



2019 Air Quality Annual Status Report (ASR)

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

June 2019

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Report Reference number	ASR2019
Date	June 2019

Executive Summary: Air Quality in Our Area

Air Quality in York

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

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion³.

City of York Council currently has two Air Quality Management Areas (AQMAs) where the health based national air quality objectives for nitrogen dioxide (NO₂) are currently exceeded. These AQMAs are located in the city centre (AQMA Order No.5) and in Fulford (AQMA Order No.2). A third AQMA for NO₂ existed on Salisbury Terrace between 2012 and 2017 (AQMA Order No.3). Following an Executive Member Decision Session in August 2017, this AQMA was revoked in December 2017⁴. City of York Council has a statutory duty to try to reduce NO₂ concentrations within the current AQMAs and additional obligations in relation to the protection of public health and reduction of greenhouse gas emissions. The main air pollutants of concern in York are NO₂ and particulate matter (PM). Typically traffic is responsible for around 50-70% of the total NO₂ at any particular location in the city, although the exact amount varies according to proximity to roads and other emission sources.

Recent air pollution monitoring data for York (2018) indicates that the annual average air quality objective for NO₂ is still being breached at a number of locations around the inner ring road, within the city centre AQMA. However, annual mean NO₂ concentrations monitored at all but one real-time monitoring station either decreased or remained the same in 2018 compared with levels monitored in 2017.

¹ Environmental equity, air quality, socioeconomic status and respiratory health, 2010

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

³ Defra. Abatement cost guidance for valuing changes in air quality, May 2013

⁴ Annual Mean Concentrations of NO₂ had remained below objective levels for more than 3 years along Salisbury Terrace and hence the AQMA was revoked in December 2017

The only exception was Gillygate, where annual mean concentrations of NO₂ increased by 7.8%. Concentrations of NO₂ monitored at Gillygate in 2018 were comparable to those monitored in 2016. Despite this exception, the general downward trend in NO₂ concentrations monitored across the city since 2012 has continued in 2018.

With respect to the city centre AQMA, exceedances of the health based annual mean NO₂ objective of 40µg/m³ were monitored in the Gillygate, Holgate, Lawrence Street and Rougier Street/George Hudson Street technical breach areas in 2018. Whilst maximum annual mean concentrations of NO₂ monitored in the Nunnery Lane/Prices Lane and Fishergate technical breach areas were below the objective at 35.6µg/m³ and 36.1µg/m³ respectively, they are still considered elevated. It is therefore not considered appropriate to reduce the size of the city centre AQMA at this time. This will be reviewed again as part of City of York Council's next Annual Status Report (due June 2020).

Concentrations of NO₂ monitored in the Fulford Road AQMA in 2018 were below the annual mean objective of 40µg/m³. The highest recorded levels of NO₂ were monitored near the junction of Fulford Main Street and Heslington Lane (northbound carriageway) and were 32.7µg/m³. In the Annual Status Report submitted to DEFRA in June 2017, it was highlighted that at least 1-2 additional years of monitoring (demonstrating that levels of NO₂ remain well under the annual mean objective) would be needed in this area before revocation could be considered. As annual mean concentrations of NO₂ monitored in this area have not exceeded 35.3µg/m³ in the last 2 years, City of York Council recommends that this AQMA is revoked. This revocation is subject to approval by the Executive Member for Environment. An update on the status of this AQMA will be provided in City of York Council's next Annual Status Report, due in June 2020.

Concentrations of NO₂ monitored in the former Salisbury Terrace AQMA in 2018 were all well below the annual mean objective of 40µg/m³. Monitoring results indicate that the health based annual mean nitrogen dioxide continues to be met in this area and that City of York Council was correct to revoke this AQMA.

In City of York Council's 2017 Annual Status Report it was highlighted that consideration should be given to extending the city centre AQMA to include new relevant exposure for the annual mean NO₂ objective in Coppergate. City of York

Council's 2018 Annual Status Report confirmed that this amendment was necessary and on 17th December 2018, the boundary of the city centre AQMA was extended to include the full length of Coppergate and the buildings either side of the road. The new AQMA (Order No. 5) also removes the reference to breaches of the short-term hourly objective along George Hudson Street / Rougier Street / Bridge Street based on recent monitoring results in this area. Diffusion tube monitoring will continue along Coppergate throughout 2019 and a further update on concentrations of NO₂ will be provided in City of York Council's next Annual Status Report, due June 2020. A copy of the new Order and accompanying map can be found on City of York Council's air quality website, JorAir, see: <http://jorair.co.uk/air-quality-in-york/aqmas/>

National air quality objectives for PM₁₀ are currently met in York. Health based objective levels for ultra-fine particulates (PM_{2.5}) have not yet been set for local authorities. The EU limit value for PM_{2.5} is 25µg/m³ as an annual average with an additional requirement to reduce average urban background concentrations by 15% by 2020 (against a 2010 baseline). In 2018, the annual average PM_{2.5} concentrations measured at York's three monitoring stations were 10.8µg/m³, 10.5µg/m³ and 8.3µg/m³ and were therefore well within the EU limit value.

DEFRA predict that the Yorkshire and Humberside Zone (which includes York) is expected to meet the EU limit values by 2020 (assuming all local Air Quality Action Plans within the zone are fully delivered). Air quality monitoring and modelling work undertaken by City of York Council indicates that with the proposed third Air Quality Action Plan (AQAP3) measures in place, the health based national air quality objectives for NO₂ will be met in all the current air quality technical breach areas in York by 2021.

Actions to Improve Air Quality

City of York Council has previously produced two Air Quality Action Plans (AQAPs) in 2004 and 2006. These previous plans were primarily modal shift and congestion reduction based plans, with emphasis on reducing vehicle trips across the city.

Despite the introduction of two AQAPs, air quality in York continued to deteriorate between 2004 and 2010. In response, York adopted an overarching Low Emission Strategy (LES) in 2012 to tackle the issue. This document was the first of its kind in

the UK and set out a new approach to local air quality management based on reducing emissions from all sources, including tailpipe emissions from individual vehicles and encouraging the uptake of alternative fuels and low emission vehicle technologies. The Low Emission Strategy has proved particularly effective at tackling emissions from essential service vehicles such as buses, taxis and HGVs, which fall outside the scope of trip reduction based modal shift measures.

Modal shift and congestion reduction measures remain fundamental to the delivery of air quality improvement and emission reduction in York. The primary local delivery programmes for these measures are the Local Transport Plan (LTP3) and the iTravel York programme (see www.itravel.york.info). These programmes include many measures to encourage the uptake of walking, cycling, and public transport in the city. They are supported by planning policies that ensure sustainable travel is embedded into all new development in York.

