Please enter contact details and complete the project summary details each quarter
- Sections 2 and 3 – Please complete in line with the proposal submitted to Defra at the time of application (October / November 2018).
- Sections 4 onwards – Please complete each quarter with relevant updates; you may add or remove quarters as relevant to the length of your project. These sections provide the opportunity to give an update on progress as well as any changes to the programme.
- The information in the report is cumulative so please add to previous quarterly responses and do not edit or delete them.
- Please return completed form/s to:

Dawn.Anderson@defra.gov.uk and Air.Quality@defra.gsi.gov.uk.

1. Project overview

Guidance: *Please provide the lead local authority name, contact details for the lead project contact and the title and reference number of the project and complete the project status table as appropriate.*

Air Quality Grant Scheme 2018/19 - project 24571	
Local Authority Name	Barnsley MBC
Key Contact Details: Name, position, email, telephone*	Christus Ferneyhough Health & Wellbeing Officer Core Public Health Directorate Barnsley Metropolitan Borough Council christusferneyhough@barnsley.gov.uk Tel: 01226 772235 Mobile: 07785 382073
Project status	
Is the project complete	No
If not complete, what is the RAG rating? (use answer from section 5)	Amber-Green
Projected project end date	30th June 2020

Current actual expenditure vs planned expenditure	Actual: £52 000 Planned: £52 000

** Please enter multiple entries as separate lines – email addresses will be used for ongoing correspondence – if contact details change, please notify the authority immediately.*
*** Delete as appropriate*

2. Provide a brief description of the project.

Guidance: *Please provide a brief description of the project and its aims. Please include details of project partners and division of work. You should draw on your application document for this answer.*

Please write your answer here.

The project is to deliver an Eco driver training scheme for car fleet operators (particularly diesel cars), in order to tackle emissions within AQMAs. The project will be delivered in Barnsley and Doncaster on behalf of Barnsley and Doncaster Councils. Barnsley is the lead authority.

The programme shall identify and provide suitable eco driver training to local public and private sector "grey" car fleets. The identification of, and engagement with local fleets within the BMBC and DMBC areas which would benefit from such training will be an important part of the contract. The programme shall run from 1st July 2019 to 30th June 2020, in accordance with the programme schedule detailed later. This will involve the use of suitably trained driving instructors, competent in provision of eco driver training.

The aim by the end of the project is to provide training to 50 organisations and 500 drivers in the Barnsley and Doncaster areas.

A suitably qualified contractor shall be appointed following a procurement process, who will then undertake Initial marketing in order to identify, engage and sign up of organisations (private and public sector) with suitable fleets and drivers for participation in the Eco driver training project within the Barnsley and Doncaster local authority areas

Following this the contractor shall review organisation procedures with a target of 50 organisations operating in the Barnsley and Doncaster local authority areas. The contractor shall then undertake eco driver training for an estimated 500 drivers (based upon a ½ day course per driver). The contractor will also provide project management and administration over the twelve months of the project, along with evaluation.

3. Project air quality objectives

Guidance: *Please indicate which study area(s), emissions source(s) and pollutants are relevant to this project. Please enter any comments as needed.*

Study Area(s)	Y/N?	Comments
Clean Air Zones/ Low Emission Zones		
Emissions Abatement Technology		
Remote Sensing		
Smoke Control Areas		
Communication	Y	
Monitoring		
Modelling		
Behavioural Change	Y	
Fleet Improvement		
Traffic Management		
Other (Please confirm)		
Emission Source	Y/N?	Comments
Cars	Y	
HGVs		
Buses		
Wood burners		
Trains		
Biomass		
Other		
Pollutant	Y/N?	Comments
NO2	Y	Eco driver training should assist with reducing emissions of both NOx and particulate matter
PM10	Y	
PM2.5	Y	

Other		

4. Changes to project

Guidance: *If the project has changed from what was set out in your application (i.e. outputs have changed, delivery methods have changed, etc.) please set out what changes have been made, why they were necessary and what impact they have on the overall project plan (i.e. new or moved milestones, new outputs/benefits). If the changes have altered the original project plan, please include a revised project timeline clearly marking where changes to timing have been made.*

Q1 – June 2019
Please write your answer for Q5 here. No change

Q2 – September 2019
Please write your answer for Q5 here. No change

Q3 – December 2019
Please write your answer for Q5 here. No change to project plan. Underspend (£2050) reported and approval gained to explore ways to reinvest this money into the project.

