



2022 Air Quality Annual Status Report (ASR) for the year 2021

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

Date: 8th July 2022.

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Executive Summary: Air Quality in Our Area

The Environment Act 1995 places a duty on Local Authorities to monitor, assess and take action to improve local air quality under the statutory process of Local Air Quality Management (LAQM). The LAQM system places greater emphasis on action planning to improve air quality, as well as requiring the completion of an air quality Annual Status Report (ASR). This report relates to data gathered between 1st January and 31st December 2021 and forms Huntingdonshire District Councils (HDC's) 2022 ASR, providing a review of air quality in the district for the year 2021.

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

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

Air Quality in Huntingdonshire

Similar to 2020, national measures were utilised in 2021 to stop the spread of Covid-19. Whilst these were not as stringent as those experienced in 2020, they are still likely to have resulted in a reduction in traffic, and therefore an improvement in related pollution levels. These measures, coupled with the continued A14 works to remove the viaduct within Huntingdon centre, have influenced the air quality results, continuing to make it difficult to assess the benefit of relocating the A14.

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

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

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

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

The Huntingdon southern bypass section of the new A14 opened in December 2019 and works continued in and around Huntingdon on the A1307 (the old A14) throughout 2020 and 2021. Vehicle access from the A1307 to Huntingdon ring road opened in October 2020, and all highway works were completed, and traffic restrictions lifted on 30th May 2022. Road users may initially be unfamiliar with the new layout, so it is considered unlikely that vehicle use was at 'normal' levels in 2021 as roadworks may have influenced drivers' behaviour. However, it is still the councils belief that the relocation has been beneficial to pollution levels within Huntingdon.

The main air quality issues within Huntingdonshire continue to be NO₂ from vehicle emissions, mostly originating from the A14 and to a lesser extent the A1, both of which run through the district. However, local traffic within the market towns also contributes to some elevated levels, compared to the rest of the district.

Huntingdonshire currently has four Air Quality Management Areas (AQMA's).

1. Huntingdon,
2. St Neots,
3. Brampton, and
4. A14 Hemingford to Fenstanton.

These can be viewed on our website at:

<http://www.huntingdonshire.gov.uk/environmental-issues/noise-nuisance-pollution/air-quality/> and on the Defra website at: https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=131 .

Data collected demonstrates that there were no breaches of any of the Objectives in 2021 at any of the measurement locations.

Diffusion Tubes (non-continuous monitors for Nitrogen Dioxide (NO₂))

Whilst results from previous years have been in line with national trends and shown a predominantly year on year reduction in Nitrogen Dioxide (NO₂), in 2020, as expected all results were much lower than anticipated due to the measures taken to control Covid-19. Results for 2021 are mixed, whilst there is a general trend at most sites of a slight increase, some sites have again decreased and are slightly below the 2020 figures. The largest increases were at Huntingdon 3 (6 George Street) with an increase of 3.4µg/m³

giving a result of $23.9\mu\text{g}/\text{m}^3$ and St Ives 5 (Needingworth Road) with an increase of $3\mu\text{g}/\text{m}^3$ resulting in a figure of $24.3\mu\text{g}/\text{m}^3$. The highest measured level within the district remains at Pathfinder House with the result of one of the triplicate tubes at $27.8\mu\text{g}/\text{m}^3$, however when averaging the results of the triplicate tubes at this location the result is $26.3\mu\text{g}/\text{m}^3$. This compares to a figure of $24.8\mu\text{g}/\text{m}^3$ in 2020. There have been some very small decreases at some sites, mostly less than $0.5\mu\text{g}/\text{m}^3$, however Brampton 5 (Hansell Road, Brampton) has seen the greatest reduction of $3.9\mu\text{g}/\text{m}^3$ falling from $14.9\mu\text{g}/\text{m}^3$ to $11\mu\text{g}/\text{m}^3$. This was to be expected and is due to the significantly high diffusion tube result of $68.8\mu\text{g}/\text{m}^3$ for the month of July which raised the annual mean for 2020 and was possibly due to idling lorries associated with construction activities occurring in the area, as discussed in last year's ASR. It should be noted that in June 2021 the Wood Green Animal Shelter tube was relocated in closer proximity to the road due to building works and access issues. This does not appear to have had a significant impact on the results and the location information will be updated in next year's ASR.

In most cases the results remain significantly lower than those within 2019, before Covid and the A14 works. The data demonstrates that all sites met the NO_2 objective level in 2021 and the continuing low trend is likely due to the relocation of the A14 and government measures to stop the spread of Covid.

Continuous monitors (Analysers for Particulate Matter (PM) and NO_2)

PM_{10} , $\text{PM}_{2.5}$ and NO_2 are continuously monitored at the Air Quality Monitoring Station (AQMS) located near Pathfinder House. Results indicate that there were no exceedances of any of the air quality objectives in 2021 at this location.

The annual mean PM_{10} figure increased from $14\mu\text{g}/\text{m}^3$ in 2020 to $15\mu\text{g}/\text{m}^3$ in 2021. This is still slightly lower than the result of $15.74\mu\text{g}/\text{m}^3$ measured in 2019 and remains well within the objective level of $40\mu\text{g}/\text{m}^3$. The results indicate there was one breach of the 24-hour objective ($50\mu\text{g}/\text{m}^3$), however this is still well below the limit of up to 35 breaches per year.

$\text{PM}_{2.5}$ has remained at $8\mu\text{g}/\text{m}^3$, the same as measured in 2020 and slightly lower than the $8.67\mu\text{g}/\text{m}^3$ measured in 2019. The NO_2 analyser measured an annual mean of $27\mu\text{g}/\text{m}^3$, slightly higher than the $25\mu\text{g}/\text{m}^3$ measured in 2020. Again, there were no 1-hour means above $200\mu\text{g}/\text{m}^3$. Like last year HDC have taken part in the diffusion tube co-location study and produced a localised bias adjustment figure. More information regarding this can be found in Appendix C.

Residential Development:

As a growing district Huntingdonshire has many large-scale long-term developments, both under construction, as well as proposed within the planning process. Areas around St Neots (such as Loves Farm/Wintringham Park and Loves Farm East) and Alconbury Weald continue to undergo large scale development; other sites include locations at Needingworth, Godmanchester, Brampton and Buckden and around Huntingdon itself. Most larger scale, or potentially polluting proposals are accompanied by an Air Quality Impact Assessment to assess the impact of the proposed development; construction impacts and mitigation; and the impact of the local air quality on the development itself. The requirements for an air quality assessment are outlined within Policy LP 36 of the HDC Local Plan.

Industrial Development:

An electric crematorium has commenced operating this year under the operation of Huntingdonshire Town Council. This falls under the Environmental Permitting regime and has an Environmental Permit to control emissions to air. The process has regular (as well as continuous) emissions monitoring to ensure compliance with the permit conditions.

The Small Waste Incineration Plant near Colne remains under construction and commissioning and as such is not yet fully operational. This falls under the Industrial Emissions Directive and has an Environmental Permit issued by HDC.

An application is also under consideration with Cambridgeshire County Council for the construction of a dry anaerobic digestion (AD) facility, pellet fertiliser facility and healthcare waste energy recovery facility at a current waste composting site. The local authority, County Public Health, Health and Safety Executive (HSE) and UK Health and Security Agency (UKHSA) have been consulted as well as the Environment Agency who will regulate the sites Environmental Permit should planning permission (and an Environmental Permit for the proposed activities) be granted.

Partnership working:

We continue to work with the County Council in minimising impacts from A14 upgrading works around Huntingdon, and when all works are complete and traffic has settled after Covid measures, we will be able to further assess and flag up any issues and areas we

feel need consideration. The County Council continue to support HDC with provision of funding from the County Council's air quality monitoring budget to assist with monitoring provision around the district. HDC are a member of the countywide Cambridgeshire and Peterborough Pollution Prevention Group and meet regularly with other councils, the County Public Health team and the Environment Agency to share information and best practise measures. HDC are also involved in the collaboration between Cambridgeshire County Council and the Cambridgeshire and Peterborough Combined Authority for the smart places initiative – more information on this is provided below.

Actions to Improve Air Quality

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

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

Monitoring:

The monitoring of air quality within the district is an important aspect and HDC continues to re-evaluate the monitoring provision within the district.

There have been teething issues with the mobile monitor, including the cost/process of installation. The unit may not be as accurate as hoped; however we will still be able to gain an understanding of the change in pollution levels throughout the day/week.

⁵ Defra. Clean Air Strategy, 2019

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

St Neots is part of the 'Smart Places Initiative' which aims to use data and emerging technology to address common local challenges in areas such as transport, connectivity and air quality. This data is then processed and analysed, providing the smart place with information to help them influence behaviours and improve economic strength, sustainability and quality of life for the local residents. The Smart Places initiative is part of the Connecting Cambridgeshire programme, led by Cambridgeshire County Council, which is working in collaboration with the Cambridgeshire and Peterborough Combined Authority, Huntingdonshire District Council and St Neots Town Council, as well as local community groups and local residents and businesses. As part of this initiative air quality monitors have been placed at several locations around St Neots and will assist in providing a more informative picture of the air quality.

Planning:

As in previous years, the Environmental Protection Team continue to provide advice to the Planning Team regarding proposed developments in an attempt to minimise air pollution impacts, even if there is no risk that air quality objectives will be breached. This is supported by both national and local planning policies, promoting air quality improvements and minimisation of impacts. Therefore, even if the effect is judged to be insignificant, consideration of the application of good design and good practice measures is advised, including the following:

- promoting active travel and ensuring good cycling and walking infrastructure (preferably away from roads) to reduce reliance on vehicle use,
- the provision of electric vehicle rapid charge points/infrastructure,
- access to public transport,
- good property insulation,
- low emission design.

Construction Environmental Management Plans continue to be a requirement for certain developments in order to control and minimise the impact of pollution, especially particulate matter, during construction activities.

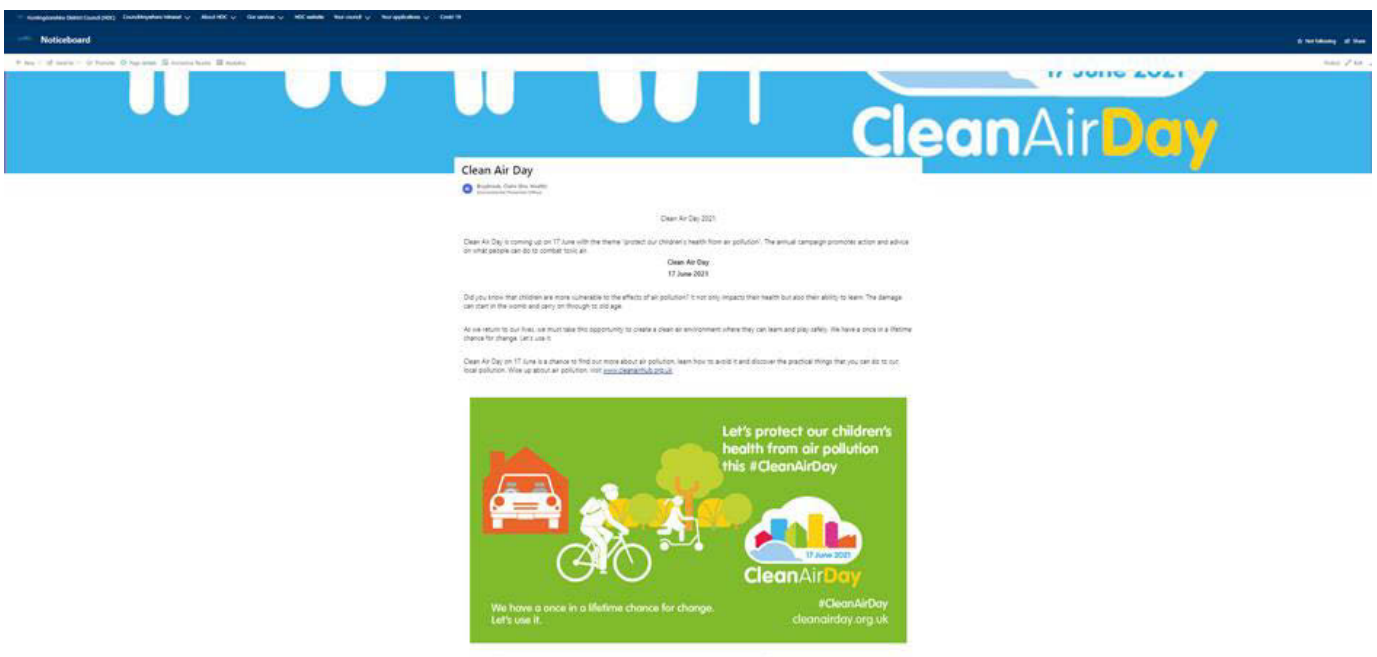
Clean Air Day:

During 2021 HDC participated in the National Clean Air Day public awareness campaign on 17th June 2021. HDC provided information on our website’s main page (for the public), our intranet (for staff), and we tweeted information and advice to our followers throughout the day.