City of York Council's third Air Quality Action Plan (AQAP3), adopted December 2015⁵, sets out how York intends to continue to deliver its ambitious and pioneering overarching Low Emission Strategy (LES) and to work towards becoming an internationally recognised ultra-low emission city.

York's overarching LES (October 2012) has already changed the way York delivers public transport and plans for future transport trips. Since the publication of the LES, York has:

- Delivered a new fully electric Park & Ride (P&R) site at Poppleton Bar and introduced electric buses at the existing Monks Cross P&R site. CYC was awarded £3.3m in 2017 from DfT's Low Emission Bus Scheme to support delivery of high capacity, fully electric buses and supporting charging infrastructure at York's P&R sites by Autumn 2019. From this date, York will be home to one of the largest fleets of double decker electric buses outside London (21 new vehicles will join the existing fleet of 12 electric single deck vehicles, that have been operating in the city for the last 5 years).



⁵ AQAP3 available online at <http://jorair.co.uk/data-downloads/reports/>

- Committed to the introduction of a Clean Air Zone (CAZ) for buses to be introduced from January 2020 for vehicles operating local bus services that enter the inner ring road area. CYC will provide £1.6m towards the cost of retrofitting essential services to a Euro VI emission standard. This will be supplemented by a further £240k from a DEFRA Air Quality Grant from (awarded March 2019).

- Retrofitted the world's first fleet of electric double-decker sightseeing buses. Transdev is currently working in partnership with City of York Council to convert the remaining 2 vehicles in the fleet to full electric drive (Cleaner Bus Technology Fund).



- Encouraged 17.7% [139 vehicles] (*figure correct as of 8/1/2019*) of the taxi fleet to change to low emission alternatives (Euro 5+ hybrid or electric); a number of these were converted through our innovative CYC taxi incentive grant scheme. We have also implemented a new taxi licensing policy, specifying minimum emission standards for new or replacement taxis.

- Implemented an extensive 'pay as you go' fast charge public electric vehicle recharging network in addition to 11 publicly accessible rapid chargers across the city.



- Been awarded £816,000 from the Office of Low Emission Vehicles (OLEV) after becoming the only Yorkshire location out of eight in the country to achieve 'Go Ultra Low' city status. The money is being used to fund a network of charging hubs, providing ultra fast, reliable and convenient electrical charging. Since receiving this funding allocation, City of York Council has secured further European funding to allow the delivery of a full solar canopy/battery storage solution in addition to the proposed charging points at Monks Cross and Poppleton Bar.



- Developed Low Emission Planning guidance – this guidance has been developed to accompany policy ENV1 ‘Air Quality’ of the Local Plan and outlines City of York Council’s design and mitigation expectations for all new developments in the city, including EV charging. The guidance aims to assist developers to improve air quality and lower transport emissions in line with the aims and objectives of the York Air Quality Action Plan (AQAP) and Low Emission Strategy (LES). The guidance has also been used as the basis for a ‘common principles’ document relating to low emission planning, developed by the Yorkshire and Lincolnshire Pollution Advisory Group (YALPAG), to ensure consistency in the approach to low emission planning.
- Launched an ECO-Stars Fleet Recognition Scheme. There are currently 105 members of the scheme (as of 13 Feb 2019). The scheme was reviewed at the end of 2017 with emphasis for 2018 being the City of York Council fleet and York bus operators. Further information about the scheme can be found at <http://www.jorair.co.uk/air-quality-in-york/eco-stars-scheme/>
- Re-launched City of York Council’s dedicated ‘JorAir’ air quality website (www.jorair.co.uk). The website contains information about air pollution and health, low emission vehicles, air quality improvement/mitigation measures and the planning process.
- City of York Council has undertaken promotional work in relation to anti-idling as part of Clean Air Day. Promotional activities took place in Union Terrace and St George’s Field Coach Parks, York Railway Station and across the city centre. City of York Council also worked in partnership with the University of York to deliver air quality themed workshops and assemblies to schools across the city. Some photographs of activities undertaken for National Clean Air Day 2018 are available online at: <http://jorair.co.uk/air-quality-in-york/photos/>.



- Obtained member approval (Joint Decision Session of the Executive Member for Planning and Transport, and Executive Member for Environment, 7 Feb 2019) to implement a package of measures aimed at deterring stationary vehicles from idling, including the use of discretionary powers under the Road Traffic Regulations 2002 to issue fixed penalty notices to drivers who refuse to switch off their engines. An anti-idling awareness-raising campaign will be launched in mid-2019, six weeks before the proposed introduction of anti-idling enforcement patrols, which will be timed to coincide with Clean Air Day on 20th June 2019. CYC have also worked in partnership with bus operators through the Quality Bus Partnership to put in place measures to address bus idling, particularly in the city centre.



- Proposed to raise the CYC parking discount qualification threshold for the 50% discount from 'low emission' vehicle (emits less than 120g of CO₂/km) to 'ultra-low emission' vehicle (emits less than 75g of CO₂/km). The new rates and qualification thresholds are currently being reviewed (subject to member decision).

- Obtained DEFRA AQ Grant funding and is currently acting as lead authority in development of a new air quality hub, alongside Lancaster City Council and Mid Devon District Council. The DEFRA Air Quality Grant funded project will extend the existing LEP resource (the Low Emission Hub www.lowemissionhub.org) to create an online Air Quality Knowledge Hub. The new hub will provide a space where air quality experience and knowledge can be shared and where local authority officers can be up-skilled without the need to attend external training courses or meet travel costs.



At the same time, York continues to deliver on walking, cycling and public transport improvements, maintaining its national reputation as a leader in sustainable transport.

York already has much to celebrate in relation to reducing emissions and protecting and improving the health of its residents. However, with an increasing population

and thriving local economy, preventing further emission growth and improving air quality remain significant and difficult challenges for the foreseeable future.

Measures in AQAP3 are intended to build upon (but not replace) the modal shift based measures included in previous AQAPs, and are intended to support other emission reduction measures in the Climate Change Framework and Action Plan (CCFAP) and the Local Transport Plan (LTP3).