Q4 – March 2020
Please write your answer for Q5 here.

No change to project plan however, due to the COVID-19 pandemic, progress has been halted and the project in on standby. Subsequently, the projected completion date will need extending; the duration of which will be detailed once restrictions are lifted and it is safe to commence with the project. This approach was agreed with Defra (e-mail correspondence) on 17th March 2020.

Q5 - June 2020
Please write your answer for Q5 here.

(Please add/amend delete dates as necessary)

5. Progress to date

Guidance: *Please provide a brief description of the work carried out to date (500 words or less), with reference to key milestones. This should include whether or not the project is proceeding in accordance with the estimated timescales of the most up to date project plan. Based on the information you supply, please also include a RAG rating of the project using the table below.*

Q1 – June 2019

Please write your answer for Q5 here.

The project has progressed satisfactorily within Q1 up to the end of June 2019. Since grant award, we have been undertaking a procurement exercise in order to appoint a suitably qualified contractor to undertake this project. The requirements of the procurement were aligned with the proposals within our bid for Defra air quality grant funding. Procurement is also adhering to our Council Contract Standing Orders

This exercise is now nearing completion and we expect that the contractor should be appointed in early July. This would give the contractor almost twelve months to successfully deliver the project in line with the project plan, which was detailed within our successful bid for air quality grant funding.

A Steering Group of local authority officers from Barnsley and Doncaster has been set up in order to oversee the project, and provide appropriate management to the contractor as this project is being delivered.

At this stage therefore, we have RAG rated the project as “Amber-Green”, as the procurement has not quite been completed.

Q2 – September 2019

Please write your answer for Q5 here.

A company (eDriving Solutions) has been successful in their tender application to deliver the project. The company is well experienced and has successfully delivered a similar eco driver scheme in the Sheffield City Region in the period 2013-15.

An inception meeting was held in Q2 with local authority officers from Barnsley and Doncaster as well as representatives from eDriving Solutions. Timelines, training content, structure and evaluation processes were discussed. The meeting generated a number of actions that have since been completed and are summarised as follows;

- A launch event for the scheme is scheduled for 8th October 2019 at Barnsley Football Club. A range of local organisations will be invited alongside Councillors and Council officers from Barnsley and Doncaster
- A website has been created and launched (www.eco-businessdriving.co.uk)
- Communications Officers for both Councils have been identified to support the scheme and a press release has been produced and was released on September 30th 2019
- Businesses have been targeted to receive the training. Priority fleets identified include those of the NHS and the Councils, along with local private sector fleets.

A second meeting took place on the 10th of September, with representation from eDriving Solutions, Barnsley Council, and Doncaster Council. The meeting included discussion on the development of an e-learning module which will include pre and post-learning questions to provide an additional evaluative aspect.

During this meeting it was confirmed that 20 reliable and flexible instructors have been identified and are scheduled to receive training on 22nd October and 5th November 2019.

Business recruitment was also on the agenda. During the meeting and since, we have established key contacts with relevant businesses across the two boroughs and have started to make contact via email and telephone. Following attendance at a Sustainability Group Meeting at Barnsley Hospital on 20th September, we have received interest for hospital staff to receive the training.

To date, there are 10 businesses that have confirmed attendance for the launch event on 8th October. There will be also be Councillor and Council Officer representation from Barnsley and Doncaster Councils. During the meeting it is hoped that some (or all) of the businesses in attendance sign up to the scheme. It is foreseen that we the training will begin to be delivered to businesses in November 2019.

At this stage, being cautious we have RAG rated the project as “Amber-Green”. Planning is going well and business recruitment has started. The success of the launch event and number of businesses/drivers signed up across the next two months will largely dictate the RAG rating for Q3.

Q3 – December 2019

Please write your answer for Q5 here.