Internet:



Intranet:

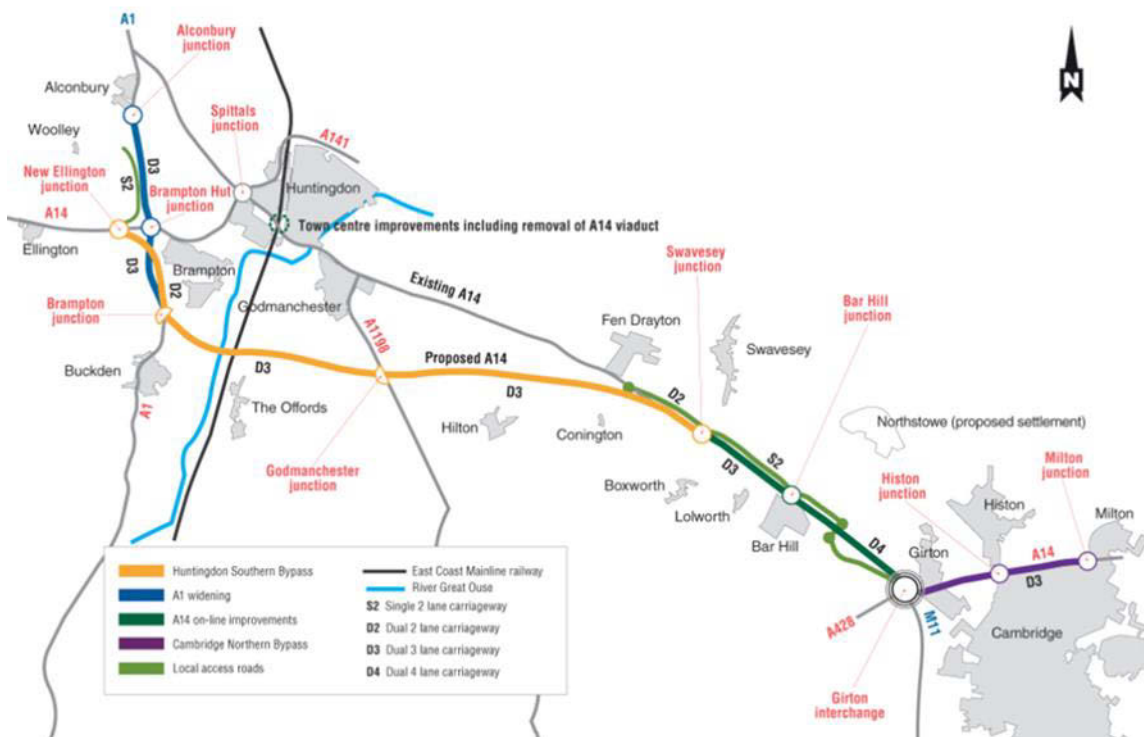


Tweets:



A14 upgrade:

The re-routing of the A14 has progressed during 2021. The new section of road which takes the heavy traffic away from Huntingdon opened at the end of 2019 and the part of the A14 in close proximity to large residential areas in Huntingdon closed whilst works took place to change it into the A1307, as indicated below:



The above map shows (in yellow) the relocated A14 in relation to Huntingdon. The old A14 (now A1307) is shown as the 'existing A14' and cuts straight through Huntingdon. This road has not been fully open whilst works continue, including the removal of the old A14 viaduct, above the rail line within Huntingdon. It was hoped the impact of this relocation on the NO₂ and PM₁₀ levels within the AQMA and elsewhere would be apparent, however the additional impact of Covid restrictions and the ongoing roadworks on the A1307 has continued to make apportionment difficult at the current time. Once works are complete, and there is less disruption on traffic, we may gain a better understanding of the reduction achieved by relocating the A14.

A428 upgrade:

A new 10-mile dual carriageway and various junction improvements are proposed on the A428 between the Black Cat roundabout and Caxton Gibbet roundabout. This will improve journeys between Milton Keynes and Cambridge including the section which runs south of St Neots and directly affects traffic flows within St Neots.

Highways England submitted their Development Consent Order (DCO) on 26th February 2021, and this was scrutinised by all interested parties, including local authorities. The overall impact of the proposals should be beneficial with regard to air quality for Huntingdonshire residents and measures have been advised in order to control the potential impact during construction activities. The Planning Inspector's Examining Authority issued a Recommendation Report to the Secretary of State on 18 May 2022. The Secretary of State has three months in which to issue a decision and has currently issued a consultation letter inviting comments and information from the applicant and all other interested parties, the deadline of which is July 2022. The outcome of this will be discussed further in next year's ASR. In the meantime further information can be seen at: <https://highwaysengland.co.uk/a428-black-cat-to-caxton-gibbet-home/> and <https://infrastructure.planninginspectorate.gov.uk/projects/Eastern/A428-Black-Cat-to-Caxton-Gibbet-Road-Improvement-scheme/>

General:

Huntingdonshire District Council provides advice to members of the public regarding sustainability and energy saving measures and is working hard to reduce its own impact by improving energy efficiency of council owned buildings and continuing to support working from home opportunities; helping to reduce vehicle usage.

During the full council meeting in December 2021 councillors adopted the aspiration of a net carbon zero Huntingdonshire by 2040, as well as the cross-party developed OxCam Arc environmental principles. The agreed set of environmental principles and the adoption of the aspiration of a net carbon zero Huntingdonshire by 2040 forms the basis to renew the Climate Strategy and Action Plan – centred on achieving an environmentally-friendly recovery and future for the district.

Conclusions and Priorities

Overall, there has been a slight increase in PM₁₀, whilst PM_{2.5} has remained the same as in 2020. NO₂ levels have remained broadly similar to 2020, with the largest increase at Huntingdon 3 (+3.3µg/m³ (+16.3%)). The results indicate that within Huntingdonshire there was widespread compliance with the air quality objectives in 2021.

Revocation is still proposed for the St Neots, Fenstanton and Brampton AQMA's, subject to committee approval. Due to unforeseen circumstances, there has been a further delay in management agreement of the draft report and seeking committee approval for revocation of the AQMA's at St Neots, Fenstanton and Brampton, leaving Huntingdon the only AQMA remaining. HDC continue to be committed to ensuring the AQMA's are fully considered in line with the correct protocol and aim to make progress with this in 2022.

Whilst the figures currently indicate that Objectives are being met within the Huntingdon AQMA it is considered the impacts of the A14 roadworks and Covid restrictions on traffic in 2021 means the data is unlikely to be representative of long-term trends in pollutant concentrations and therefore we are not currently proposing to revoke the Huntingdon AQMA. Current guidance within TG16 states that local authorities should consider measurements carried out over a period of three to five consecutive years when deliberating the revocation of an AQMA, as well as national trends in emissions etc. Therefore, further information is required to assess this AQMA.

As previously highlighted, the Air Quality Action Plan (AQAP) is out of date and it is considered the most appropriate time for completing a new AQAP would be following the revocation of the 3 AQMA's (if agreed) and completion of the A14 works to enable assessment of the remaining AQMA and ensure a more focussed and appropriate action plan to be produced, if required.

The main priorities for 2022 and beyond for HDC in relation to air quality are to:

- Update the review into the status of the AQMA's that continue to show monitoring compliance, take this to committee for consideration and take appropriate action following their decision.
- Assess the impacts of the relocation of the A14 and if this will require changes to the Huntingdon AQMA – this may take a few years as works continue within Huntingdon so an accurate long-term impact will take some time.
- Once the future of 3 of the AQMA's is known, completion of a new AQAP.
- Continue to maintain partnership working with HDC planning department and improve partnership working with the County Council Highways team and other relevant stakeholders.
- Continue to ensure construction impacts are considered and mitigation provided for appropriate development proposals; and
- Consider what further measures the Council can take to improve its own emissions.

These are discussed further in Section 2.2 below.

Challenges:

Covid-19 continued to present a challenge in normal operations, council priorities and evaluation of results through 2021.

A further challenge is ensuring sufficient resources are available for the air quality function.

The ongoing challenge remains to balance economic growth within Huntingdonshire, whilst ensuring compliance with the air quality objectives and promoting and encouraging best practice where possible.

Local Engagement and How to get Involved

HDC continue to receive requests for information regarding air quality within the district as members of the public and action groups are increasingly recognising the impacts of poor air quality and querying pollution levels within their area.

Members of the public can help to improve local air quality by reducing their emissions. Improving home insulation, reducing the number of car journeys undertaken, car sharing (taking appropriate Covid precautions), using public transport, walking or cycling wherever possible (active travel), switching off car engines when stationary, purchasing energy efficient goods, improving energy efficiency at home and choosing to purchase a low emission car are all examples of actions that can help to reduce emissions.

Public transport information for Cambridgeshire can be viewed on the County Council website at: <https://www.cambridgeshire.gov.uk/residents/travel-roads-and-parking/buses>

Whilst popular, the use of wood burning stoves and open fires also contributes to air pollution and there are a number of steps members of the public who use these can take to reduce environmental and health impacts. More information can be found on our website here: <http://www.huntingdonshire.gov.uk/environmental-issues/noise-nuisance-pollution/air-quality/wood-burning-stoves/> .




HDC provide further information on our website under 'Sustainability and greener living' <http://www.huntingdonshire.gov.uk/> . The energy savings trust can also provide further advice at <http://www.energysavingtrust.org.uk/> . HDC support National Clean Air Day, another valuable source of information regarding air quality advice and how to minimise exposure is the www.cleanairday.org.uk website, which also provides information regarding internal air quality.

Local Responsibilities and Commitment

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

Claire Braybrook, Environmental Health, Community.

This ASR has been approved by:

Approved by	Position	Signature
Kate Penn	Acting Environmental Health Team Leader, Huntingdonshire District Council	
Jo Lancaster	Managing Director, Huntingdonshire District Council	
Jyoti Atri	Director of Public Health, Cambridgeshire County Council	 PP.

This ASR has been signed off by a Director of Public Health.

If you have any comments on this ASR please send them to Claire Braybrook at:

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1 Local Air Quality Management

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

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

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

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

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

A summary of AQMAs declared by Huntingdonshire District Council can be found in Table 2.1. The table presents a description of the four AQMAs that are currently designated within Huntingdonshire. Appendix D: Map(s) of Monitoring Locations and AQMAs provides maps of AQMAs and also the air quality monitoring locations in relation to the AQMAs. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries is available online at Defra's website: https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=131. The air quality objective pertinent to the current AQMA designations is as follows:

- NO₂ annual mean;

Due to continued compliance, HDC propose to revoke St Neots, Brampton, and Hemingford to Fenstanton AQMA's (see monitoring section).

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by National Highways?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Name and Date of AQAP Publication	Web Link to AQAP
Huntingdonshire District Council Air Quality Management Area Order No. 1 (Huntingdon: Nitrogen Dioxide)	16th November 2005 - amended 29th October 2007	NO2 Annual Mean	An area encompassing approximately 2831 domestic properties affected by the A14, A141, B1044, B1514 and Huntingdon Inner Ring Road.	YES	50.2	None (27ug/m3)	Cambridgeshire Joint Air Quality Action Plan (2009)	www.huntingdonshire.gov.uk/media/3423/2009-joint-air-quality-action-plan.pdf
Huntingdonshire District Council Air Quality Management Area Order No. 2 (St Neots: Nitrogen Dioxide)	16th November 2005 - amended 29th October 2007	NO2 Annual Mean	An area encompassing approximately 115 domestic properties affected by local traffic in the town centre.	NO	45.2	None (21ug/m3)	Cambridgeshire Joint Air Quality Action Plan (2009)	www.huntingdonshire.gov.uk/media/3423/2009-joint-air-quality-action-plan.pdf
Huntingdonshire District Council Air Quality Management Area Order No. 3 (Brampton)	1st September 2006 - amended 29th October 2007	NO2 Annual Mean	An area encompassing approximately 82 domestic properties affected by the A14.	YES	37.2	None (14.5ug/m3)	Cambridgeshire Joint Air Quality Action Plan (2009)	www.huntingdonshire.gov.uk/media/3423/2009-joint-air-quality-action-plan.pdf
Huntingdonshire District Council Air Quality Management Area Order No. 4 (Hemingford to Fenstanton: Nitrogen Dioxide)	1st September 2006	NO2 Annual Mean	An area encompassing approximately 62 domestic properties affected by the A14.	YES	46.2	None (11.0ug/m3)	Cambridgeshire Joint Air Quality Action Plan (2009)	www.huntingdonshire.gov.uk/media/3423/2009-joint-air-quality-action-plan.pdf

Huntingdonshire District Council confirm the information on UK-Air regarding their AQMA(s) is up to date.

Huntingdonshire District Council confirm that all current AQAPs have been submitted to Defra.

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

Defra's appraisal of last year's ASR concluded the following:

DEFRA conclusions	Huntingdonshire District Council response
<p>The Council have acknowledged that a new AQAP is required. We encourage the consideration of revocation of the three AQMAs in the coming year so that the AQAP can be progressed and propose improvement measures can be reported in the next ASR.</p>	<p>Agreed. The revocation of three of the four AQMS's is a priority due to continued compliance.</p> <p>Current data is not considered robust enough to pursue revocation of the Huntingdon AQMA at present. This will be considered further when traffic has stabilised and the AQAP will be progressed.</p>
<p>The Council have shown their dedication to monitoring air quality in the District by improving their automatic monitoring site and introducing the use of the new mobile air quality monitoring device in the coming year to get better understanding of air quality in the area.</p>	<p>Agreed. There have been teething problems with the mobile monitor, but it allows an indication of potential issues.</p> <p>Further monitoring is also occurring within St Neots.</p>
<p>The Council have provided extensive measures to improve PM2.5 emissions. This is welcomed and the Council should continue to do so in future ASRs as well as continuing to report the trend in PM2.5 levels in the District.</p>	<p>Agreed. Ongoing & completed.</p>
<p>Figures have been included to show monitoring sites and AQMAs within the district. The colour of the AQMA boundary could be amended to be a different colour to the monitoring site crosses so that those within the AQMAs can be identified clearly.</p>	<p>Completed, colour of AQMA's changed from red to yellow. Colours limited due to use elsewhere on the maps so hopefully the AQMA's can still be seen.</p>

Details of which AQMA each monitoring sites are in should be included in Table A.2, where possible.	Completed – please see table A.2.
The discussion of the choice of bias adjustment factor is considered appropriate.	Noted.
Overall the report is detailed, concise and satisfies the criteria of the relevant reporting standard. The Council should continue their good work.	Comment welcomed and noted.

In addition to the actions discussed above in the Executive Summary section, Huntingdonshire District Council has taken forward a number of direct measures during the current reporting year of 2021 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2.

As stated in previous ASR's, it should be noted that these measures originate from the Cambridgeshire Air Quality Action Plan (2009) and hence have remained the same for several years. Huntingdonshire District Council are in the process of reviewing the St Neots, Brampton and Fenstanton AQMA's, with a view to revocation. Once the A14 works have been fully completed and data has been gained during 'normal' traffic flows the AQMA in Huntingdon will be reviewed. This may take a few years to gain sufficient data, due to continued works in Huntingdon on the A1307 (old A14) and the impact of Covid, so at this time it is intended that a new Action Plan, with updated, more appropriate and targeted measures will be written following the outcome of the decision on the revocation of the three AQMAs, in order to reduce further delay.

Six measures are included within Table 2.2, with the type of measure and the progress Huntingdonshire District Council have made during the reporting year of 2021 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2.

More detail on these measures can be found in the Action Plan at

www.huntingdonshire.gov.uk/media/3423/2009-joint-air-quality-action-plan.pdf .

Key completed measures are:

Measurement 1: The A14 upgrade is mostly complete with minor works continuing within Huntingdon on the now A1307 and ongoing removal of the viaduct. The majority of traffic has been relocated onto the new A14 at greater distance from Huntingdon. The A1307 has been partially closed for some time, and re-opened at the end of May 2022 so the impact of this on traffic levels in Huntingdon will be assessed in next years ASR.

Measurement 2: Implementation of air quality policies in the local plan is currently on going. The Local Plan for Huntingdonshire to the year 2036 was adopted in 2019 and includes a policy on air quality with a requirement for a low emissions strategy in certain circumstances. The plan also provides advice on the provision of electric vehicles and it is hoped this will encourage the use of electrically powered vehicles, in line with National Planning Policy.

In an attempt to ensure air quality is fully considered, officers continue to advise the Local Planning Authority, air quality consultants and developers of current public health advice to minimise the health impacts of air quality even if there is no risk that air quality standards will be breached. Therefore, even if the effect is judged to be insignificant, consideration should be given to the application of good design and good practice measures, including electric vehicle rapid charge points, insulation and active travel etc.