Conclusions and Priorities

Key findings and conclusions from this year's Annual Status Report

- Annual mean NO₂ concentrations monitored at all but one real-time monitoring station either decreased or remained the same in 2018 compared with levels monitored in 2017. There is continuing evidence of a steady downward trend in nitrogen dioxide concentrations in York.
- With respect to the city centre AQMA, exceedances of the health based annual mean NO₂ objective (40µg/m³) were monitored in the Gillygate, Holgate, Lawrence Street and Rougier Street/George Hudson Street technical breach areas in 2018. Whilst maximum annual mean concentrations of NO₂ monitored in the Nunnery Lane/Prices Lane and Fishergate technical breach areas were below the objective at 35.6µg/m³ and 36.1µg/m³ respectively, they are still considered elevated. It is therefore not considered appropriate to reduce the size of the city centre AQMA at this time.
- On 17 December 2018, the boundary of City of York Council's City Centre AQMA was amended to include Coppergate, based on monitored exceedances of the health based annual mean nitrogen dioxide objective at relevant locations on the street. The existing AQMA was extended to include the full length of Coppergate and the buildings either side of the road, to encompass all areas of relevant exposure along the street. The new AQMA (Order No. 5) also removes the reference to breaches of the short-term hourly objective along George Hudson Street / Rougier Street / Bridge Street based on recent monitoring results in this area. Diffusion tube monitoring will continue along Coppergate throughout 2019 and a further update on concentrations of NO₂ will be provided in City of York Council's next Annual Status Report, due June 2020. A copy of the Order and accompanying map can be found on City of York Council's air quality website, see: <http://jorair.co.uk/air-quality-in-york/aqmas/>
- Concentrations of NO₂ monitored in the Fulford AQMA (AQMA Order No.2) remained below the health based objective in 2018. As annual mean concentrations of NO₂ monitored in this area have not exceeded 35µg/m³ in the last 2 years, City of York Council proposes to revoke this AQMA as soon as practically possible.

Local Priorities for City of York Council

City of York Council's priorities for the coming year are:

- **Reducing emissions from buses through a Clean Air Zone (CAZ)** - On 25 January 2018, City of York Council's Executive approved the concept of a bus-based CAZ, subject to consultation with local bus operators, the public and others. A report back to the Council's Executive on 17 January 2019 set out the options and timescales for the introduction of emission standards of vehicles operating on the local bus network. As this meeting it was agreed that City of York Council will invest £1.6 million into the CAZ, which shall be introduced from January 2020 for vehicles operating local bus services. A request shall be made to the Traffic Commissioner pursuant to section 7(1) of the Transport Act 1985 that he exercise his powers under that section to impose traffic regulation conditions designed to implement the CAZ and reduce air pollution. Should the Traffic Commissioner agree to the request, the CAZ in York will see the implementation of a single emission standard applicable to all local bus services using (or crossing) the York inner ring road, with the exception of very low frequency buses which would be exempted. From January 2020, buses making 5 or more entrances to the CAZ per day will be required to be Ultra Low Emission Buses (ULEB) (Euro VI diesel or electric). An advisory minimum emission level would apply to exempted vehicles (i.e. those buses making fewer than 5 entrances to the CAZ per day) of Euro IV by January 2020, increasing to Euro V from January 2022 and ULEB / Euro VI from January 2024. It was also agreed that a twelve month 'sunset' period will be permitted from January 2020, when vehicles not meeting the CAZ requirement may continue to be operated if evidence can be submitted by an operator that an order for retro-fitting of an existing vehicle, or procurement of a replacement Euro VI (or better) vehicle has been placed but not yet delivered. Further information about this topic and minutes/decision of the meeting can be found at:
<https://democracy.york.gov.uk/ieListDocuments.aspx?CIId=733&MIId=10476>
- **Introduce anti-idling measures** – A package of measures aimed at deterring stationary vehicles from idling was approved at a Joint Decision Session of the Executive Member for Planning and Transport, and Executive Member for the Environment, on 7 February 2019. It was agreed that Council officers should be

authorised to use discretionary powers under the Road Traffic Regulations (2002) to issue fixed penalty notices of £20 to drivers who refuse to switch off their engines. Enforcement will only be undertaken as a last resort with the problem of stationary vehicle idling being addressed first and foremost, by raising awareness, particularly in those areas of the city where complaints arise, such as residential areas and outside schools. A Fixed Penalty Notice will only be issued if a vehicle has been observed idling on the public highway for more than two minutes (without reasonable cause) and the driver refuses to switch their engine off when asked. Anyone issued with a Fixed Penalty Notice for idling would have 28 days to pay. If they fail to do so, the fine would rise to £40. The legislation only applies to the public highway and not to private land, such as car parks, where the issue will be addressed in a different way. It is also not applicable to vehicles waiting in a queue of traffic, unless there's an obvious source of prolonged delay, such as a level crossing or an incident that's blocking the highway. Driver's will also be allowed a reasonable period in which to defrost their vehicles to a safe level during periods of cold weather. An anti-idling awareness-raising campaign will be launched in mid-2019, six weeks before the proposed introduction of anti-idling enforcement patrols, which will be timed to coincide with Clean Air Day 2019 on 20th June 2019. Bus operators have agreed to work with CYC through the Quality Bus Partnership to put in place measures to address bus idling, particularly in the city centre. The Quality Bus Partnership has supported a range of measures to be introduced in 2019, including signage at bus stops in the city centre to remind drivers to switch off their engines if they are waiting for longer than 2 minutes. Information will also be placed online and on real-time information screens at bus stops to explain the purpose of the anti-idling measures to the public.

- **Continue to reduce emissions from taxis** – following the adoption of a new Taxi Licensing policy in 2016, new vehicles applying to be licensed as taxis had to meet a minimum Euro 5 emission standard for petrol, Euro 6 for diesel, or be ultra low emission vehicles from 1 June 2017 (for replacement hackney carriage vehicles) and from 1 November 2017 (for replacement private hire vehicles). These new licensing standards will see a gradual change in the taxi fleet operating within the city as vehicle licenses are renewed. Further opportunities

will be sought to obtain funding for additional taxi incentives as and when these become available.

- **Further delivery of strategic EV charging network** - City of York Council's successful Low Emission City bid will see the installation of York's first 'hyper-hubs', providing ultra-fast, reliable and convenient electrical recharging. Following some initial delays, planning applications for the first hyper-hubs at Monks Cross and Poppleton Bar P&R sites are due to be submitted in August 2019. The hyper-hubs will consist of 4 x double rapid-charge units.
- **Continuing to reduce emissions from new development** – by continuing to require electric vehicle recharging infrastructure, Construction Environmental Management Plans (CEMPs) and, where appropriate, emissions mitigation plans on new developments.
- **Reducing emissions from the council's fleet** – by switching from diesel to low and zero emission alternatives wherever practical. Charging infrastructure is now in place at the Hazel Court Eco Depot for charging up to 6 electric vehicles simultaneously. City of York Council will also continue to reduce 'grey fleet' trips by utilising Enterprise Car Club to provide a pool of low emission cars for exclusive use by CYC staff during office hours. CYC has recently trialled an electric refuse collection vehicle and will consider these and other alternatives over time.
- **Increasing awareness of the impact of air pollution of public health** – via continued development of the JorAir website to include further information around the causes and consequences of poor air quality, especially health impacts of air pollution.
- **Continued modal shift and network improvement measures** – via both the LTP3 capital programme and i-Travel York sustainable travel programme.