The launch event held at Barnsley Football Club on the 8th December and was attended by multiple representatives from nine out of the ten local businesses that had confirmed attendance. Feedback questionnaires from the launch event indicate that it was a success, being well presented and informative to attendees as well as indicating that the overwhelming majority of businesses in attendance intend to take part and make the most out of the eco driver training scheme (see figure below from launch event feedback).

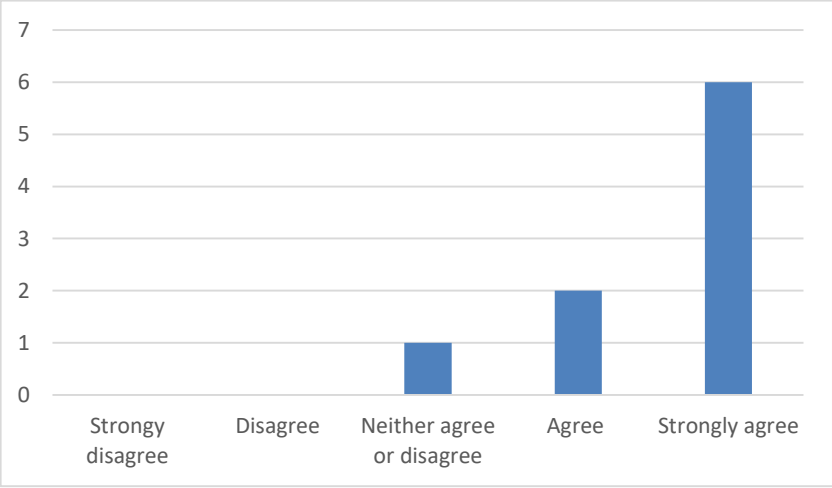


Figure 5: I intend to take full advantage of this scheme

In addition to the launch event held in Barnsley, there has been a ‘breakfast event’ held in Doncaster on the 10th December. Unfortunately attendance was not as high as hoped, with three businesses attending and two sending their apologies.

There are currently two breakfast events (one in Barnsley and on in Doncaster) scheduled for February and March 2020. Local businesses will be invited and encourage to participate in the scheme. A progress meeting is scheduled in-between the two breakfast events to review the first and to make and amendments prior to the second. Communication between the provider and project team has been excellent so far. We hold regular meetings and are often in discussion via email.

An e-learning module has been produced to compliment to training and the scheme, which will remain available to Barnsley and Doncaster Council twelve months after the project is complete. The module starts with 5 questions (a pre questionnaire) that must be completed before the learner can progress to the next page. The answers to each question are covered within the module material. The content covers pollutants and particulates and how eco driving techniques can reduce emissions.
The 5 questions are asked again at the end of the module to allow a pre and post evaluation. The module has been reviewed by air quality Officers from both Barnsley Council and Doncaster Council to ensure accuracy and validity.

We are also exploring ways to best utilise the £2050 underspend of the grant. Defra have been made aware of this underspend and have granted approval for us to reinvest this into the project to bolster promotional, advertising, and marketing activities. Exact. Defra will be consulted and permission will be requested once specific activities are decided upon by the project team.

With regards to completed training and scheduled training to date, the figures are as follows;

Number of businesses contacted	100+
Number of businesses received training	4
Number of individual drivers received training	29
Number of individual drivers booked on to receive training	36
Number of businesses who've showed an interest but haven't booked drivers on yet	9
Number of potential drivers from these interested businesses	263

Initial data produced from the training has been promising, and amongst other things is suggesting that drivers and reducing the number of gear changes and reducing their mpg across a prescribed route. Data parameters collected from the training will be

presented in the Q4 report, once the data set becomes larger following the completion of the eco driver training by more business employees.

RAG rating remains at “Amber-Green”. Careful monitoring of the project is required to ensure that the balance of recruiting individuals from a range of businesses is maintained so that both the total individual target (500) and the different businesses target (50) are met.

Q4 – March 2020

Please write your answer for Q5 here.