Measurement 3: Development of an effective freight partnership. Now that the A14 has been moved away from the main residential areas it is not expected that freight will cause a significant issue within Huntingdonshire, therefore it is intended that no further action will be taken regarding this measure at this time. This will be reassessed in the next AQAP.

Measurement 4: Inclusion of Huntingdonshire in the Quality Bus Partnership (QBP). Cambridgeshire County Council has not extended the QBP to outside Cambridge City, and currently has no plan to do so, therefore no further action will be taken regarding this measure at this time. This will be reassessed in the next AQAP.

Measurement 5: The guided bus route is complete and operational.

Measurement 6: Smart traffic lights at St Neots have been installed and are operational.

Whilst some of the formal six measures from within the AQAP are ongoing such as measures 1 and 2, none remain outstanding as currently measures 3 and 4 are not intended to be continued.

Huntingdonshire District Council's priorities for the coming year are:

- The main priority is to try to progress the proposed revocation of the St Neots, Brampton and Fenstanton AQMAs (AQMA 2, 3 & 4). Air quality standards and objectives are being achieved and are likely to continue to be. A draft report reviewing the AQMA's is with management and demonstrates strong compliance with the national objectives. The Council has therefore entered the process of revocation and is awaiting management and ultimately committee approval, prior to the revocation orders being made. Defra have expressed their support of this proposal in previous ASR appraisal reports.

The revocation of AQMA 2 was delayed so all three could be considered together.

The detailed modelling assessment of NO₂ concentrations for St Neots can be viewed on our website at: <http://www.huntingdonshire.gov.uk/media/3245/st-neots-air-quality-modelling-report.pdf> . Due to the size of the report it is not included in the Appendices.

- Utilise funding opportunities to support the service.
- Continue to maintain partnership working with Planning and encourage more involvement in the Climate Strategy for HD, as well as promoting opportunities for collaboration with Highways and other interested parties.
- Continue to ensure construction impacts are considered and mitigation utilised for appropriate development proposals (including vehicle idling); and
- Continue to consider what further measures the Council can take to improve its own emissions and work towards improvements in order to achieve the aspiration of a net zero Huntingdonshire by 2040.

Regionally, Cambridgeshire County Council continues to recognise the importance of air quality and it remains a key priority at regional level.

Progress on two of last year's priorities (revocation and partnership working) has been slower than expected, mainly due to the continued Covid pandemic and resulting changes in operational commitments and priorities during 2021, as well as different ways of working, and available resources. In last year's ASR Huntingdonshire District Council

predicted these issues were expected to be the principal challenges and barriers to implementation in 2021, and it is likely these will remain the same for 2022, although with less onus on Covid.

Huntingdonshire District Council anticipates that the measures stated above and in Table 2.2 will achieve compliance in AQMA 1 Huntingdon, and continued compliance in AQMA 2 St Neots, AQMA 3 Brampton and AQMA 4 Hemingford to Fenstanton.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1	Re-routing of A14 away from settlements	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	2009	2020	Highways England	Highways England	NO	Funded		Completed	AQMA's 1, 3 & 4 should meet requirements	Monitoring should indicate a reduction when relocation of road completed	A14 has been relocated, some minor works still being completed around Huntingdon.	Lengthy Timescale but expected to improve all AQMA's (after revocation of St Neots)
2	Implementation of air quality policies in the local plan.	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2009	Ongoing	Huntingdonshire District Council	Huntingdonshire District Council	NO	Funded		Implementation	All	N/A	Included within the HDC Local Plan to 2036 Implementation on-going	Highlighting AQ aspects and measures for reduction is ongoing
3	Development of an effective freight partnership	Freight and Delivery Management	Other	2009	Unknown	Not currently progressing	Not currently progressing	NO	Not Funded		Aborted	All	N/A	None	Now the A14 improvement has been completed and Highways England have applied for improvements on the A428, it is unknown if an effective freight partnership would have any significant effect. This will be re-evaluated once changes have been monitored.
4	Inclusion of Huntingdonshire in the Quality Bus Partnership	Alternatives to private vehicle use	Other	2009	None	Cambridgeshire County Council	Cambridgeshire County Council	NO	Not Funded		Aborted	All	N/A	None	At present CCC do not consider that it is feasible to run the QBP outside of the city of Cambridge. This is something we will continue to consider.
5	Completion and opening of Cambridgeshire Guided Busway	Transport Planning and Infrastructure	Bus route improvements	2009	Completed	Cambridgeshire County Council	Cambridgeshire County Council	NO	Funded		Completed	All	Unknown	Completed	The guided busway was opened in August 2011 from Cambridge Huntingdon and extended to Peterborough in July 2012.
6	Change to traffic-light system in St Neots High street as specified in the St Neots Markets Town Strategy	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	2009	Completed	Cambridgeshire County Council	Cambridgeshire County Council	NO	Funded		Completed	Reduction in AQMA 2 St Neots	AQ monitoring indicates a reduction	Completed	Works completed in 2013. Modelling undertaken in 2017 demonstrates AQ limits are being met and HDC are in the process of revoking the AQMA. See Section 2.2

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.

Due to its extremely small size, PM_{2.5} can travel for long distances in the air and it is estimated that as much as up to 50% of the levels found in any given area can be from sources outside a local authority's boundary⁷. Nevertheless, this means that the contribution of local sources to total PM_{2.5} levels is significant (typically 50% or more), and therefore Defra consider local actions to reduce PM_{2.5} emissions will have a significant beneficial impact with regard to overall PM_{2.5} concentrations.

PM_{2.5} has been monitored in Huntingdonshire at Pathfinder House since 2014 and results have indicated a general downward trend over the years. The monitor was replaced in 2019 to reduce uncertainty in results. The annual mean for PM_{2.5} in 2021 was 8µg/m³, which was the same as 2020. Table A.7 and Figure A.4 in Appendix A demonstrate the measured annual mean concentration of PM_{2.5} in Huntingdonshire has been steadily reducing. This reduction is not as significant as the one experienced with the NO₂ levels and would therefore indicate that the impact of the relocation of the A14 and the Covid lockdown measures has not had as much impact on PM_{2.5} levels. This could be due to a number of factors such as meteorological conditions and an increase in domestic heating etc.

Huntingdonshire District Council is taking the following measures to address PM_{2.5}:

- The measures (1, 2, 5 & 6) discussed above in Section 2.2 and Table 2.2 will have co-benefits on multiple pollutants, including PM_{2.5}.
- In 2014 Huntingdonshire District Council joined with Cambridgeshire County Council Public Health and the other Cambridgeshire authorities to develop the

⁷ Defra Local Air Quality Management Technical Guidance (TG16) 2018

transport and health joint strategic needs assessment which focused on PM_{2.5} from transport, see <http://www.cambridgeshireinsight.org.uk/file/2552/download>

- Continue to liaise with the Local Planning Authority and developers requesting pre-app advice, to ensure air quality mitigation measures are considered for large developments to minimise any impact (Measurement 2 in Table 2.2).
- Continue to advise planning conditions to require a Construction Environmental Management Plan when necessary, in order to control dust from demolition and construction activities.
- Use of the AQY mobile air quality monitor to enable data (including PM_{2.5}) to be collected from areas around the district to identify any hotspots.
- Continue informing the public of key advice documents, such as those provided by Defra regarding the reduction of air pollution from the use of wood burning stoves and open fires.
- Continue supporting Clean Air Day, signposting members of the public to resources and advice regarding air quality and promotion of air quality information.
- Continue to provide information and guidance to members of the public regarding Solid Fuel Restrictions and work in partnership with the County Trading Standards Team to highlight any issues.
- Attendance at the quarterly Cambridgeshire Pollution Prevention Group meetings where issues such as air quality are discussed with representatives from other adjoining Local Authorities, The County Council, and the Environment Agency to discuss best practice and partnership working.
- Huntingdonshire District Council is intending to review and update the Council's Air Quality Action Plan (AQAP) once the outcome of the current AQMAs has been determined. PM_{2.5} will be considered within any new AQAP.

Huntingdonshire does not currently have any Smoke Control Areas within the district.

Public Health Outcomes Framework:

Some of the above ties in with the Public Health Outcomes Framework (PHOF), which includes an indicator for air pollution due to the extensive evidence of the health impacts associated with it. The PHOF aims to increase healthy life expectancy, reduce differences in life expectancy and have healthy life expectancy between communities. The indicators are designed to demonstrate how well public health is being improved and protected and encourage partnership working and involvement.

The Public Health Indicator for PM_{2.5} provides a useful indication as to the burden associated with concentrations of PM_{2.5} within Huntingdonshire.

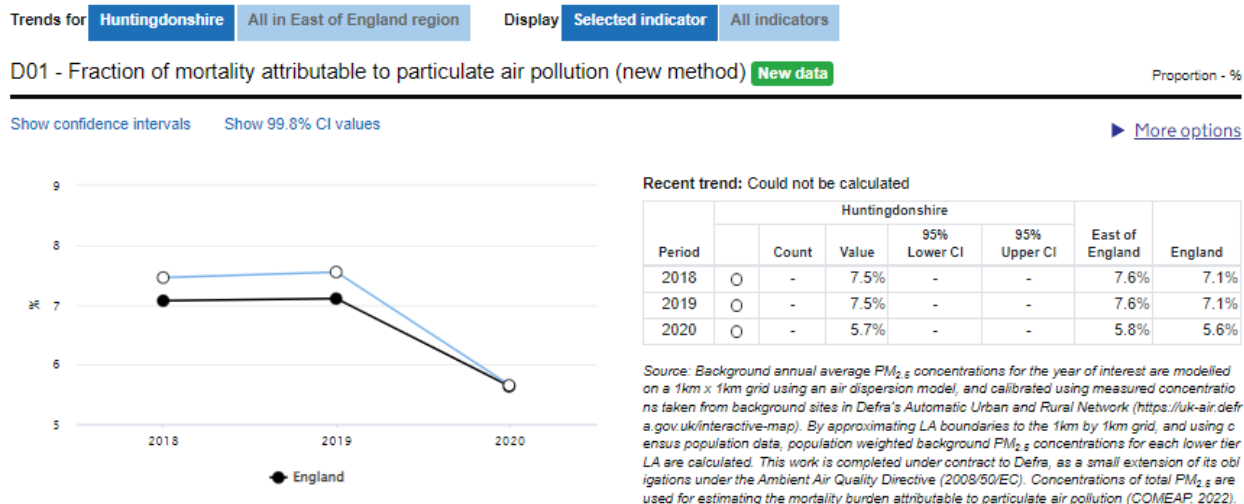
The method used to estimate the indicator values has recently changed and is now based on recommendations made by the Committee on the Medical Effects of Air Pollutants. Concentrations of total PM_{2.5} are therefore now used as the basis for the air pollution data for this indicator. Modelled concentrations of the anthropogenic component of PM_{2.5} (human-made only) are no longer used because of the uncertainty associated with the assignment to anthropogenic and non-anthropogenic sources, and because non-anthropogenic sources make only a small contribution to total concentrations.

The new indicator is defined as the fraction of annual all-cause adult mortality attributable to particulate air pollution (concentrations of total PM_{2.5}). It can be viewed as the mortality burden associated with long-term exposure to particulate air pollution at current levels, expressed as the percentage of annual deaths from all causes in those aged 30 and over. A time series with this new definition is available back to 2018, but it is advised that caution is needed when interpreting trends and these cannot be compared to the data within last year's ASR under this section due to the differences in calculation⁸.

The Public Health England PHOF indicator D01 '*Fraction of mortality attributable to particulate air pollution*' for Huntingdonshire in 2020 (the most recent year available) was 5.7%, a decrease of 1.8% compared to 2019. The 2020 values for Huntingdonshire are 0.1% lower than that for the East of England region, and 0.1% higher than the England values.

⁸ <https://www.gov.uk/government/statistics/public-health-outcomes-framework-may-2022-data-update/public-health-outcomes-framework-commentary-may-2022#summary-of-selected-updated-indicators>

Public Health Outcomes Framework data trends for Huntingdonshire compared with England:



Source: https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/4/gid/1000043/ati/101/iid/93861/age/230/sex/4/cat/-1/ctp/-1/yrr/1/cid/4/tbm/1/page-options/ovw-do-0_car-do-1_tre-ao-0

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

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

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Huntingdonshire District Council undertook automatic (continuous) monitoring at one site during 2021. Table A.1 in Appendix A shows the details of the automatic monitoring sites. The https://www.airqualityengland.co.uk/site/data?site_id=HUN01 page presents automatic monitoring results for Huntingdonshire District Council, with automatic monitoring results also available through the UK-Air website at <https://uk-air.defra.gov.uk/interactive-map?network=nondefraaqmon>

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.

The equipment comprises of a Serinus S40 NO_x analyser and the FIDAS 200 particulate monitor, both of which are MCERTS certified.

3.1.2 Non-Automatic Monitoring Sites

Huntingdonshire District Council undertook non- automatic (i.e. passive) monitoring of NO₂ at 58 sites during 2021. Table A.2 in Appendix A presents the details of the non-automatic sites.

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

3.2 Individual Pollutants

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

3.2.1 Nitrogen Dioxide (NO₂)

Table A.3 and Table A.4 in Appendix A compare the ratified and adjusted monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40µg/m³. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the full 2021 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 includes distance corrected values, only where relevant (i.e. where results are within 10% of the objective, therefore for 2021 this was not required at any site within Huntingdonshire).

The diffusion tube data for 2021 indicated there were no breaches of the $40\mu\text{g}/\text{m}^3$ annual mean objective. Whilst there was a general trend at most sites of a slight increase, the results are mixed and some sites have again decreased and are slightly below the 2020 figures. As discussed in the Executive Summary section, the largest increases were at Huntingdon 3 (6 George Street) with an increase of $3.4\mu\text{g}/\text{m}^3$ giving a result of $23.9\mu\text{g}/\text{m}^3$ and St Ives 5 (Needingworth Road) with an increase of $3\mu\text{g}/\text{m}^3$ resulting in a figure of $24.3\mu\text{g}/\text{m}^3$. The highest measured level within the district remains at Pathfinder House with the result of one of the triplicate tubes at $27.8\mu\text{g}/\text{m}^3$, however when averaging the results of the triplicate tubes at this location the result is $26.3\mu\text{g}/\text{m}^3$. This compares to a figure of $24.8\mu\text{g}/\text{m}^3$ in 2020. The tubes located at Pathfinder House, and Huntingdon 3 are located within the Huntingdon AQMA (see Appendix D for locations). There have been some very small decreases at some sites, mostly less than $0.5\mu\text{g}/\text{m}^3$, however Brampton 5 (Hansell Road, Brampton) has seen the greatest reduction of $3.9\mu\text{g}/\text{m}^3$ falling from $14.9\mu\text{g}/\text{m}^3$ to $11\mu\text{g}/\text{m}^3$. This was to be expected and is due to the significantly high diffusion tube result of $68.8\mu\text{g}/\text{m}^3$ for the month of July which raised the annual mean for 2020 and was possibly due to idling lorries associated with construction activities occurring in the area, as discussed in last year's ASR. It should be noted that in June 2021 the Wood Green Animal Shelter tube was relocated in closer proximity to the road due to building works and access issues. This does not appear to have had a significant impact on the results. As this was moved half way through the year, the location information will be updated in next year's ASR.