Challenges faced by City of York Council

There are a number of challenges faced by City of York Council, and indeed the UK, with respect to air quality improvement measures and the ability of local authorities to meet health based air quality objectives in their areas. These include:

- The failure of current vehicle emission standards to deliver reductions in NO_x emissions. There is still considerable uncertainty about the on-road

performance of some Euro VI diesel vehicles. If Euro VI vehicles do not perform as expected, the number of UK zones and agglomerations exceeding the EU limit values in 2020 may be greater than the number currently predicted by central government.

- The increasing number of diesel vehicles in York (which have increased primary emission of NO₂ and carcinogenic diesel particulate).
- Development related ‘emissions creep’ through increased development in the city.
- Unnecessary vehicle idling in the city, particularly amongst heavy diesel vehicles

Despite recent improvements in air quality in the city, the above factors are thought to be responsible for the continued existence of elevated levels of NO₂ concentrations in York and are considered to be the main reasons for the current AQMA designations.

Local Engagement and How to get Involved

Further information can be obtained from the air quality pages of City of York Council’s main website <https://www.york.gov.uk/airquality>, or from City of York Council’s dedicated air quality website <http://www.jorair.co.uk>.

Residents, businesses and other interested parties are encouraged to participate in consultations relating to air quality. These are advertised online at:

https://www.york.gov.uk/info/20034/local_democracy/13/have_your_say_-_current_consultations

If you have any queries on Local Air Quality Management in York, please contact the Public Protection team using the details below:

Email: public.protection@york.gov.uk

Phone: 01904 551525

Write to: Public Protection (Air Quality)
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1 Local Air Quality Management

This report provides an overview of air quality in City of York Council's area during 2018. 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 City of York Council to improve air quality and any progress that has been made.

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

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority must prepare an Air Quality Action Plan (AQAP) within 12-18 months setting out measures it intends to put in place in pursuit of compliance with the objectives.

A summary of AQMAs declared by City of York Council can be found in Table 2.1. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=63. Alternatively, see Appendix D: Map(s) of Monitoring Locations and AQMAs, which provides for a map of air quality monitoring locations in relation to the current and historical AQMA(s) in York.

On 17 December 2018, the boundary of City of York Council's City Centre AQMA was amended to include Coppergate, based on monitored exceedances of the health based annual mean nitrogen dioxide objective at relevant locations on the street. The existing AQMA was extended to include the full length of Coppergate and the buildings either side of the road, to encompass all areas of relevant exposure along the street. The new AQMA (Order No. 5) also removes the reference to breaches of the short-term hourly objective along George Hudson Street / Rougier Street / Bridge Street based on recent monitoring results in this area. Diffusion tube monitoring will continue along Coppergate throughout 2019 and a further update on concentrations of NO₂ will be provided in City of York Council's next Annual Status Report, due June 2020. A copy of the Order and accompanying map can be found on City of York Council's air quality website, JorAir, see: <http://jorair.co.uk/air-quality-in-york/aqmas/>

The Salisbury Terrace AQMA (AQMA Order No.3) was formally revoked on 14 December 2017, following approval at the Executive Member Decision Session on 7 August 2017. The Executive Member requested that current levels of monitoring along Salisbury Terrace should be retained to allow levels of nitrogen dioxide in this area to be reported in future Annual Status Reports and to ensure that any air quality deterioration is picked up. The latest monitoring results for this area are presented in this Annual Status Report.

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	City / Town	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance (maximum monitored/modelled concentration at a location of relevant exposure)		Action Plan (inc. date of publication)
						At Declaration	Now	
City Centre AQMA (AQMA Order No.5)	December 2018 (supercedes AQMA Order No. 4 declared Sept 2012)	NO ₂ Annual Mean	York (City Centre)	Inner ring road and properties included within 6 areas of technical breach	NO	62µg/m ³	46.6µg/m ³	AQAP3 Published Sept 2015 (available online at: http://www.jorair.co.uk)
Fulford AQMA (AQMA Order No. 2)	March 2010	NO ₂ Annual Mean	York (Fulford Village)	A19 corridor between Fishergate and the Outer Ring Road. Includes properties on Fulford Main Street only.	NO	56µg/m ³	32.7µg/m ³	AQAP3 Published Sept 2015 (available online at: http://www.jorair.co.uk)

City of York Council confirm the information on UK-Air regarding their AQMA(s) is up to date

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

Defra's appraisal of last year's Annual Status Report supported the outlined measures to improve air quality across the city and accepted the conclusions reached for all sources and pollutants. The following updates are provided with respect to the boundaries of York City Centre and Fulford AQMAs:

- On 17 December 2018, the boundary of City of York Council's City Centre AQMA was amended to include Coppergate, based on monitored exceedences of the health based annual mean nitrogen dioxide objective at relevant locations on the street. The existing AQMA was extended to include the full length of Coppergate and the buildings either side of the road, to encompass all areas of relevant exposure along the street. The new AQMA (*AQMA Order No. 5*) also removes the reference to breaches of the short-term hourly objective along George Hudson Street / Rougier Street / Bridge Street based on recent monitoring results in this area. Diffusion tube monitoring will continue along Coppergate throughout 2019 and a further update on concentrations of NO₂ will be provided in City of York Council's next Annual Status Report, due June 2020. A copy of the Order and accompanying map can be found on City of York Council's air quality website, JorAir, see: <http://jorair.co.uk/air-quality-in-york/aqmas/>
- City of York Council's previous Annual Status Reports have concluded that the Fulford AQMA should be considered for revocation as concentrations of NO₂ monitored in this areas have been below health based objectives for a number of years. Based on additional monitoring carried out throughout 2018 it is proposed to revoke this AQMA, subject to approval from the Executive Member for Environment. A further update and a discussion of current monitoring results for this area is provided in section 3.2 of this report.

City of York Council has taken forward a number of direct measures during the current reporting year of 2018 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2.

More detail on these measures can be found in City of York Council's third Air Quality Action Plan (AQAP3), available online at <http://jorair.co.uk/data-downloads/reports/>.