The rapidly developing situation regarding the COVID-19 epidemic has caused major disruption and has halted the completion of any training and progress with the scheme generally. Initially, businesses with drivers booked on to training were starting to cancel in early March. Shortly after this, and as government guidance and restrictions came into effect, a mutual decision was made on the 17th March by the project managers and provider to halt all training activity and effectively ‘pause’ the eco driver training scheme. Initially this hiatus is projected to be for 2-3 months but will depend largely on the situation nationally and the guidance from central government.

Following a second breakfast event took place in Barnsley on the 18th February 2020, five businesses signed up to the scheme with a potential for up to 106 drivers to be trained across the coming months. The Doncaster breakfast event was scheduled for 18th March but was cancelled due to COVID-19.

Steady progress has been made with the project with over 50 drivers being trained, and over 200 were scheduled to be trained by the end of March but are unfortunately now cancelled (to be rescheduled for a later date). It has been identified by the provider that there is generally a lag of approximately 3 months between the initial contact with a company and the training of drivers. This may impact on the delivery of the scheme within the projected time frame. It is important to point out that E-driving solutions would not require any increase in budget or further payment but would continue to deliver training following the initial project completion date to maximise the number of drivers trained across multiple companies. Communication with Defra regarding this are being made separately to these quarterly update reports.

Of the 50 drivers that completed the training, the following results have been shared with us that show the pre-course benchmark drive with the post-course benchmark drive.

Item	N=	Pre-course M = (SD)	Post-course M = (SD)	t=	df	p=
Time taken	50	13.66 (4.142)	13.66 (3.957)	1.366	49	.178
MPG	52	48.04 (7.773)	52.552 (7.775)	-8.179	51	.001*
Speed	50	21.49 (4.847)	22.40 (5.144)	-2.738	49	.001*
Gear changes	50	42.86 (15.155)	29.38 (9.752)	77.818	49	.001*

*There was a statistically significant 9.39% improvement in MPG
*There was a slight but significant increase in speeds
*There has been a statistically significant 31.45% decrease in the number of gear changes.

As previously discussed, and following approval from Defra, the £2050 underspend has been allocated to marketing and promotion of the scheme, specifically as follows;

£500 – promotional/testimonial video recording and production
£250 – Mailshot to businesses in Barnsley
£250 – Mailshot to businesses in Doncaster
£100 – Facebook ad to promote the Barnsley breakfast event on 18/02/2020
£450 – Facebook ad to promote Doncaster breakfast event on 18/03/2020

This leaves £500 to use on Facebook to promote the scheme going forward.

Due to significant disruption from COVID-19, the RAG rating for the project is currently Amber. It is inevitable that this disruption will present a schedule overrun, however a RAG rating of Amber/Red is not applicable as successful delivery of the project is still expected and resolution is certainly feasible.

Q5 - June 2020

Please write your answer for Q5 here.

(Please add/amend delete dates as necessary)

Rag	Criteria Description	Q1	Q2	Q3	Q4	Q5
Green	Successful delivery of the project/programme to time, cost and quality appears highly likely and there are no major outstanding issues that at this stage appear to threaten delivery significantly.	☐	☐	☐	☐	☐
Amber / Green	Successful delivery appears probable however constant attention will be needed to ensure risks do not materialise into major issues threatening delivery.	☒	☒	☒	☐	☐
Amber	Successful delivery appears feasible but significant issues already exist, requiring management attention. These appear resolvable at this stage and if addressed promptly, should not present a cost/schedule overrun.	☐	☐	☐	☒	☐
Amber / Red	Successful delivery of the project is in doubt with major risks or issues apparent in a number of key areas. Urgent action is needed to ensure these are addressed, and to establish whether resolution is feasible.	☐	☐	☐	☐	☐
Red	Successful delivery of the project appears to be unachievable. There are major issues on project definition, schedule, budget required, quality or benefits delivery, which at this stage do not appear to be manageable or resolvable. The project may need re-baselining and/or overall viability re-assessed.	☐	☐	☐	☐	☐

6. Issues and risks faced

Guidance: *Please provide a brief description of any issues and risks faced or anticipated that may affect or have affected project outcomes or the timescales for delivery. Please also provide details of how you have addressed these issues/risks (500 words or less).*

Q1 – June 2019

Please write your answer for Q5 here.