The NO_2 analyser measured an annual mean of $27\mu\text{g}/\text{m}^3$, slightly higher than the $25\mu\text{g}/\text{m}^3$ measured in 2020.

Table A.5 in Appendix A compares the ratified continuous monitored NO_2 hourly mean concentrations for the past five years with the air quality objective of $200\mu\text{g}/\text{m}^3$, not to be exceeded more than 18 times per year, and demonstrates that there were no 1-hour means above $200\mu\text{g}/\text{m}^3$. This has remained the case for a number of years.

There were also no annual means greater than $60\mu\text{g}/\text{m}^3$ for any of the diffusion tubes around the district, which again indicates that an exceedance of the 1-hour mean objective was not likely to have occurred at these locations.

NO_2 results from the continuous monitor can be viewed online at the Air Quality England website at https://www.airqualityengland.co.uk/site/data?site_id=HUN01 where data can be downloaded.

Both the automatic continuous monitor and diffusion tube network achieved greater than 75% data capture and therefore annualisation was not required. All data has been properly ratified and corrected for bias where applicable. Like last year, Huntingdonshire District Council have taken part in the diffusion tube co-location study and produced a localised bias adjustment figure. More information regarding this is in Appendix C.

A distance correction calculation was not required as there are not any locations with an annual mean concentration above, or within 10% of the NO₂ annual objective of 40µg/m³.

To summarise, the data demonstrates that in most cases the results remain significantly lower than previous years (pre 2020), before Covid and the A14 works. The data demonstrates that all sites met the NO₂ objective level in 2021 and the continuing low trend is likely due to relocation of the A14 and further government measures within 2021 to stop the spread of Covid.

There are no proposed changes to the monitoring network or plans to declare an AQMA.

3.2.2 Particulate Matter (PM₁₀)

PM₁₀, is continuously monitored at the Air Quality Monitoring Station (AQMS) located near Pathfinder House.

Table A.6 in Appendix A: Monitoring Results compares the ratified and adjusted monitored PM₁₀ annual mean concentrations for the past five years with the air quality objective of 40µg/m³.

Table A.7 in Appendix A compares the ratified continuous monitored PM₁₀ daily mean concentrations for the past five years with the air quality objective of 50µg/m³, not to be exceeded more than 35 times per year.

These tables show the general trend over the last five years and indicate that there is an overall reduction in PM₁₀. Results indicate that there were no exceedances of any of the air quality objectives in 2021 at this location.

As discussed earlier, the annual mean PM₁₀ figure increased from 14µg/m³ in 2020 to 15µg/m³ in 2021. This is still slightly lower than the result of 15.74µg/m³ measured in 2019 and remains well within the objective level of 40µg/m³. The results indicate there was one breach of the 24-hour objective (50µg/m³), however this is still well below the limit of up to 35 breaches per year.

The monitor has good data capture and therefore there was no requirement for annualisation. PM₁₀ results can also be viewed online at the Air Quality England website at https://www.airqualityengland.co.uk/site/data?site_id=HUN01 where data can be downloaded.

There are no proposed changes to the monitoring network or plans to declare an AQMA.

3.2.3 Particulate Matter (PM_{2.5})

PM_{2.5} is continuously monitored at the Air Quality Monitoring Station (AQMS) located near Pathfinder House.

Table A.8 in Appendix A presents the ratified and adjusted monitored PM_{2.5} annual mean concentrations for the past five years with results indicating a downward trend and the annual mean PM_{2.5} figure remaining at 8µg/m³, the same as measured in 2020 and slightly lower than the 8.67µg/m³ measured in 2019. The monitor has good data capture and therefore there was no requirement for annualisation. PM_{2.5} results can also be viewed online at the Air Quality England website at https://www.airqualityengland.co.uk/site/data?site_id=HUN01 where data can be downloaded.

There are no proposed changes to the monitoring network or plans to declare an AQMA.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Inlet Height (m)
PFH	Huntingdon	Roadside	524102	271540	NO2, PM10, PM2.5, PM1	YES No 1. Huntingdon	Chemiluminescent Light Scattering, Light Scattering, Light Scattering.	3	7	2.5

Notes:

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

(2) N/A if not applicable

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

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
St Neots 1	The Paddocks	Kerbside	517869	260132	NO2	NO	22.0	22.0	NO	3.0
St Neots 2	18 Cromwell Gardens	Roadside	519541	260280	NO2	NO	8.0	4.0	NO	3.0
St Neots 3	71 Avenue Road	Urban Background	518925	260503	NO2	NO	4.0	1.0	NO	3.0
St Neots 4	20 Harland Road	Urban Background	518489	260871	NO2	NO	3.0	1.0	NO	3.0
St Neots 5	8-10 High Street (Post Office)	Kerbside	518323	260263	NO2	YES AQMA 2	0.0	1.0	NO	3.0
St Neots 6	35 High Street (Traffic lights)	Kerbside	518433	260321	NO2	YES AQMA 2	0.0	1.0	NO	3.0
St Neots 7	17 Arundel Crescent	Suburban	518424	258556	NO2	NO	0.0	17.0	NO	1.8
St Neots 8	122 Lindisfarne Close	Suburban	518707	258260	NO2	NO	4.0	31.0	NO	3.0
St Neots 9	5 Duchess Close	Suburban	516370	259514	NO2	NO	3.0	5.0	NO	3.0
Southoe 1	2 Lees Lane	Roadside	518714	264308	NO2	NO	24.0	2.0	NO	1.8
Buckden 1	6 Perry Road	Roadside	518981	267370	NO2	NO	0.0	12.0	NO	1.8
Buckden 2	4 High Street (Roundabout)	Roadside	519082	267433	NO2	NO	0.0	1.0	NO	1.8

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
Buckden 3	34 High Street (shop)	Roadside	519161	267624	NO2	NO	0.0	1.0	NO	2.0
Buckden 4	11 Taylors Lane	Roadside	519197	267955	NO2	NO	3.0	1.0	NO	3.0
Brampton 1	RAF Brampton (Sparrow Close)	Roadside	520734	269623	NO2	NO	10.0	0.5	NO	3.0
Huntingdon 9	Ermine Street Huntingdon	Roadside	523575	272174	NO2	YES AQMA 1	0.0	3.0	NO	2.0
Brampton 3	1 Laws Crescent	Roadside	520155	271561	NO2	YES AQMA 3	32.0	2.0	No	3.0
Brampton 4	25 Dorling Way	Roadside	519956	271461	NO2	NO	6.0	1.5	No	3.0
Brampton 5	7 Hansell Road	Roadside	519839	271061	NO2	NO	18.0	0.5	No	3.0
Catworth 1	1 Thrapston Road	Rural	508409	274876	NO2	NO	42.0	42.0	NO	3.0
PFH 1, PFH 2, PFH 3	Pathfinder House	Roadside	524102	271540	NO2	YES AQMA 1	8.0	6.0	YES	2.5
Huntingdon 1	23 Lodge Close	Suburban	523177	271627	NO2	NO	3.0	2.0	NO	3.0
Huntingdon 2	19 Nursery Road	Kerbside	524198	271949	NO2	YES AQMA 1	0.0	1.0	NO	1.8
Huntingdon 3	6 George Street	Kerbside	523661	271802	NO2	YES AQMA 1	0.0	1.0	NO	3.0
Huntingdon 4	1 St Peters Road	Kerbside	523435	272464	NO2	YES AQMA 1	3.0	1.0	NO	3.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
Huntingdon 5	18 Blethan Drive	Roadside	522293	272909	NO2	YES AQMA 1	3.0	2.0	NO	3.0
Huntingdon 6	40 Hartford Road	Roadside	524274	271939	NO2	YES AQMA 1	4.0	2.0	NO	3.0
Godmanchester 1	25 Cambridge Villas	Roadside	525319	270571	NO2	NO	3.0	12.0	NO	3.0
Wood Green Animal Shelter	Goat enclosure	Rural	526250	268264	NO2	NO	0.0	235.0	NO	3.0
Fenstanton 1	Hilton Road	Roadside	531427	268397	NO2	YES AQMA 4	20.0	2.0	NO	3.0
Earith 1	52-54 High Street	Roadside	538460	274797	NO2	NO	0.0	1.8	NO	2.0
Fenstanton 3	1 Pear Tree Close	Rural	531063	268063	NO2	NO	6.0	1.5	NO	3.0
St Ives 1	2 The Pound	Urban Background	531206	272334	NO2	NO	5.0	1.0	NO	3.0
St Ives 2	59 Greenfields	Suburban	530850	270286	NO2	NO	6.0	1.5	NO	3.0
St Ives 3	6 Goldie Close	Roadside	529866	272285	NO2	NO	11.0	6.0	NO	3.0
Ramsey 1	5 Blenheim Road	Urban Background	528433	284936	NO2	NO	4.0	2.0	NO	3.0
Yaxley 1	2 London Road	Roadside	517480	292309	NO2	NO	13.0	2.0	NO	3.0
Stibbington 1	7 Great North Road	Roadside	508326	298684	NO2	NO	22.0	2.0	NO	3.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
Alwalton 1	2 Royce Road	Roadside	513132	295723	NO2	NO	11.0	4.0	NO	3.0
Sawtry 1	81 Fen Lane	Suburban	517440	283443	NO2	NO	4.0	2.0	NO	3.0
Alconbury 1	54 Manor Lane	Roadside	518954	276010	NO2	NO	6.0	2.0	NO	3.0
Great Stukeley 1	Church of Jesus Christ - Ermine Street	Roadside	522000	274607	NO2	NO	33.0	1.0	NO	3.0
Huntingdon 7	6 Brampton Road	Roadside	523432	271760	NO2	YES AQMA 1	10.0	2.0	NO	3.0
Huntingdon 8	Main Road	Roadside	525289	272525	NO2	NO	27.0	2.0	NO	3.0
Hilton 1	1 Westbrook Close	Suburban	528836	266538	NO2	NO	10.0	1.0	NO	3.0
Fenstanton 4	25 High Street	Roadside	531729	268370	NO2	NO	1.5	1.0	NO	3.0
Alconbury 2	Lords Ways	Suburban	518955	275520	NO2	NO	10.0	1.0	NO	3.0
Brampton 6	Parish Hall Church Road	Roadside	521487	270803	NO2	NO	19.0	1.0	NO	3.0
Brampton 7	52 Elizabethan Way	Suburban	519874	270948	NO2	NO	7.0	1.5	NO	3.0
Offord D'Arcy 1	42 Gravely Road	Suburban	522127	266105	NO2	NO	11.0	3.0	NO	3.0
Offord Cluny 2	168 High Street	Roadside	521947	267178	NO2	NO	11.0	3.0	NO	3.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
St Neots 10	81 Great North Road	Roadside	516921	258382	NO2	NO	15.0	1.7	NO	2.0
St Neots 11	119 Cambridge Road	Roadside	519925	260291	NO2	NO	0.0	11.0	NO	2.0
St Ives 4	1 Hill Rise	Kerbside	530529	272357	NO2	NO	6.0	1.0	NO	2.0
St Ives 5	93 Needingworth Road	Roadside	531963	272142	NO2	NO	5.0	1.5	NO	2.0
Warboys	Puddock Road	Roadside	531326	281889	NO2	NO	60.0	2.0	NO	2.0

Notes:

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

(2) N/A if not applicable.

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2021 (%) ⁽²⁾	2017	2018	2019	2020	2021
PFH	524102	271540	Roadside	96.62	96.62	31.9	28	37	25	27

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16 (None required).

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

Notes:

The annual mean concentrations are presented as µg/m³.

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

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

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

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

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

Table A.4 – Annual Mean NO₂ Monitoring Results: Non-Automatic Monitoring (µg/m³)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2021 (%) ⁽²⁾	2017	2018	2019	2020	2021
St Neots 1	517869	260132	Kerbside	100.0	100.0	21.6	17.5	18.1	12.2	13.7
St Neots 2	519541	260280	Roadside	100.0	100.0	20.3	20.7	21.4	13.7	14.8
St Neots 3	518925	260503	Urban Background	100.0	100.0	16.9	15.0	15.8	10.9	10.8
St Neots 4	518489	260871	Urban Background	100.0	100.0	15.4	13.9	14.7	10.0	10.2
St Neots 5	518323	260263	Kerbside	100.0	100.0	31.2	28.7	28.8	18.6	21.0
St Neots 6	518433	260321	Kerbside	100.0	100.0	29.9	28.4	29.0	20.4	20.2
St Neots 7	518424	258556	Suburban	100.0	100.0	19.9	17.4	18.7	14.2	13.9
St Neots 8	518707	258260	Suburban	100.0	100.0	20.1	18.8	19.9	12.7	12.4
St Neots 9	516370	259514	Suburban	100.0	100.0	28.1	22.4	23.0	15.5	15.8
Southoe 1	518714	264308	Roadside	100.0	100.0	16.2	16.2	15.5	10.9	10.4
Buckden 1	518981	267370	Roadside	100.0	100.0	20.8	21.9	21.8	13.0	14.3
Buckden 2	519082	267433	Roadside	100.0	100.0	25.6	19.7	22.2	14.4	15.6
Buckden 3	519161	267624	Roadside	100.0	100.0	27.7	25.4	25.7	17.5	17.8

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2021 (%) ⁽²⁾	2017	2018	2019	2020	2021
Buckden 4	519197	267955	Roadside	100.0	100.0	18.7	15.8	17.1	12.0	12.1
Brampton 1	520734	269623	Roadside	100.0	100.0	14.3	13.1	14.1	10.8	10.1
Huntingdon 9	523575	272174	Roadside	100.0	100.0	<u>N/A</u>	<u>N/A</u>	28.2	18.3	21.2
Brampton 3	520155	271561	Roadside	91.7	91.7	23.9	21.0	21.0	13.3	14.5
Brampton 4	519956	271461	Roadside	100.0	100.0	17.4	16.3	16.6	11.2	11.9
Brampton 5	519839	271061	Roadside	100.0	100.0	15.7	13.4	13.6	14.9	11.0
Catworth 1	508409	274876	Rural	100.0	100.0	20.3	15.8	16.4	11.7	11.7
PFH 1, PFH 2, PFH 3	524102	271540	Roadside	100.0	100.0	44.9	43.3	40.1	24.8	26.3
Huntingdon 1	523177	271627	Suburban	100.0	100.0	15.9	17.0	16.5	9.8	9.8
Huntingdon 2	524198	271949	Kerbside	100.0	100.0	25.4	23.5	23.6	14.9	17.0
Huntingdon 3	523661	271802	Kerbside	100.0	100.0	38.8	34.0	35.6	20.5	23.9
Huntingdon 4	523435	272464	Kerbside	100.0	100.0	28.3	27.4	27.2	15.4	17.0
Huntingdon 5	522293	272909	Roadside	100.0	100.0	26.5	24.6	23.0	11.0	11.7
Huntingdon 6	524274	271939	Roadside	100.0	100.0	24.7	21.6	22.4	14.8	14.9