Key completed measures and progress include:

- Undertaken a final detailed consultation and agreed options and timescales for the introduction of a Clean Air Zone (CAZ) for buses. At a meeting of the council's Executive on 17 January 2019, it was agreed that City of York Council will invest £1.6 million into the CAZ, which shall be introduced from January 2020 for vehicles operating local bus services. Subject to agreement from the Traffic Commissioner, the CAZ will see the implementation of a single emission standard applicable to all local bus services using (or crossing) the inner ring road, with the exception of very low frequency buses which would be exempted. From January 2020, buses making 5 or more entrances to the CAZ per day will be required to be Ultra Low Emission Buses (ULEB) (Euro VI diesel or electric). Further information about this topic can be found at:
<https://democracy.york.gov.uk/ieListDocuments.aspx?CIId=733&MIId=10476>
- Approved a package of measures aimed at deterring stationary vehicles from idling. It was agreed that Council officers should be authorised to use discretionary powers under the Road Traffic Regulations 2002 to issue fixed penalty notices of £20 to drivers who refuse to switch off their engines. Enforcement will only be undertaken as a last resort with the problem of stationary vehicle idling being addressed first and foremost, by raising awareness, particularly in those areas of the city where complaints arise, such as residential areas and outside schools. Further information about this topic can be found at:
<https://democracy.york.gov.uk/ieListDocuments.aspx?CIId=738&MIId=10864>
- City of York Council has undertaken promotional work in relation to anti-idling as part of Clean Air Day 2018. Promotional activities took place in Union Terrace and St George's Field Coach Parks, York Railway Station and across the city centre. City of York Council also worked in partnership with the University of York to deliver air quality themed workshops and assemblies to schools across the city. Some photographs of activities undertaken for National Clean Air Day 2018 are available online at: <http://jorair.co.uk/air-quality-in-york/photos/>. An additional anti-idling awareness-raising campaign will be launched in mid-2019, six weeks before the proposed introduction of York anti-idling enforcement patrols, which will be timed to coincide with National Clean Air Day 2019 on 20 June. Further photographs of this year's Clean Air Day will be added to this site when available.

- Further development of the LES based Planning Guidance to accompany policy ENV1 'Air Quality' of the Local Plan. The guidance outlines City of York Council's design and mitigation expectations for all new development in the city (including EV charging). It aims to assist developers to improve air quality and lower transport emissions in line with the aims and objectives of the York Air Quality Action Plan and Low Emission Strategy. This note is currently being used by City of York Council's Public Protection team to ensure that air quality impacts of new developments in the city are appraised and mitigated appropriately. The guidance has recently been used during the preparation of an outline planning application for the York Central site, a large brownfield site to the west of the city's railway station, bordered by the A19 and A59 road corridors.
- Continued roll-out of the new taxi licensing policy that specifies minimum emission standards for new or replacement taxis. This new policy, in addition to City of York Council's earlier support for local taxi drivers through the Low Emission Taxi Incentive Scheme, has resulted in 17.7% of local taxis upgraded to petrol hybrid or electric vehicles to date (figure correct as of 8 Jan 2019).
- Continued delivery of the strategic electric vehicle fast charge network in the city, including further development work on the proposed city-wide network of hyper hubs, providing ultra fast, reliable and convenient electrical charging. Following some initial delays, planning applications for the first hyper-hubs at Monks Cross and Poppleton Bar P&R sites are due to be submitted in August 2019. Since receiving funding for this project from the Office for Low Emission Vehicles (OLEV), City of York Council has secured further European funding to allow the delivery of a full solar canopy/battery storage solution in addition to the proposed charging points at Monks Cross and Poppleton Bar.
- Following the government's changes to the Vehicle Excise Duty (VED) bandings, various changes were proposed to City of York Council's parking discount criteria. This was the subject of a report to the Executive Member for Transport and Planning (15 November 2018). The report made a recommendation to align City of York Council's rates for parking permits to the Government's specification for ultra low emission vehicles (ULEV). Government changed its policy for VED in response to a significant increase in vehicles that produce less than 120g of CO₂/km and the desire to encourage further emission reductions by incentivising

the purchase of ULEVs. The proposed rates and qualification thresholds are currently being reviewed and are subject to member decision. Further information about this topic can be found at:

<https://democracy.york.gov.uk/ieListDocuments.aspx?CIId=738&MIId=10861>.

- City of York Council has obtained DEFRA AQ Grant funding and is currently acting as lead authority in development of a new air quality hub, alongside Lancaster City Council and Mid Devon District Council. The DEFRA Air Quality Grant funded project will extend the existing LEP resource (the Low Emission Hub www.lowemissionhub.org) to create an online Air Quality Knowledge Hub. The new hub will provide a space where air quality experience and knowledge can be shared and where local authority officers can be up-skilled without the need to attend external training courses or meet travel costs.
- Continued to reduce CYC 'grey fleet' trips by working in partnership with Enterprise Car Club to provide a pool of low emission hybrid vehicles for exclusive use by CYC staff during office hours. In December 2018, City of York Council trialled a new zero emission electric refuse collection vehicle. The vehicle was the first of its kind, using electric to power both the vehicle and to compact waste. The 27 tonne truck runs on lithium-ion batteries and can complete a full ten hour shift on one charge.
- Continuation of the York ECO Stars fleet recognition scheme. There are currently 105 members of the scheme (as of 13 February 2019). The scheme was reviewed at the end of 2017 with emphasis for 2018 being the City of York Council fleet and York bus operators. Further information about the scheme can be found at <http://www.jorair.co.uk/air-quality-in-york/eco-stars-scheme/>
- New restrictions were introduced on Micklegate on Monday 10 December 2018. These changes prevent vehicles travelling outbound from the city and reduce the impact of traffic on the historic bar walls. An experimental Traffic Regulation order (TRO) has been introduced for a maximum of 18 months, during which time the temporary changes could become permanent. The TRO will help determine the benefits of restricting vehicles in Micklegate and will allow the local community and businesses the opportunity to experience the changes before making representations. During this 18 month period, there will be an outbound road

closure only (but cycle access will be available in both directions). The road will remain open to inbound traffic through Micklegate Bar from Blossom Street/Nunnery Lane/Queen Street. More information about the scheme can be found at:

<http://democracy.york.gov.uk/ieListDocuments.aspx?CId=738&MId=10859>

- In March 2018, City of York Council was awarded £2.85m funding from the government's national Productivity Investment Fund to proceed with the Smarter Travel Evolution Programme (STEP). STEP will monitor and enable analysis of real-time journey information to improve travel in York. Rather than traditional traffic control using roadside infrastructure, we will apply technologies already in use in the UK to the whole city. Using co-operative 'urban traffic control' (UTC), where vehicles and traffic signals work together to improve the network, we will reduce congestion and emissions. STEP will also generate a multi-layered, real-time model of traffic, public transport and air quality data, allowing York to prepare for connected and autonomous vehicles. STEP will transform the way the council manages the city's roads, from changes to how traffic lights react to traffic flows through to designing junctions and road improvements. This will allow the council to better understand the impact of changes and demands on the network such as the impacts of new development sites, and to help manage and improve air quality in the city. Further information about step can be found here:
https://www.york.gov.uk/info/20013/parking_and_travel/2137/smart_travel_evolution_programme_step
- With respect to bus services, the council and bus operators have worked together throughout 2018 to improve York's bus services through the York Quality Bus Partnership (QBP), especially in relation to the Clean Air Zone and anti-idling initiatives.