The risk identified at this stage of the project is the successful appointment of a suitably qualified contractor. We believe that we have minimised this risk by inviting only those companies with sufficient relevant previous experience of successfully delivering eco driver training schemes to quote for this contract. This will be confirmed once the procurement evaluation process has been completed.

This approach will also ensure that the appointed contractor should be able to immediately progress the project after appointment, as the contractor will have a clear idea of project requirements from both our procurement specification and the contactor's past experience of delivering such schemes.

Q2 – September 2019

Please write your answer for Q5 here.

A risk identified at this stage is adhering to the original timescale for delivery. This has occurred due to delays in funding and the tender process. Although the scheme was original due to end in June 2020, our provider has assured us that training will continue after this date, until the target number of drivers (500) have been trained.

With regards to risks to project outcomes, there are currently none besides the crucial phase of recruiting businesses into the scheme. To ensure recruitment goes well, we have a launch event scheduled as well as breakfast events for businesses. Additionally, we have a comms/marketing campaign through our internal channels and local media outputs.

Q3 – December 2019

Please write your answer for Q5 here.

The biggest risk at this point is that the individual driver target (500) is hit, but the organisation businesses target of 50 is not. For instance, we have had businesses who want to put 50+ drivers through the scheme but have had to limit them to lower numbers with the goal to offer the training to a wide range of businesses across Barnsley and Doncaster.

This has to be carefully monitored so that the scheme can be offered to a wide range of local businesses without us then failing to reach our target of 500 individual drivers due to limiting the number of drivers each business can be put forward.

There is also the risk of interested businesses being saturated. However, we have been reassured that there are plenty more businesses to contact across the two Boroughs.

Q4 – March 2020

Please write your answer for Q5 here.

The overarching and significant risk at this stage is the disruption caused by COVID-19. This has caused a hiatus in the scheme up to three months (estimated). Consequently, this will have a knock-on effect on the timescales for successful delivery. It is not yet known how long current restrictions will be in place nationally, nor do we know the impact that COVID-19 may have on businesses and instructors once we return to 'normal'. There is the risk that instructors delivering the training may not return to employment and some businesses who were booked on for training may collapse under financial pressure.

As a project team, we are doing the following to mitigate and monitor the situation:

- Having regular video-call meetings to discuss the current situation and plans for resuming the scheme
- Driving instructors are being contacted regularly to monitor their situation, health, and to keep them informed of any developments
- Contact is being maintained with businesses who had drivers booked on to the scheme to maintain a presence and to eventually reschedule training
- Not using resources on sponsored social media advertising until restrictions are lifted

Q5 - June 2020

Please write your answer for Q5 here.

7. Project outputs and benefits

Guidance: *Please provide a summary of any initial or final observations/conclusions that can be drawn from the project, and in particular, details of any observed or estimated benefits such as reductions in emissions and/or pollutant concentrations (500 words or less). Please set out how actual outputs and benefits compare to anticipated outputs and benefits, as detailed in the project application, explaining any differences.*

(Electronic copies of any completed outputs should be submitted alongside this form.)

Q1 – June 2019

Due to the procurement exercise nearing completion and the contractor has not yet been appointed, there are no project outputs to report at this stage.

Q2 – September 2019

As training delivery has not yet commenced, there are no data outputs to present. However, the methods of evaluation (pre and post training) have been discussed and will include the following;
- Fuel consumption (mpg)
- Number of gear changes
- Number of stops
- Time taken to complete set route
- Knowledge of driver

Through more economical driving styles, vehicle emissions will be reduced, improving air quality whilst increasing road safety and reducing vehicle costs. We hope to have some data to provide for Q3.

Q3 – December 2019

No update.

Q4 – March 2020

As the table displays in Question 1. So far an average reduction of 9.39% in MPG has been observed which is statistically significant. For a 50L tank capacity petrol car, this equates to getting approximately 50 extra miles out of a full tank of fuel.

Furthermore, there has been an average reduction in the number of gear changes of 31.45%. This significantly reduces the wear and tear of the vehicle and suggest a more economic driving style which in turn equates to reduced vehicle emissions.

Q5 - June 2020
Please write your answer for Q5 here.