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2021 (%) ⁽²⁾	2017	2018	2019	2020	2021
Godmanchester 1	525319	270571	Roadside	100.0	100.0	22.0	22.1	19.9	9.3	10.9
Wood Green Animal Shelter	526250	268264	Rural	83.3	83.3	14.1	12.7	12.6	9.6	10.4
Fenstanton 1	531427	268397	Roadside	100.0	100.0	31.9	25.0	25.2	11.0	11.0
Earith 1	538460	274797	Roadside	100.0	100.0	N/A	N/A	16.6	10.6	10.3
Fenstanton 3	531063	268063	Rural	100.0	100.0	13.6	12.4	14.0	9.6	9.4
St Ives 1	531206	272334	Urban Background	91.7	91.7	19.0	16.3	16.0	11.3	11.3
St Ives 2	530850	270286	Suburban	100.0	100.0	23.2	19.3	19.3	12.0	13.0
St Ives 3	529866	272285	Roadside	91.7	91.7	16.4	15.9	15.8	10.6	10.6
Ramsey 1	528433	284936	Urban Background	100.0	100.0	18.1	17.2	17.7	11.7	12.8
Yaxley 1	517480	292309	Roadside	100.0	100.0	28.5	27.8	27.1	18.0	19.3
Stibbington 1	508326	298684	Roadside	100.0	100.0	29.8	22.8	23.6	14.7	14.0
Alwalton 1	513132	295723	Roadside	100.0	100.0	20.1	19.2	19.1	12.7	12.6
Sawtry 1	517440	283443	Suburban	100.0	100.0	23.0	20.3	18.0	11.9	13.1
Alconbury 1	518954	276010	Roadside	100.0	100.0	19.2	19.0	17.4	13.4	13.9

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2021 (%) ⁽²⁾	2017	2018	2019	2020	2021
Great Stukeley 1	522000	274607	Roadside	100.0	100.0	18.7	16.4	17.0	10.7	10.2
Huntingdon 7	523432	271760	Roadside	100.0	100.0	37.4	30.7	33.5	18.8	21.4
Huntingdon 8	525289	272525	Roadside	100.0	100.0	23.4	20.5	22.6	14.6	15.1
Hilton 1	528836	266538	Suburban	100.0	100.0	11.9	10.8	12.9	8.5	8.3
Fenstanton 4	531729	268370	Roadside	100.0	100.0	23.1	19.2	20.9	11.5	11.9
Alconbury 2	518955	275520	Suburban	100.0	100.0	15.4	11.2	13.2	9.1	8.8
Brampton 6	521487	270803	Roadside	91.7	91.7	23.6	20.7	22.5	15.1	16.8
Brampton 7	519874	270948	Suburban	100.0	100.0	14.5	11.6	14.9	11.0	11.3
Offord D'Arcy 1	522127	266105	Suburban	100.0	100.0	11.4	10.7	13.2	8.8	8.8
Offord Cluny 2	521947	267178	Roadside	100.0	100.0	<u>N/A</u>	16.0	19.3	10.7	12.0
St Neots 10	516921	258382	Roadside	100.0	100.0	<u>N/A</u>	<u>N/A</u>	24.7	16.9	17.8
St Neots 11	519925	260291	Roadside	100.0	100.0	<u>N/A</u>	<u>N/A</u>	18.7	11.8	12.2
St Ives 4	530529	272357	Kerbside	100.0	100.0	<u>N/A</u>	<u>N/A</u>	27.6	18.6	19.8
St Ives 5	531963	272142	Roadside	100.0	100.0	<u>N/A</u>	<u>N/A</u>	28.1	21.3	24.3

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2021 (%) ⁽²⁾	2017	2018	2019	2020	2021
Warboys	531326	281889	Roadside	83.3	83.3	<u>N/A</u>	<u>N/A</u>	10.9	7.5	7.7

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16 (None required).

Diffusion tube data has been bias adjusted.

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

Notes:

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

Exceedances of the NO_2 annual mean objective of $40\mu\text{g}/\text{m}^3$ are shown in **bold**.

NO_2 annual means exceeding $60\mu\text{g}/\text{m}^3$, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**.

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

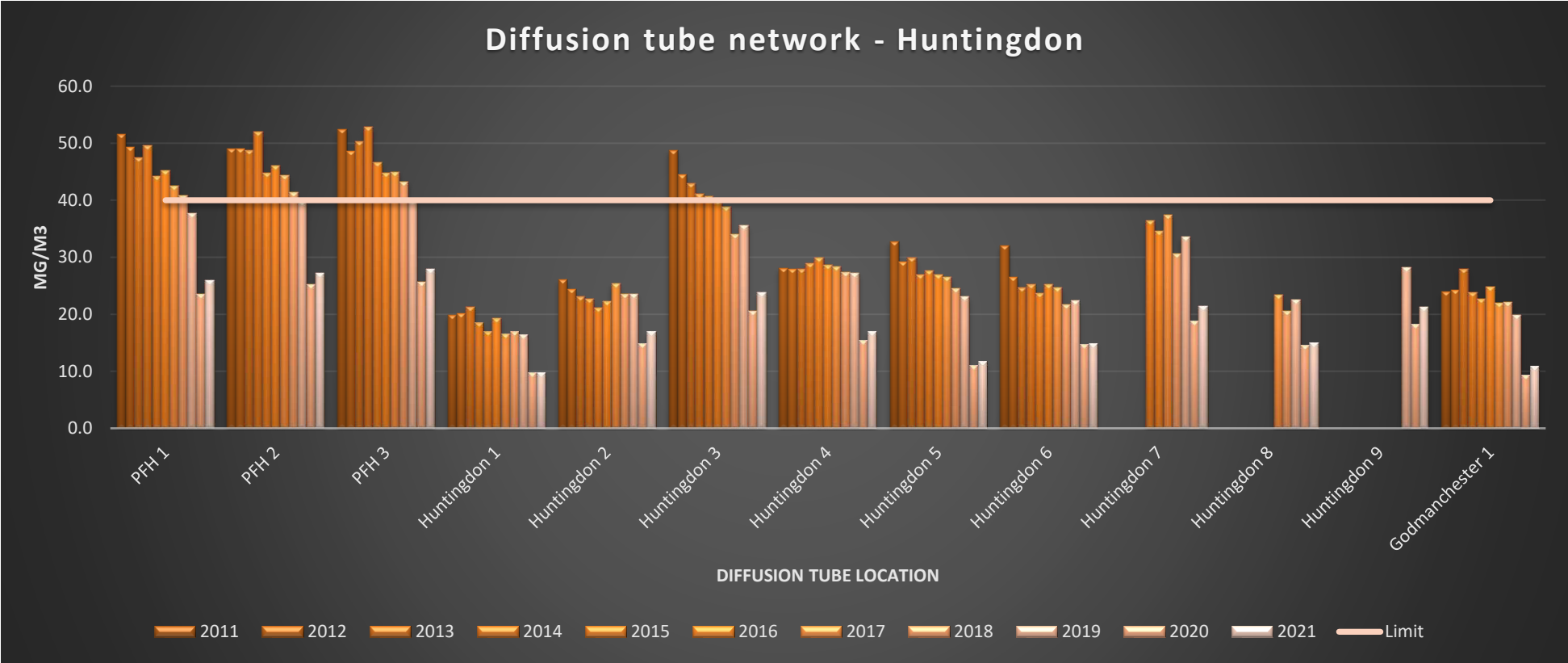
Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

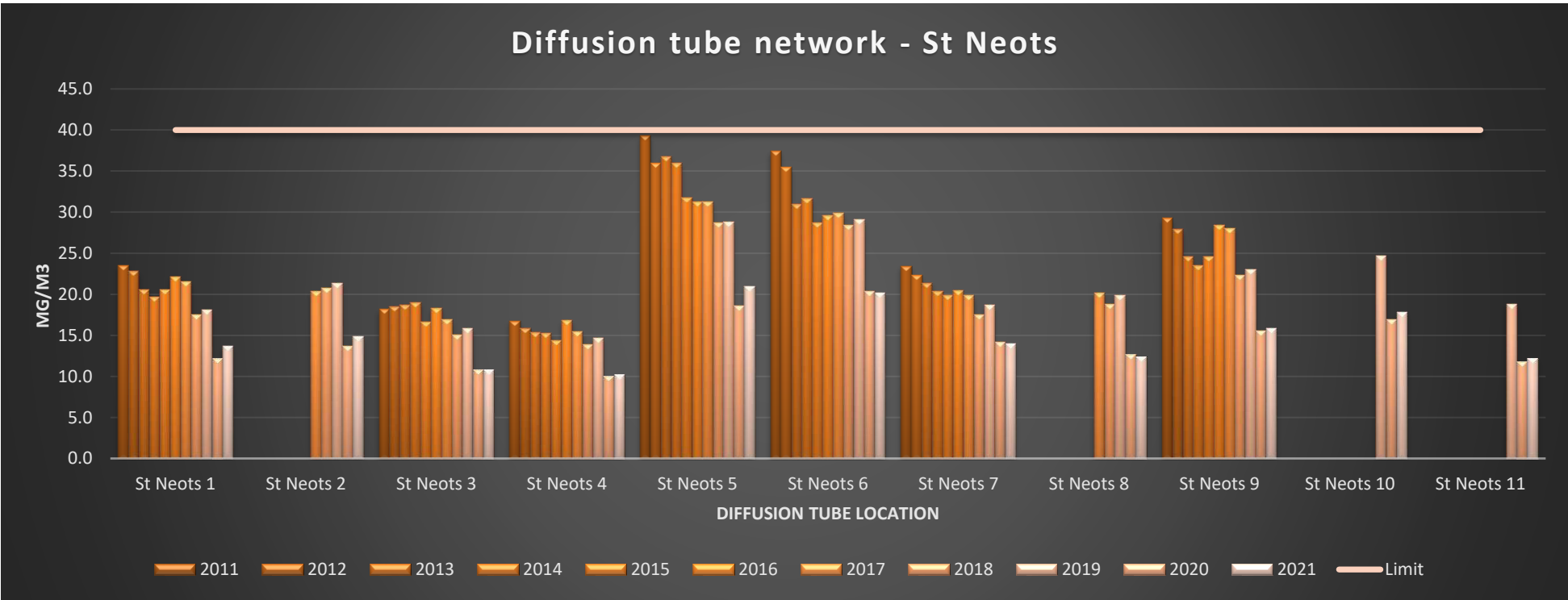
(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

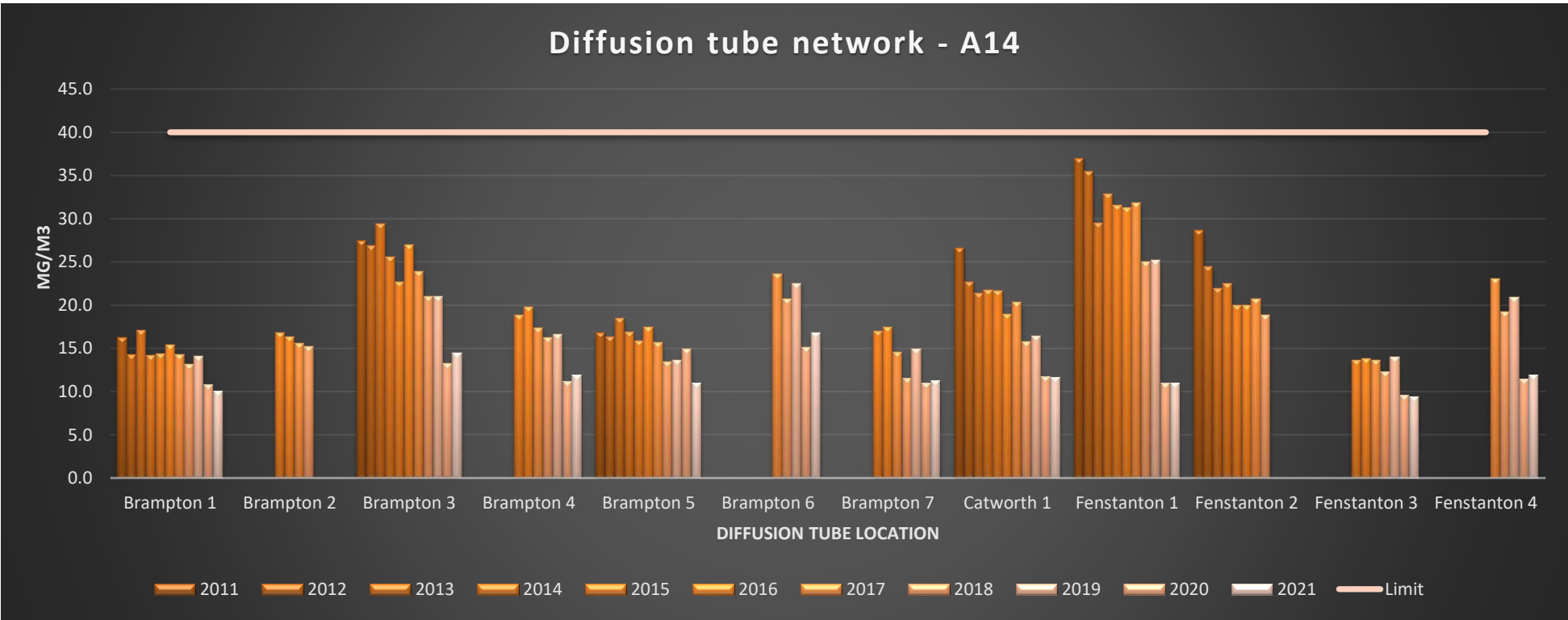
(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