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

- Whilst the Clean Air Zone will not formally come into effect until January 2020, over the course of the next reporting year it is anticipated the necessary traffic regulation conditions will have been agreed with the Traffic Commissioner. The proposed CAZ in York will see the implementation of a single emission standard applicable to all local bus services using (or crossing) the York inner ring road, with the exception of very low frequency buses which would be exempted.
- Additional electric buses on the Park & Ride services (and upgrading of the remaining P&R fleet to Euro 6) is expected by October 2019. From this date, York will be home to one of the largest fleets of double decker electric buses outside London (21 new vehicles).
- Conversion of the remaining two City Sightseeing buses to electric drive
- Retrofit additional school buses with exhaust after treatment systems to reduce emissions
- New council contracts to specify Euro VI diesel or higher
- Introduction of anti-idling enforcement across the city. An anti-idling awareness raising campaign will be launched in mid-2019, six weeks before the proposed introduction of anti-idling enforcement patrols, which will be timed to coincide with Clean Air Day 2019 on 20th June 2019.
- Further development of local incentives for low emission vehicles and alternative fuel use. In particular, the continued roll out of electric vehicle recharging infrastructure across the city via the planning process.
- Delivery of a full solar canopy/battery storage solution in addition to the proposed charging points / hyperhubs at Monks Cross and Poppleton Bar.
- Further modal shift and network improvement measures, see <https://www.itravelyork.info/>

City of York Council's priorities for the coming year are:

- Clean Air Zone – preparation for launch of the CAZ in January 2020 including the necessary consultation with the Traffic Commissioner.

- Anti-idling Measures - roll-out of further anti-idling signage in key locations and undertake further promotional work as part of National Clean Air Day 2019.
- Planning and delivery of strategic EV charging network – expand electric vehicle recharging facilities at key Park & Ride sites to include ‘hyper-hubs’, providing ultra-fast, reliable and convenient electrical recharging.
- Reducing and mitigating emissions from new development through the planning process

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

- Planning and delivery of CNG refuelling infrastructure (and freight consolidation centre). Whilst a feasibility study was completed in 2015, delivery is subject to third party investment and a suitable site being found. A potential site has previously identified based on location of high pressure gas mains to the south west of the city, however, this location is designated greenbelt and is therefore unlikely to be progressed.
- LES Marketing and Health Promotion - whilst considerable progress has been made in terms of delivery of many of the measures in City of York Council’s Low Emission Strategy (LES), a formal LES marketing strategy has not been progressed as per the original plans and timescales due to staff resources in Public Protection. Despite this, we have re-launched our air quality website (www.jorair.co.uk), undertaken presentations and awareness raising for councillors and residents and used social media to promote air quality and health messages. This year, we will also launch a high-profile anti-idling campaign to coincide with Clean Air Day 2019.

City of York Council anticipates that the measures stated above and in Table 2.2 below will help achieve compliance in all of the current AQMA technical breach areas by 2021. This is based on modelling work undertaken for City of York Council’s third Air Quality Action Plan (AQAP3) that assumed that all measures were delivered in full. The possible exception to this was Nunnery Lane, where modelling suggested that the low emission measures in AQAP3 would not be enough to completely offset the predicted development led traffic growth in this area⁶.

⁶ Expected under the Local Plan proposals as they stood at the end of 2014

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
AQAP3 (1)	Clean Air Zone (CAZ)	Promoting Low Emission Transport	Low Emission Zone	CYC	Planning and consultation phase now complete	Subject to Traffic Commissioner approval, from January 2020, buses making 5 or more entrances to the CAZ per day will be required to be Ultra Low Emission Buses (ULEB) (Euro VI diesel or electric).	Number of ultra low emission buses operating within York Inner Ring Road	Every electric bus introduced into the CAZ will remove local emissions of NO ₂ and PM ₁₀ and reduce CO ₂ emissions by approx 35 tonnes.	On 25 January 2018, City of York Council's Executive approved the concept of a bus-based CAZ, subject to consultation with local bus operators, the public and others. A report back to the Council's Executive on 17 January 2019 set out the options and timescales for the introduction of emission standards of vehicles operating on the local bus network. As this meeting it was agreed that City of York Council will invest £1.6 million into the CAZ, which shall be introduced from January 2020 for vehicles operating local bus services. A request has been made to the Traffic Commissioner pursuant to section 7(1) of the Transport Act 1985 that he exercise his powers under that section to impose traffic regulation conditions designed to implement the CAZ and reduce air pollution. Further information about this	Subject to Traffic Commissioner approval, from January 2020, buses making 5 or more entrances to the CAZ per day will be required to be Ultra Low Emission Buses (ULEB) (Euro VI diesel or electric).	Measures to reduce emissions from buses are a critical part of City of York Council's AQAP. The main costs are associated with new buses (cost to third party operators) but City of York Council has agreed to invest £1.6 million into the CAZ to support some bus upgrades on essential services. There is the possibility that some bus operators will re-register their bus routes in such a way that they avoided the CAZ, although this is considered unlikely as the bus routes would no longer be connecting their customers to the city centre: a key destination. There is also a risk that the Traffic Commissioner would not agree to the introduction of a Traffic Regulation Condition.

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Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
									topic and minutes/decision of the meeting can be found at: https://democracy.york.gov.uk/ieListDocuments.aspx?CIId=733&MIId=10476		
AQAP3 (2)	Anti-idling measures	Traffic Management	Anti-idling enforcement	CYC	From 2014/15	2017 - present	N/A	From feasibility report done by TTR Ltd - at 5 busiest service bus locations, estimated savings per annum of 1,526kg NO _x , 36kg PM ₁₀ , 46,555kg CO ₂ , and 17,949 litres of fuel.	Draft Enforcement Policy developed and a survey of potential 'no-idling' sign locations has been completed. Anti-idling exercise with buses, taxis, LGVs and private motorists and media campaign undertaken to promote National Clean Air Day in 2017 and 2018, and further promotional activities planned for National Clean Air Day 2019. A package of measures aimed at deterring stationary vehicles from idling was approved at a Joint Decision Session of the Executive Member for Planning and Transport, and Executive Member for the Environment, on 7 February 2019. It was agreed that Council officers should be authorised to use discretionary powers under the	2019	Main cost is signage. There may be some legal and debt recovery costs associated with serving a small number of Fixed Penalty Notices (FPN). A Fixed Penalty Notice will only be issued if a vehicle has been observed idling on the public highway for more than two minutes (without reasonable cause) and the driver refuses to switch their engine off when asked. Anyone issued with a Fixed Penalty Notice for idling would have 28 days to pay. If they fail to do so, the fine would rise to £40. The legislation only applies to the public highway and not to private land, such as car parks, where the issue will be addressed in a different way. It is also not applicable to vehicles waiting in a queue of traffic, unless there's an obvious source of prolonged