8. Financial Performance

Guidance: *Please provide details of the anticipated project spend at this stage of the project as well as the actual project expenditure. Please explain the reasons for any difference between these figures and provide an overview of how any overspend/underspend will be dealt with.*

Q1 – June 2019
Please write your answer for Q5 here.

The anticipated project spend is £52 000. Further information will be provided as the project proceeds.

Q2 – September 2019
Please write your answer for Q5 here.

The provider is due their first quarterly payment of £12,487.50. This is currently being processed. As the provider quoted £49,950 to deliver the scheme, we are scheduled to be under budget by £2050. Ways to spend this remaining money (pertaining to air quality across Barnsley and Doncaster) are to be discussed. Depending on recruitment progress, this may be spent on promoting the

scheme and encouraging enrolment. Other ideas at this stage include allocating funding to Clean Air Day 2020. **Defra will be consulted and permission will be requested on any spending outside of the scheme.**

Q3 – December 2019

Please write your answer for Q5 here.

Project spend is on target and the provider's second quarterly payment of £12,487.50 is currently being processed. The aforementioned £2050 has been reported to Defra and productive ways to reinvest this into the project are currently being explored. As previously stated, Defra will be consulted before any spending of this £2050 occurs.

Q4 – March 2020

Please write your answer for Q5 here. The third quarterly payment of £12,487.50 to the provider (e-driving solutions) has been made in the fourth quarter of the Council's financial year 2019-20. This means that the final quarter payment of £12,487.50 and the additional £2050 of the grant award (previously agreed with Defra to be spent on a further marketing campaign) will be carried forward into financial year 2020-21. This results in a total carryover of £14537.50 to be spent in financial year 2020-21, on eventual resumption of the project. This will ensure full spend of the grant award of £52000.

Discussions were held with provider regarding a lower amount to be paid as the third quarterly payment due to the lack of training in March 2020 due to the impact of COVID-19.

However, due to the pressures the Council has been working under due to COVID-19 in late March 2020 in particular, there was a risk that the necessary financial arrangements to agree and administer this lower payment may not have been completed by financial year end, meaning that the provider may not have received any third quarterly payment, and additional carryover of grant into 2020-21. The Council acknowledges the increased risk of taking this approach, however the Council remains confident that the project will be delivered in its entirety post COVID-19 and subject to a sufficiently healthy local economy producing sufficient drivers to train. From the progress made so far and the Council's observations of e-driving solutions high quality delivery of this project to date, the Council is confident that the provider will deliver the project's requirements.

Q5 - June 2020

Please write your answer for Q5 here.

(Please add/amend delete dates as necessary)

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	Air quality Annual Status Report
BAF	Bias Adjustment Factor
CAZ	Clean Air Zone
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
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 (micrometres or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SCR	Sheffield City Region
SO_2	Sulphur Dioxide

References

Air Quality Archive Internet website: www.airquality.co.uk

Barnsley Metropolitan Borough Council, Defra AQ Grant Reports, Various, 2018 – 2020

Defra website: http://www.defra.gov.uk/environment/quality/air/air-quality/

Doncaster Metropolitan Borough Council Public Access: http://local.doncaster.gov.uk/PublicAccess/default.aspx

Doncaster Metropolitan Borough Council, Pollution Control, Air Quality Review and Assessment Reports, Various, 1998 – 2019

Doncaster Metropolitan Borough Council, Strategic Transportation Unit

Local Air Quality Management Policy Guidance LAQM. PG(16), issued by DEFRA

Local Air Quality Management Technical Guidance LAQM. TG(16), issued by DEFRA

Precision Results 2019: https://laqm.defra.gov.uk/assets/tubeprecision2019version0319finalreduced.pdf

Downloaded June 2020

Sheffield City Region Plans and Polices, Various, 2019 onwards https://sheffieldcityregion.org.uk/transport/ Downloaded 25 June 2020

Wasp Results: Summary of Laboratory Performance in WASP NO_2 Proficiency Testing Scheme.

Downloaded June 27th 2019

https://laqm.defra.gov.uk/assets/laqmno2performancedatauptonovember2019v1.pdf