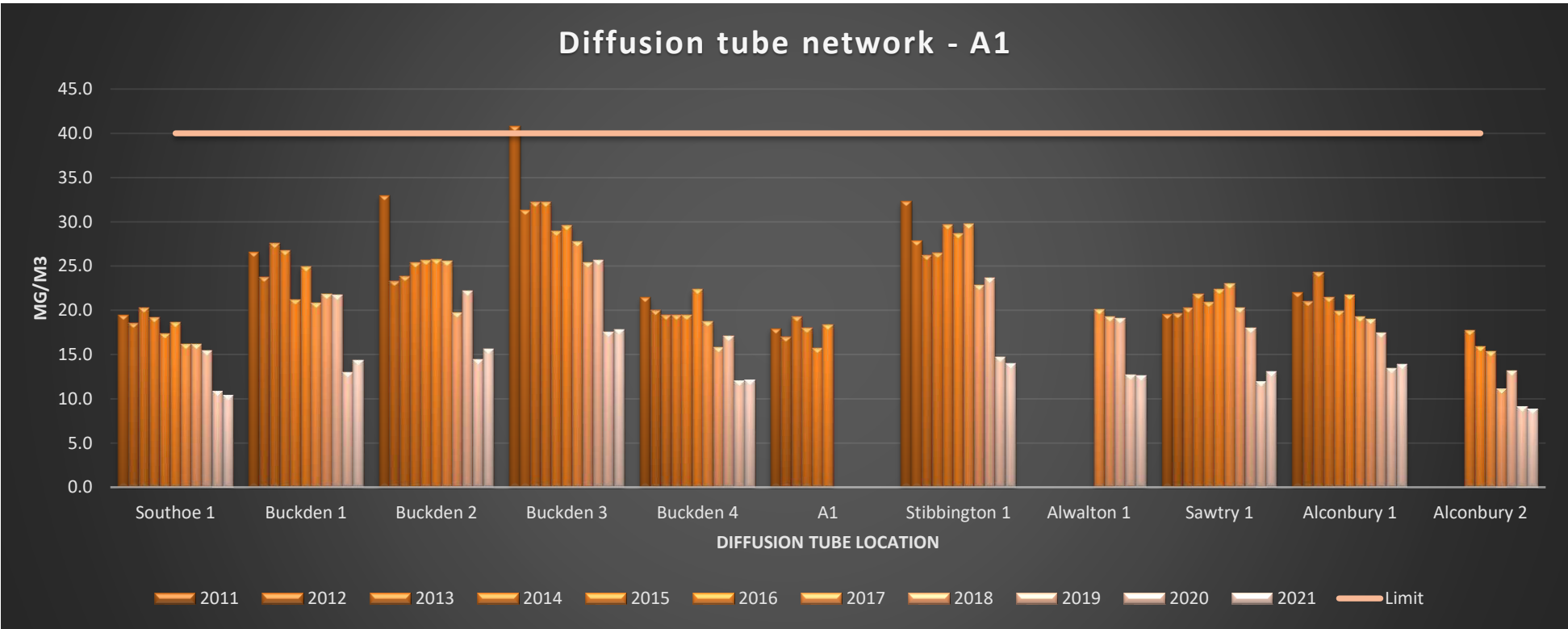
Figure A.1 – Trends in Annual Mean NO₂ Concentrations

The presentation of the following charts has been completed in line with Defra’s requirements to take account of readers who are colour blind. If you have any issues viewing the charts please contact us on the details at the top of this report and we can provide the information in another format.









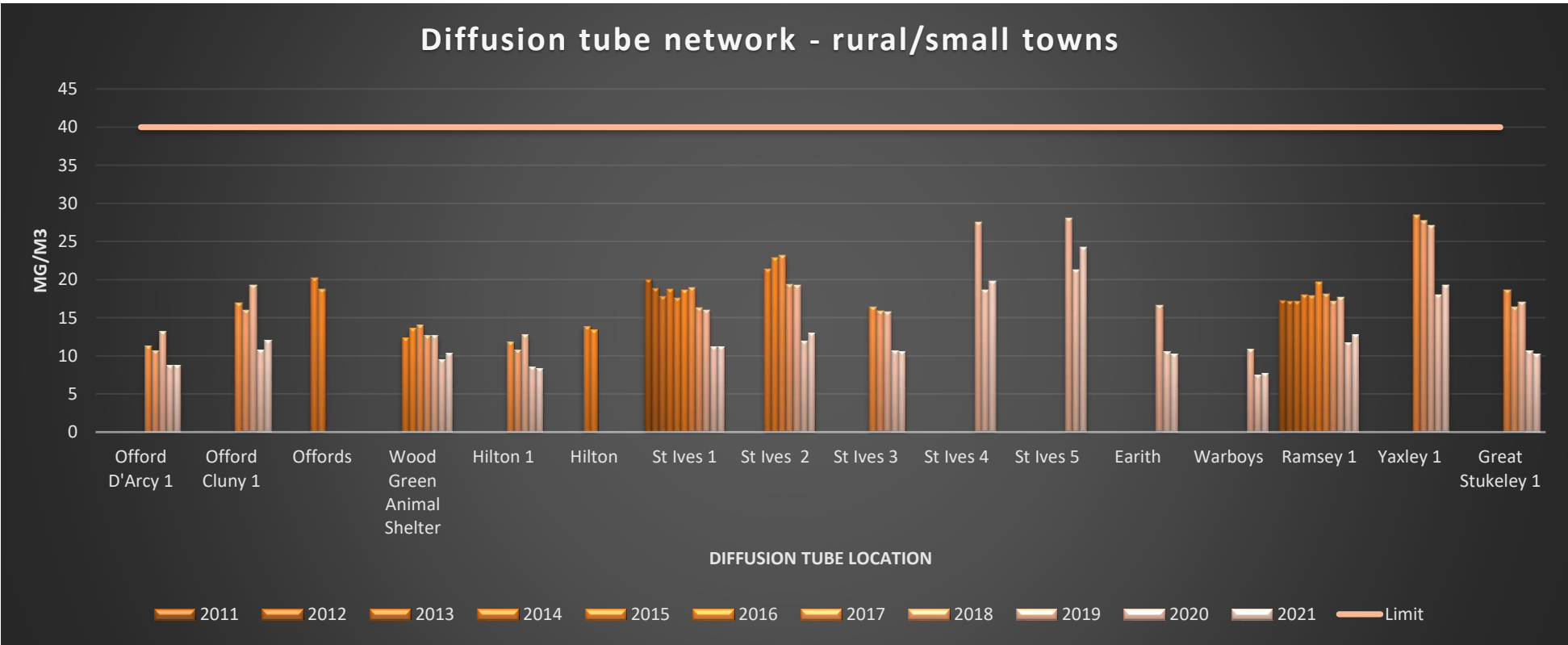


Table A.5 – 1-Hour Mean NO₂ Monitoring Results, Number of 1-Hour Means > 200µg/m³

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2021 (%) ⁽²⁾	2017	2018	2019	2020	2021
PFH	524102	271540	Roadside	96.62	96.62	0	0	0	0	0

Notes:

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

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

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

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

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

Table A.6 – Annual Mean PM₁₀ Monitoring Results (µg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2021 (%) ⁽²⁾	2017	2018	2019	2020	2021
PFH	524102	271540	Roadside	99.67	99.67	18.4	No Data	15.74	14	15

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16 (None required).

Notes:

The annual mean concentrations are presented as µg/m³.

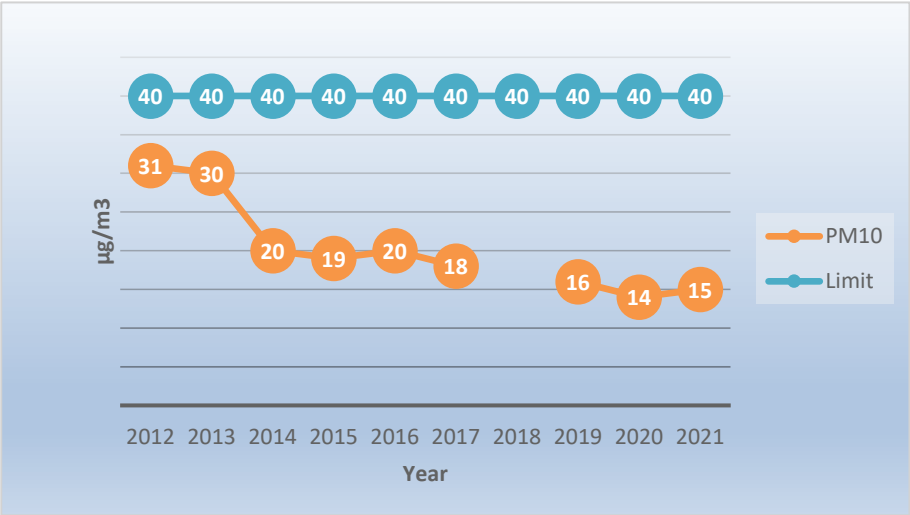
Exceedances of the PM₁₀ annual mean objective of 40µg/m³ are shown in **bold**.

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

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

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

Figure A.2 – Trends in Annual Mean PM₁₀ Concentrations



The presentation of this chart has been completed to take account of readers who are colour blind, if you have any issues viewing the chart please contact us on the details at the top of this report and we can provide the information in another format.

Table A.7 – 24-Hour Mean PM₁₀ Monitoring Results, Number of PM₁₀ 24-Hour Means > 50µg/m³

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2021 (%) ⁽²⁾	2017	2018	2019	2020	2021
PFH	524102	271540	Roadside	99.67	99.67	7	No Data	0	0	1

Notes:

Results are presented as the number of 24-hour periods where daily mean concentrations greater than 50µg/m³ have been recorded.

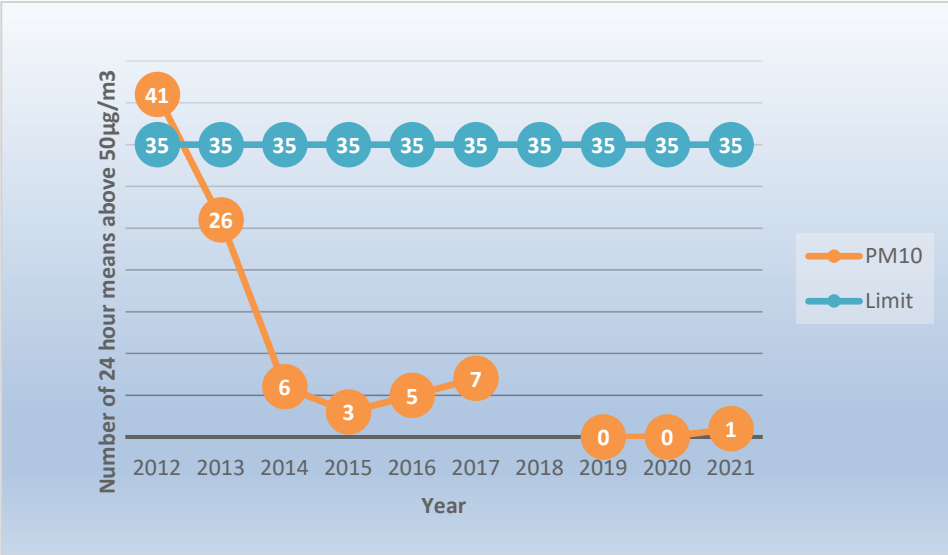
Exceedances of the PM₁₀ 24-hour mean objective (50µg/m³ not to be exceeded more than 35 times/year) are shown in **bold**.

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

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

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

Figure A.3 – Trends in Number of 24-Hour Mean PM₁₀ Results > 50µg/m³



The presentation of this chart has been completed to take account of readers who are colour blind, if you have any issues viewing the chart please contact us on the details at the top of this report and we can provide the information in another format.

Table A.8 – Annual Mean PM_{2.5} Monitoring Results (µg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2021 (%) ⁽²⁾	2017	2018	2019	2020	2021
PFH	524102	271540	Roadside	99.67	99.67	10.6	11.7	8.67	8	8

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16 (None required).

Notes:

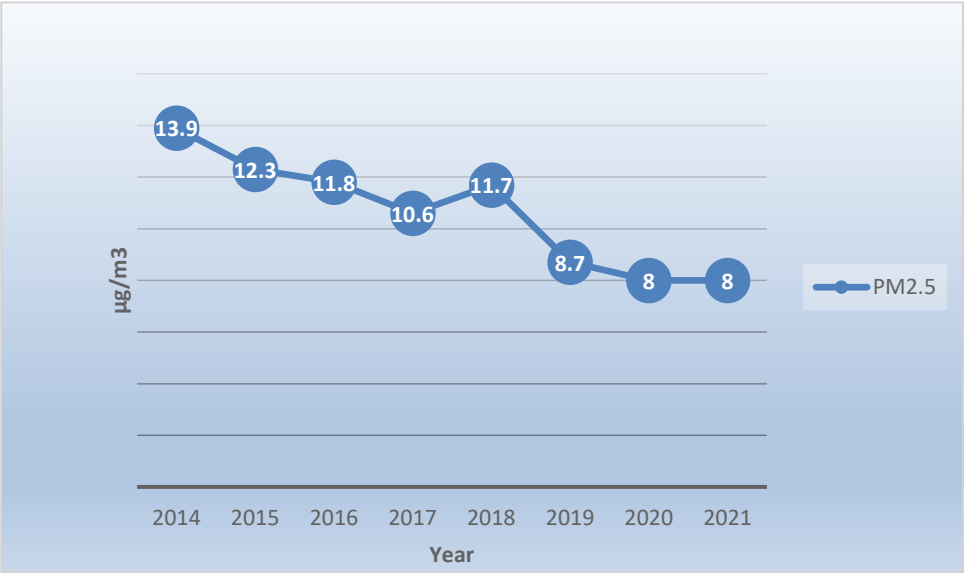
The annual mean concentrations are presented as µg/m³.

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

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

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

Figure A.4 – Trends in Annual Mean PM_{2.5} Concentrations



The presentation of this chart has been completed to take account of readers who are colour blind, if you have any issues viewing the chart please contact us on the details at the top of this report and we can provide the information in another format.