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
									<p>Road Traffic Regulations 2002 to issue fixed penalty notices of £20 to drivers who refuse to switch off their engines. Enforcement will only be undertaken as a last resort with the problem of stationary vehicle idling being addressed first and foremost, by raising awareness, particularly in those areas of the city where complaints arise, such as residential areas and outside schools. An anti-idling awareness-raising campaign will be launched in mid-2019, six weeks before the proposed introduction of anti-idling enforcement patrols, which will be timed to coincide with Clean Air Day 2019 on 20th June. Bus operators have agreed to work with CYC through the Quality Bus Partnership to put in place measures to address bus idling, particularly in the city centre. Anti-idling signage was installed at bus stops during</p>		<p>delay, such as a level crossing or an incident that's blocking the highway. Driver's will also be allowed a reasonable period in which to defrost their vehicles to a safe level during periods of cold weather.</p>

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
									Jan/Feb 2019.		
AQAP3 (3)	Further development of ECO-Stars Fleet Recognition Scheme	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	CYC / DEFRA grant funded	2013/14	2013 - present	Number of operators signed up to the scheme	A typical van operator could see its annual output of carbon dioxide fall by six tonnes per year (see http://www.ecostars-uk.com/about-eco-stars/why-join/)	ECO-Stars scheme launched March 2013. Currently 105 members (as of end of 13 February 2019). The scheme was reviewed at the end of 2017 with emphasis for 2018 being the City of York Council fleet and bus companies operating within the city. Further information about the scheme can be found at http://www.jorair.co.uk/air-quality-in-york/eco-stars-scheme/	Funding for the scheme expired in November 2018.	Continuation of the scheme (specifically, recruitment of new members) is subject to external grant funding, although the York scheme is currently offering ongoing support to existing scheme members in terms of fleet reassessments and further advice in line with the York Clean Air Zone requirements.
AQAP3 (4)	Planning and delivery of CNG refuelling infrastructure	Promoting Low Emission Transport	Procuring alternative refuelling infrastructure to promote Low Emission Vehicles, EV charging, Gas fuel recharging	CYC and third party investment (to be identified)	ongoing	To be determined	To be determined	A vehicle running on CNG has significantly lower emissions of NO ₂ , PM ₁₀ and CO ₂ compared with a diesel equivalent. Detailed emission savings to be determined at planning application stage	CNG feasibility study completed in 2013, potential site identified based on location of high pressure gas mains to the south west of the city. However, this location is designated greenbelt. No investor or alternative location identified to date.	Subject to external investment and planning process	The delivery of a CNG refuelling facility is subject to third party investment and a suitable site.
AQAP3 (5)	Freight delivery and service plan for	Freight and delivery management	Delivery and service plans	CYC	ongoing	ongoing	N/A	N/A	Freight improvement study undertaken in 2013	Currently on hold due to lack of staff resources.	Depends on external investment and planning process.

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
	key city centre retailers and streets.										
AQAP3 (5a)	Freight consolidation on Centre	Freight and delivery management	Freight consolidation centre	CYC and third party investment (to be identified)	ongoing	To be determined	Number of city centre businesses using consolidation centre.	To be determined	No investor or suitable location (outside of greenbelt) identified to date.	To be determined	The delivery of a Freight Consolidation Centre is subject to third party investment and a suitable site.
AQAP3 (6)	Development and implementation of LES based planning guidance	Policy guidance and development control	Air quality planning and policy guidance	CYC	2015	2016 - present	Number of publicly Accessible EV parking bays available in York (some deliverable via planning process/condition)	Aims to minimise additional emission impact of development across the entire York area. Emission savings generally calculated and reported per development.	The guidance has been developed to accompany policy ENV1 'Air Quality' of the Local Plan and outlines City of York Council's design and mitigation expectations for all new developments in the city, including EV charging. The guidance aims to assist developers to improve air quality and lower transport emissions in line with the aims and objectives of the York Air Quality Action Plan (AQAP) and Low Emission Strategy (LES). The guidance has also been used as the basis for a 'common principles' document relating to low emission planning, developed by the Yorkshire and Lincolnshire Pollution	The Draft Low Emission Planning Guidance is currently being reviewed by CYC's Forward Planning Team but is being actively used for Development Control purposes.	In line with the guidance, developers are required to demonstrate how they are mitigating site emission 'damage costs' via the use of suitable mitigation measures. Developers may be required to offset large emission damage costs via provision of on-site or off-site facilities and/or contribution towards wider LES measures in York.

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
									Advisory Group (YALPAG), to ensure consistency in the approach to low emission planning. This note is currently being used by City of York Council's Public Protection team to ensure that air quality impacts of new developments in the city are appraised and mitigated appropriately. The guidance has recently been used during the preparation of an outline planning application for the York Central site, a large brownfield site to the west of the city's railway station, bordered by the A19 and A59 road corridors.		
AQAP3 (7a)	Reducing emissions from taxis (financial incentive for low emissions taxi purchase)	Promoting low emission transport	Taxi emission incentives	CYC	2014	2015 - 2016	Number of low emission taxis purchased through the local grant scheme	A hybrid taxi produces approx 8 tonnes per annum of CO ₂ less than a diesel equivalent and has considerably lower emissions of NO _x and PM ₁₀ .	50 low emission taxis purchased through the scheme to date.	Funding for local scheme expired March 2016.	Any additional funding identified will be used to support further implementation of the scheme.
AQAP3 (7b)	Reducing emissions from taxis (taxi)	Promoting low emission transport	Taxi licensing conditions	CYC	2016	ongoing	Number of low emission taxis present in the CYC		Continued roll-out of the new taxi licensing policy, that specifies minimum emission	The revised taxi licensing conditions applied from 1	Following conditions approved by licensing committee in April 2016: Vehicles