Appendix B: Full Monthly Diffusion Tube Results for 2021

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

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.72)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
St Neots 1	517869	260132	28.4	22	19.8	16.7	12.3	13.4	11	13.2	19.3	21	26.7	23.8	19.0	13.7	-	
St Neots 2	519541	260280	28.7	25.3	22.6	18.7	13	8.5	15.5	15.6	23	20.4	30.5	25.2	20.6	14.8	-	
St Neots 3	518925	260503	26	16.9	15.8	13.5	9.3	9.7	9.7	9.1	14.3	17.7	15.6	22	15.0	10.8	-	
St Neots 4	518489	260871	21.8	17.7	14.3	7.5	7.3	8	9.6	8.7	15.9	16.2	21.5	21.9	14.2	10.2	-	
St Neots 5	518323	260263	35.4	32.6	31.3	29.3	15.7	24.1	22	21.2	31.5	29.4	40.1	36.8	29.1	21.0	-	
St Neots 6	518433	260321	28.6	36.8	26.2	23.7	17.1	20.7	25.7	18.6	35.4	32.2	36.4	34.7	28.0	20.2	-	
St Neots 7	518424	258556	31.4	24.3	21.3	15.5	4.6	11.9	10.4	13.2	20.2	21.1	28.5	29.6	19.3	13.9	-	
St Neots 8	518707	258260	22.3	21.1	18.5	12.7	7.1	12.5	8.7	12.6	20.9	22.4	26.4	21.7	17.2	12.4	-	
St Neots 9	516370	259514	35.1	22.9	26.6	19.4	8.1	14.9	15.4	14.1	19	25.9	31.9	30.3	22.0	15.8	-	
Southoe 1	518714	264308	18.7	19.8	13.6	15.7	6.6	11.6	11.4	10.4	18	13.9	15.5	18.6	14.5	10.4	-	
Buckden 1	518981	267370	17.7	23.2	17.6	24.4	10.2	16.9	21.1	17.4	27.3	17.1	18.9	26.6	19.9	14.3	-	
Buckden 2	519082	267433	25.5	19.3	24.8	21.1	15.6	19.4	15.4	18.7	24.6	23.5	28.6	24	21.7	15.6	-	
Buckden 3	519161	267624	30.9	24.9	27.8	15.7	21.7	19	18.9	19.1	29.9	28.8	31	29.5	24.8	17.8	-	
Buckden 4	519197	267955	21.8	20.3	20.4	17	10.7	11.1	8.7	11.8	16.7	19.5	23.2	20.5	16.8	12.1	-	
Brampton 1	520734	269623	22.5	13.1	18.4	10.4	2.4	8.3	8.3	8.5	18	18.7	19.2	20.6	14.0	10.1	-	
Huntingdon 9	523575	272174	37.4	32.3	29.7	28.5	26.4	24.6	25.9	25	29.8	26.1	33.7	34	29.5	21.2	-	
Brampton 3	520155	271561	31.3	21.5	20.8	11		13.3	14.4	18.7	20.7	18.2	25.6	25.6	20.1	14.5	-	
Brampton 4	519956	271461	26.5	20.3	17.9	13.5	10	10.1	10.9	13.2	17.6	18.1	20.2	20.1	16.5	11.9	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.72)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
Brampton 5	519839	271061	23.9	17.2	17.7	12.6	10.2	9	10.4	8.9	16.9	17.2	21.6	17.9	15.3	11.0	-	
Catworth 1	508409	274876	22.7	15.3	19.1	11	12.9	11.5	11.4	11.8	18.9	19.6	21.2	19.4	16.2	11.7	-	
PFH 1, 2 and 3 (average)	524102	271540	40.1	37.5	36.5	37.0	32.4	37.9	37.8	31.9	47.5	37.3	38.8	35.2	37.5	26.3	-	Triplicate Site with PFH 1, PFH 2 and PFH 3
Huntingdon 1	523177	271627	22.1	14	15.7	10.1	8.1	7.9	17.1	8.1	15.3	13.3	13.7	17.2	13.6	9.8	-	
Huntingdon 2	524198	271949	30.5	23.9	22.8	27	17.6	19.8	21.2	13.7	29.4	23.3	27.9	26.1	23.6	17.0	-	
Huntingdon 3	523661	271802	37	31.7	30.2	29.7	35	28.8	25.6	24.7	40.7	38.8	38.3	37.3	33.2	23.9	-	
Huntingdon 4	523435	272464	28.7	24.4	25.1	21	20.2	18.2	20.2	19.7	27.9	24.5	26.6	26	23.5	17.0	-	
Huntingdon 5	522293	272909	25.9	18.2	18	14.4	13	10.8	10.4	10.4	18.3	16.5	21	18.2	16.3	11.7	-	
Huntingdon 6	524274	271939	29.3	17.1	21.2	14	16.6	13.6	15.2	16.2	24.1	27.1	31.1	23.6	20.8	14.9	-	
Godmanchester 1	525319	270571	19.8	21.1	15.5	13.8	9.7	11.1	10.9	10.4	18.4	13.4	18.2	18.7	15.1	10.9	-	
Wood Green Animal Shelter	526250	268264	19.6	17.2	11.5			8	7.9	10.4	15.5	16	22.6	16.1	14.5	10.4	-	
Fenstanton 1	531427	268397	21.6	18.5	14.8	13	10	10.1	10.6	9.8	16.4	18.1	22.1	18.7	15.3	11.0	-	
Earith 1	538460	274797	16	18.5	18.2	15	10.7	9.4	8.3	10.3	14.8	13.4	19.2	18.1	14.3	10.3	-	
Fenstanton 3	531063	268063	20.4	15.3	12.6	9.7	9.7	8.2	8.7	9	13.6	14.6	17.3	17.5	13.1	9.4	-	
St Ives 1	531206	272334	23.1	18.1	16.7	12.6	13.2	9.7	7.5	10.3		18	22.9	20.3	15.7	11.3	-	
St Ives 2	530850	270286	27	19.2	20.3	16	12.2	13.4	11.3	14.1	19.1	20.9	26.7	17.2	18.1	13.0	-	
St Ives 3	529866	272285	20.5	17.2		11.5	11.8	8.3	9.5	10.1	18.1	17.2	18.6	19.6	14.8	10.6	-	
Ramsey 1	528433	284936	24.6	20.3	16.8	15.7	12.7	12.3	12.8	11.4	20.9	19.3	23.6	22.8	17.8	12.8	-	
Yaxley 1	517480	292309	33.9	27.8	26.4	20.8	23.6	24.1	19.5	23.1	31.4	27.5	34.2	28.8	26.8	19.3	-	
Stibbington 1	508326	298684	25.6	19.2	19.1	16.1	9.4	14.2	14.2	15.4	24.8	25.1	24.9	24.7	19.4	14.0	-	
Alwalton 1	513132	295723	23.5	19.6	16.3	16.9	9.6	14.7	14.5	11.6	24.1	18.4	22.4	18	17.5	12.6	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.72)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
Sawtry 1	517440	283443	25.7	21.8	15.1	18.7	13.5	13	13.3	13.5	21.8	14.9	24.2	22.6	18.2	13.1	-	
Alconbury 1	518954	276010	25.9	24.8	20.6	19.7	18.5	13.8	15.1	10.9	24.7	17.4	19.8	20.9	19.3	13.9	-	
Great Stukeley 1	522000	274607	21.8	15.6	14.2	11.4	11.7	10.7	6.4	9.4	15	17.2	19.3	17.8	14.2	10.2	-	
Huntingdon 7	523432	271760	35.5	27	28.6	27.4	27.1	27.3	21	24.2	37.7	31.5	39.5	30.6	29.8	21.4	-	
Huntingdon 8	525289	272525	28.1	24.7	18.5	20.4	6.4	17.3	16.7	16.1	26.2	25.1	27.4	24.2	20.9	15.1	-	
Hilton 1	528836	266538	18	13.1	11.5	10.3	8	7.4	6.6	5.5	13.2	12.7	17	15.3	11.6	8.3	-	
Fenstanton 4	531729	268370	24.3	15.9	16.5	16.7	14.1	10	11.5	9.6	18.7	17.8	22.5	21.1	16.6	11.9	-	
Alconbury 2	518955	275520	17.7	15.2	11.8	9.9	8.8	6.5	8	9.4	13.7	16	15	15.4	12.3	8.8	-	
Brampton 6	521487	270803	29.8	23.8	25.4	20.4	12.6	17.8	17.6		23.9	25.6	31.5	28.3	23.3	16.8	-	
Brampton 7	519874	270948	23.9	15.3	16.9	11.9	11.8	9.9	9.3	10	16.1	19.8	22.7	20.9	15.7	11.3	-	
Offord D'Arcy 1	522127	266105	17.3	12.3	13.8	8.8	4.1	7.9	6.9	7	13.1	16.2	19.8	19.1	12.2	8.8	-	
Offord Cluny 2	521947	267178	20.6	18.9	18.1	14.3	11.1	11.9	8.6	13.5	18.8	20.6	22	22.2	16.7	12.0	-	
St Neots 10	516921	258382	28.8	29.7	23.6	26.1	16.3	21.9	21.5	15	27.8	23.9	32.5	29.6	24.7	17.8	-	
St Neots 11	519925	260291	24.6	20.8	15.4	10.5	7	13	15.2	13	21	18.5	23	21.3	16.9	12.2	-	
St Ives 4	530529	272357	33.7	29.5	27.7	25.4	23.9	19.7	23.4	15	34.9	26.5	38.6	32.3	27.6	19.8	-	
St Ives 5	531963	272142	32.8	34.1	32.7	36.7	27.3	32.5	31.1	26	36.4	38.2	42.2	34.6	33.7	24.3	-	
Warboys	531326	281889	14.8	9.8	9	8.6	6.8			7	11.2	12.8	15	12.6	10.8	7.7	-	

- All erroneous data has been removed from the NO₂ diffusion tube dataset presented in Table B.1.
- Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16 (None required).
- Local bias adjustment factor used.
- National bias adjustment factor used.
- Where applicable, data has been distance corrected for relevant exposure in the final column (None required).
- Huntingdonshire District Council confirm that all 2021 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.

Notes:

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

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

See Appendix C for details on bias adjustment and annualisation.

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

New or Changed Sources Identified Within Huntingdonshire District Council During 2021

One of the two crematoria that gained permission during 2020 became operational in 2021 (construction on the other has not yet commenced). The emissions from this are covered by the Environmental Permitting regime.

Continued residential and industrial development is taking place, but Huntingdonshire District Council has not identified any significant new sources relating to air quality within the reporting year of 2021. See page iv above for more detail.

Additional Air Quality Works Undertaken by Huntingdonshire District Council During 2021

Huntingdonshire District Council has not completed any additional studies relating to the development of action plan measures or the declaration, amendment, or revocation of an AQMA within the reporting year of 2021.

QA/QC of Diffusion Tube Monitoring

Huntingdonshire District Council currently have a contract with SOCOTEC to provide and analyse our diffusion tubes. The method of preparation is by spiking acetone: triethanolamine (50:50) onto the grids prior to the tubes being assembled. Samples are analysed in accordance with SOCOTEC's standard operating procedure ANU/SOP/1015. This method meets the guidelines set out in DEFRA's *'Diffusion Tubes For Ambient NO₂ Monitoring: Practical Guidance.'* The analysis of diffusion tube samples to determine the amount of nitrogen dioxide present on the tube is also within the scope of SOCOTEC's UKAS schedule. In the AIR PT inter-comparison scheme for comparing spiked Nitrogen Dioxide diffusion tubes, SOCOTEC currently holds the highest rank of a Satisfactory laboratory.

Diffusion tube monitoring has been completed in adherence with the Defra 2021 Diffusion Tube Monitoring Calendar.

Diffusion Tube Annualisation

All diffusion tube monitoring locations within the district of Huntingdonshire recorded data capture of 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualisation, which is again not applicable for HDC.

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2021 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG16 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO₂ continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Huntingdonshire District Council have applied a local bias adjustment factor of 0.72 to the 2021 monitoring data. A summary of bias adjustment factors used by Huntingdonshire District Council over the past five years is presented in Table C.1.

The local bias adjustment factor was gained utilising information from the co-location study at Pathfinder House in Huntingdon and has been completed in line with guidance provided within LAQM.TG16. Further information can be viewed in Table C.2 below.

Table C.1 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2021	Local	-	0.72
2020	Local	-	0.68
2019	National	03/20	0.75
2018	National	03/19	0.76
2017	National	03/18	0.77

NO₂ Fall-off with Distance from the Road

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

Distance correction should be considered at any monitoring site where the annual mean concentration is greater than 36µg/m³ and the monitoring site is not located at a point of relevant exposure. Due to the results gained no diffusion tube NO₂ monitoring locations within Huntingdonshire required distance correction during 2021.

QA/QC of Automatic Monitoring

During 2021 Huntingdonshire District Council held a Service Contract with Acoem as well as a contract with Ricardo to provide independent Quality Assurance/Quality Control audits and data management, including ratification. QA/QC and servicing reports are available on request. Fully ratified results are available online at the Air Quality England website at https://www.airqualityengland.co.uk/site/data?site_id=HUN01 where data can be downloaded. All automatic monitoring data within the ASR is fully ratified.

During 2021 the automatic calibration system for the NO_x monitor was replaced with a standard manual system due to issues with the gas cylinder oxidising. This means an officer visits the site and completes a calibration every 2 weeks as part of the Local Site Operator (LSO) duties.

Servicing and QA/QC are completed on a six-monthly basis.

PM₁₀ and PM_{2.5} Monitoring Adjustment

The FIDAS 200 particulate monitor utilised within Huntingdonshire does not require the application of a correction factor for PM₁₀. However, for PM_{2.5} a factor of 0.9434 is applied. This follows section 7.162 in TG(16) - <https://laqm.defra.gov.uk/documents/LAQM-TG16-April-21-v1.pdf>. The data downloaded from the AQE website already has this correction factor applied.

Automatic Monitoring Annualisation

All automatic monitoring locations within Huntingdonshire recorded data capture of greater than 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualization, which is again not applicable for Huntingdonshire District Council.

NO₂ Fall-off with Distance from the Road

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

As mentioned above under the diffusion tube section, distance correction should be considered at any monitoring site where the annual mean concentration is greater than 36µg/m³ and the monitoring site is not located at a point of relevant exposure. Due to the results obtained at the automatic NO₂ monitoring location within Huntingdonshire, no distance correction was required during 2021.

Table C.2 – Local Bias Adjustment Calculation

	Local Bias Adjustment Input 1	Local Bias Adjustment Input 2	Local Bias Adjustment Input 3	Local Bias Adjustment Input 4	Local Bias Adjustment Input 5
Periods used to calculate bias	11				
Bias Factor A	0.72 (0.67 – 0.77)				
Bias Factor B	39% (29% - 48%)				
Diffusion Tube Mean ($\mu\text{g}/\text{m}^3$)	37				
Mean CV (Precision)	7				
Automatic Mean ($\mu\text{g}/\text{m}^3$)	26				
Data Capture	100%				
Adjusted Tube Mean ($\mu\text{g}/\text{m}^3$)	26 (25 – 28)				

Notes:

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

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

Figure D.1 – Map of Non-Automatic Monitoring Site



Figure D.2 – Map of Huntingdon AQMA Diffusion Tube NO₂ monitoring locations:

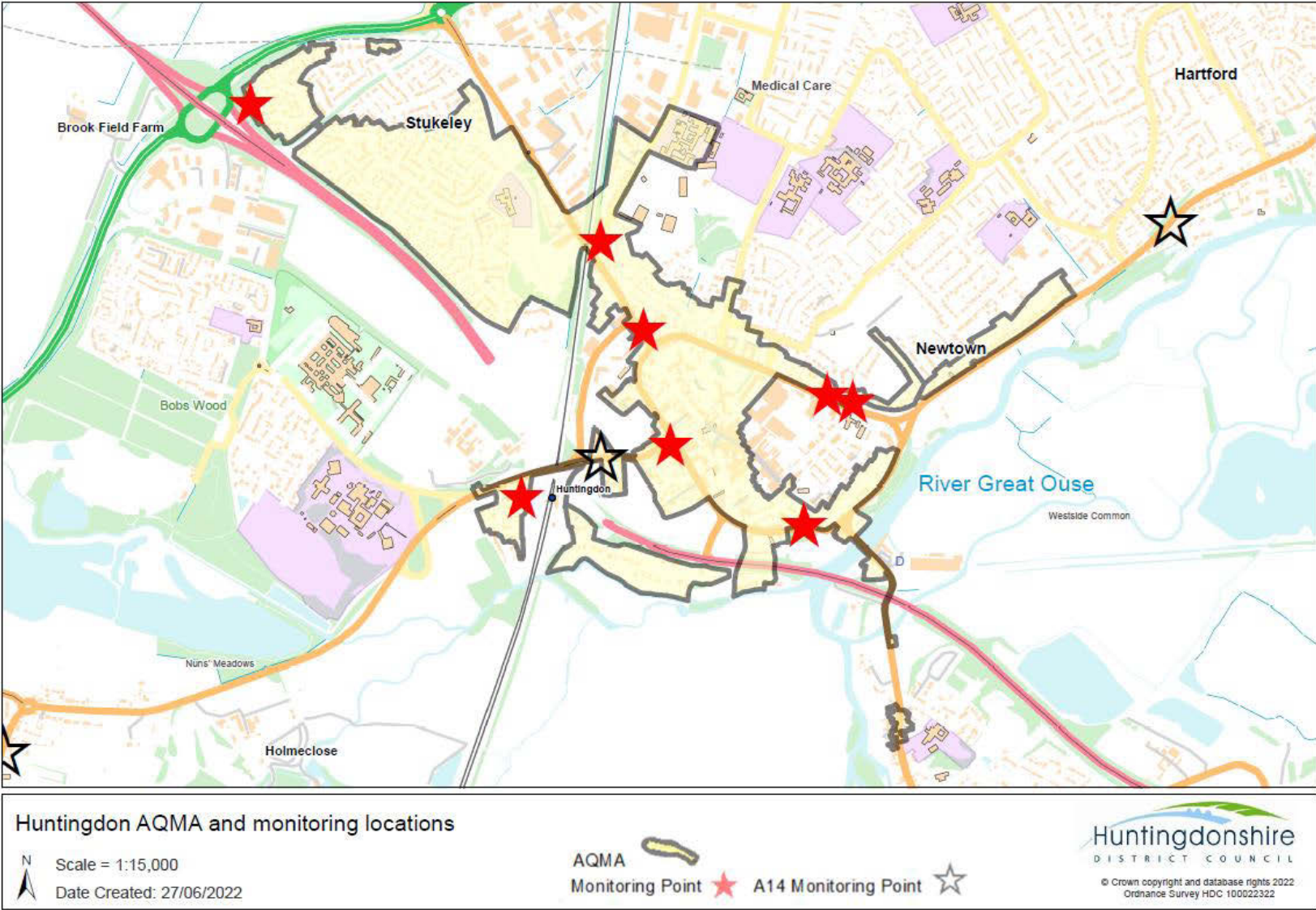


Figure D.3 – Map of St Neots AQMA Diffusion Tube NO₂ monitoring locations:

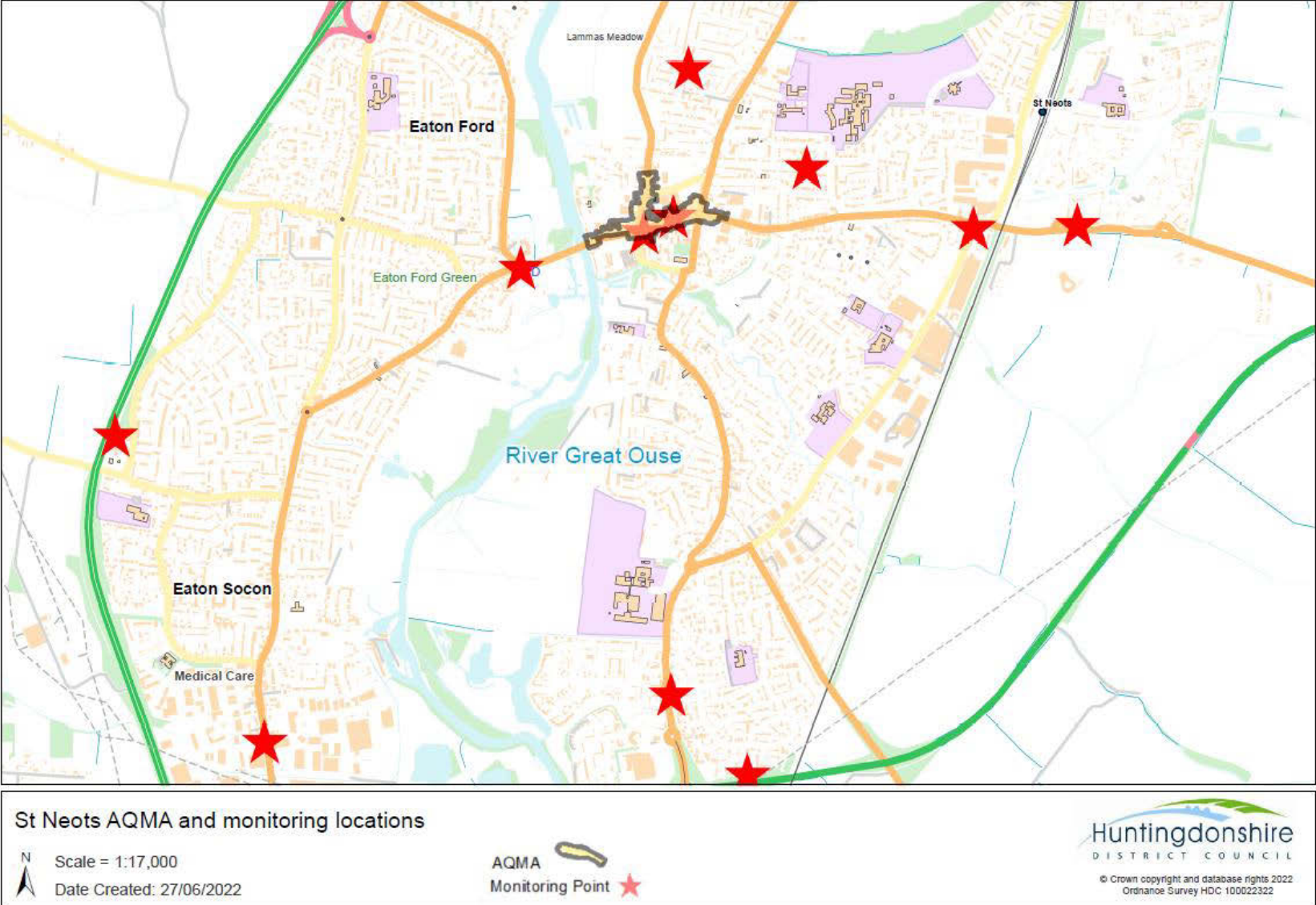


Figure D.4 – Map of A14 Fenstanton AQMA Diffusion Tube NO₂ monitoring locations:



Figure D.5 – Map of Brampton AQMA Diffusion Tube NO₂ monitoring locations:



Figure D.6 – Map of the Automatic NO₂, PM₁₀ and PM_{2.5} monitoring location:

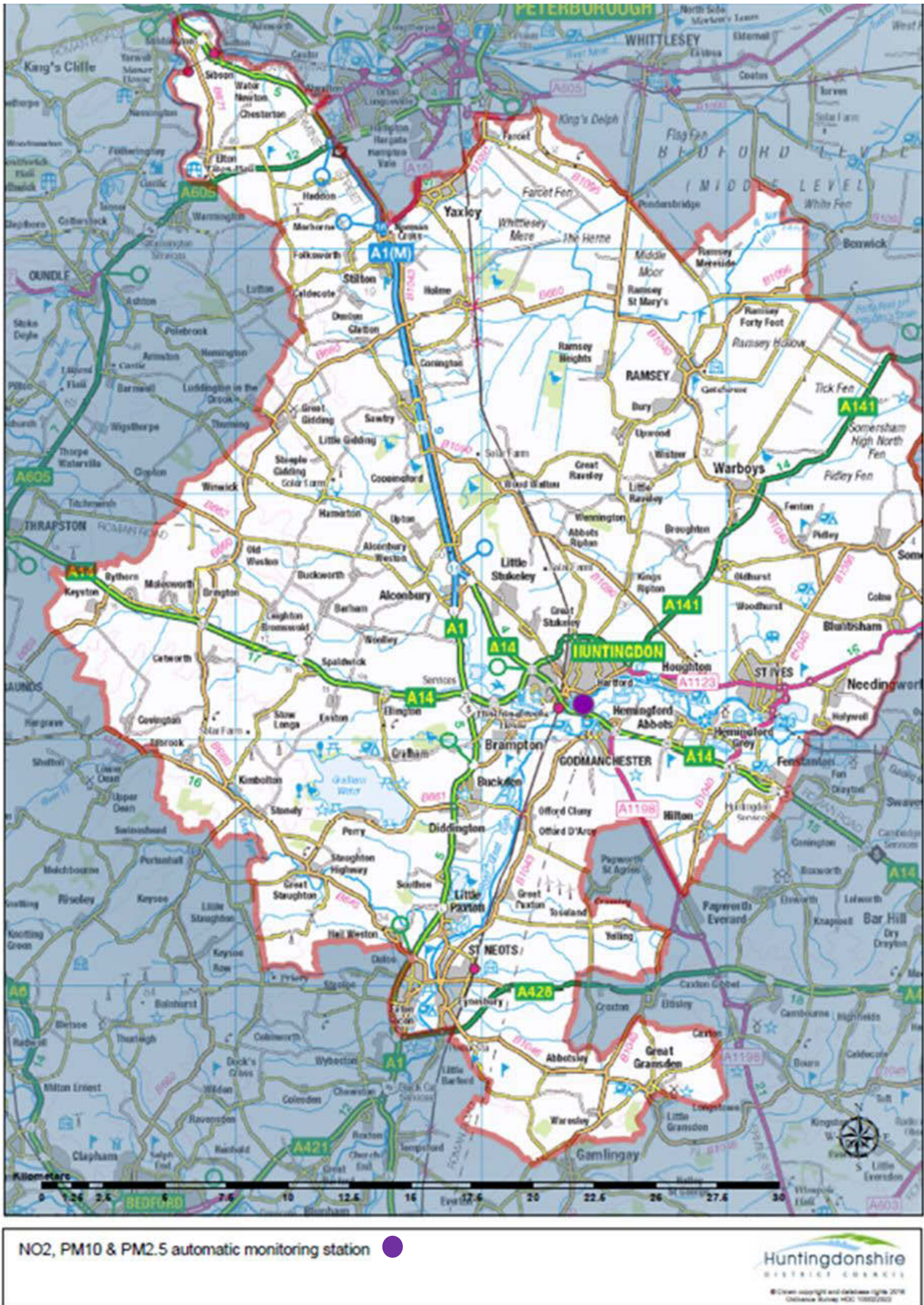
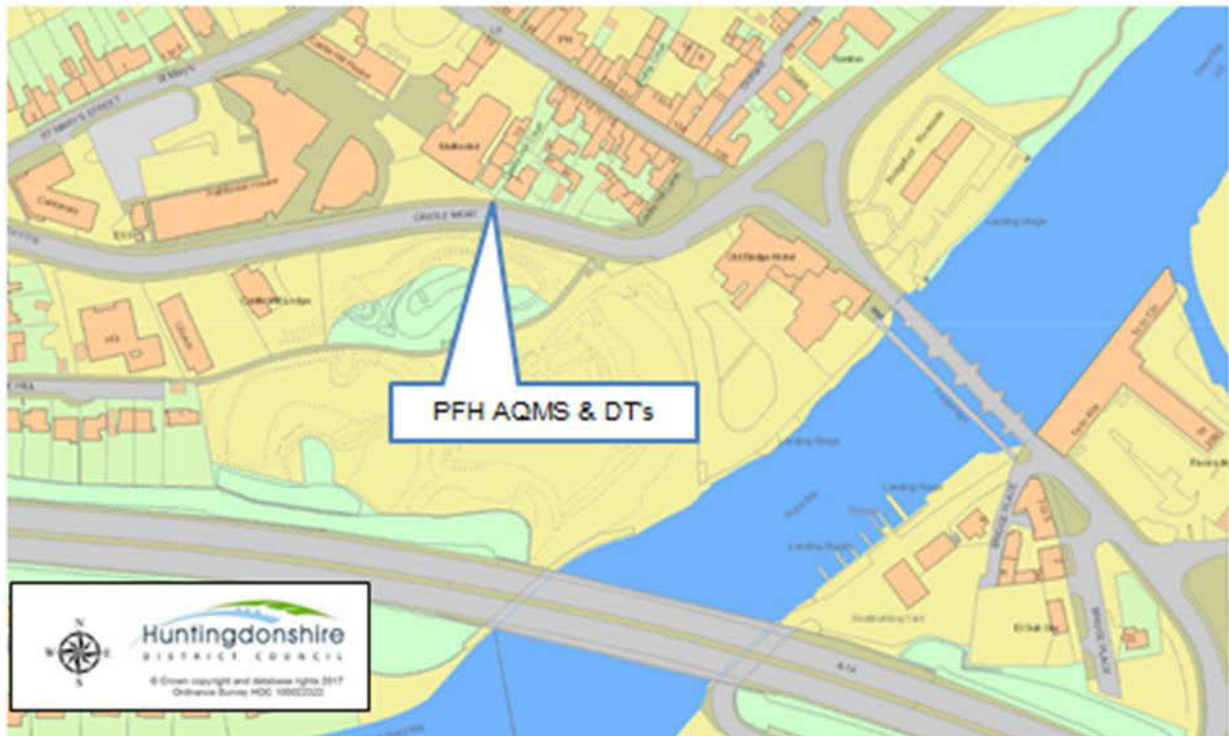


Figure D.7 – Map of the Automatic NO₂, PM₁₀ and PM_{2.5} monitoring location:



Figure D.8 – Map of the Automatic NO₂, PM₁₀ and PM_{2.5} monitoring location:



Please note – The AQMS can be seen in relation to the AQMA, on figure D2 as 'PFH'.

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England⁹

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

⁹ The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

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
AQMS	Air Quality Monitoring Station
ASR	Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by National Highways
EU	European Union
FDMS	Filter Dynamics Measurement System
HDC	Huntingdonshire District Council
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO ₂	Sulphur Dioxide

References

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