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Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
	licensing emissions controls)						taxi fleet		standards for new or replacement taxis. This new policy, in addition to our earlier support for local taxi drivers through the Low Emission Taxi Incentive Scheme, has resulted in 17.7% of local taxis upgraded to petrol hybrid or electric vehicles to date (figure correct as of 8 Jan 2019).	June 2017 (for replacement hackney carriage vehicles), and from 1 Nov 2017 (for replacement private hire vehicles).	applying to be licensed as taxis must meet a minimum Euro 5 emission standard for petrol, Euro 6 for diesel, or be ultra low emission vehicles from 1 June 2017 (for replacement hackney carriage vehicles), and from 1 November 2017 (for replacement private hire vehicles). Operators may experience some increased vehicle replacement costs as only modern vehicles meeting the required standards will now be licensed as taxis in York.
AQAP3 (8)	Planning and delivery of strategic EV charging network	Promoting Low Emission Transport	Procuring alternative refuelling infrastructure to promote Low Emission Vehicles, EV charging, Gas fuel recharging	CYC	ongoing	ongoing	Number of publically Accessible EV parking bays available in York	N/A	EV charging previously provided at 12 hotels in conjunction with Zero Carbon World. CYC has implemented an extensive 'pay as you go' fast charge public electric vehicle recharging network in addition to 11 publicly accessible rapid chargers across the city. Work is ongoing in relation to the proposed city-wide network of hyper hubs, providing ultra fast, reliable and convenient electrical charging. Following	ongoing	Local experts 'Arcus' have been appointed to take the solar canopy project through the planning process.

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
									some initial delays, planning applications for the first hyper-hubs at Monks Cross and Poppleton Bar P&R sites are due to be submitted in August 2019. Since receiving funding for this project from the Office for Low Emission Vehicles (OLEV), City of York Council has secured further European funding to allow the delivery of a full solar canopy/battery storage solution in addition to the proposed charging points at Monks Cross and Poppleton Bar.		
AQAP3 (9a)	Reducing CYC 'grey fleet' trips	Alternatives to private vehicle use	Car clubs	CYC	ongoing	ongoing	Reduction in annual business mileage	-	The council, working in partnership with Enterprise Car Club, provide a range of pool vehicles at various locations near West Offices (HQ), Hazel Court and across the city which can be booked online and accessed via a smart membership card. The vehicles available come in a range of sizes and transmission variations so there is something to suit every type of driver.	ongoing	CYC membership of car club has significantly reduced the number of people using their own private vehicles on CYC business.

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Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
									During 2018, a number of existing diesel pool cars were replaced with low emission Yaris Petrol Hybrid vehicles as part of the car club initiative.		
AQAP3 (9b)	Introduction of low emission vehicles into CYC fleet	Promoting Low Emission Transport	Company vehicle procurement – prioritising uptake of low emission vehicles	CYC	ongoing	ongoing	Number of full electric and electric hybrid vehicles in CYC fleet	-	As well as promoting the use of low emission car clubs, CYC Public Protection also leased an electric vehicle that was used as a pool vehicle and a business demonstrator during 2018 (ended May 2019). Charging infrastructure is now in place at the Hazel Court Depot for charging up to 6 electric vehicles simultaneously. The introduction of further electric fleet vehicles is expected over the next 12-18 months. In December 2018, City of York Council trialled a new zero emission electric refuse collection vehicle. The vehicle was the first of its kind, using electric to power both the vehicle and to compact waste. The 27 tonne truck runs on lithium-ion	ongoing	The replacement of the current diesel LCV fleet will consider low emission alternatives. City of York Council's Executive have requested that a report be prepared that considers introducing a minimum emission standard in the procurement of all future CYC fleet vehicles and bus services. Further updates will be provided in future Annual Status Reports.

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Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
									batteries and can complete a full ten hour shift on one charge.		
AQAP3 (9c)	CYC Eco-driver training and vehicle emission controls	Vehicle Fleet Efficiency	Driver training and Eco aids	CYC	ongoing	ongoing	Number of CYC staff obtaining ECPO driver training	-	Lightfoot trial completed, Fuel additive trial completed, Programme of mandatory HGV driver training completed (including eco-driving element)	ongoing	-
AQAP3 (10)	Marketing and Communication Strategy	Public Information	Via the Internet	CYC	2014-present	ongoing	Number of visitors on upgraded JorAir website per annum	Difficult to quantify	Ad-hoc public communication work ongoing, including ongoing updates to City of York Council's dedicated air quality website JorAir. City of York Council has undertaken promotional work in relation to anti-idling as part of Clean Air Day 2018. Promotional activities took place in Union Terrace and St George's Field Coach Parks, York Railway Station and across the city centre. City of York Council also worked in partnership with the University of York to deliver air quality themed workshops and assemblies to schools across the city. Some photographs of	ongoing	CYCs involvement in National Clean Air Day (2018) involved a city-wide programme of anti-idling initiatives. Clean Air Day 2019 will include further promotional work around the subject of anti-idling.

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
									activities undertaken for National Clean Air Day 2018 are available online at: http://jorair.co.uk/air-quality-in-york/photos/ . An additional anti-idling awareness-raising campaign will be launched in mid-2019, six weeks before the proposed introduction of York anti-idling enforcement patrols, which will be timed to coincide with National Clean Air Day 2019 on 20th June.		
AQAP3 (11a)	Local incentives for low emission vehicles and alternative fuel use – EV chargers and business demonstrators	Promoting Low Emission Transport	Company Vehicle Procurement – Prioritising the uptake of low emission vehicles	CYC	2015	2016 - present	Number of businesses that have installed EV charging and trialed demonstrator vehicle per annum	-	CYC has provided advice to other local authorities regarding the operation of electric vehicles and the installation of charging infrastructure within their areas, including Selby District Council.	ongoing	-
AQAP3 (11b)	Local incentives for low emission vehicles and alternative fuel use – Priority	Promoting Low Emission Transport	Priority parking for LEVs	CYC	ongoing	ongoing	Number of low emission permits issued	-	A total of 2052 Low Emission Permits were issued during the 2018 calendar year (including 1350 Household Low Emission Vehicle Permits)	ongoing	Following the government's changes to the Vehicle Excise Duty (VED) bandings, various changes were proposed to City of York Council's parking discount criteria. This was the subject of a

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Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
	parking / reduced parking fees for low emission vehicles										report to the Executive Member for Transport and Planning (15 November 2018). The report made a recommendation to align City of York Council's rates for parking permits to the Government's specification for ultra low emission vehicles (ULEV). Government changed its policy for VED in response to a significant increase in vehicles that produce less than 120g of CO2/km and the desire to encourage further emission reductions by incentivising the purchase of ULEVs. The new proposed rates and qualification thresholds are currently being reviewed and are subject to member decision. Further information about this topic can be found at: https://democracy.york.gov.uk/ieListDocuments.aspx?CId=738&MIId=10861 .
AQAP3 (12)	Attracting Low Emission industries, businesses and jobs to York	Policy guidance and development control	Other policy	CYC	ongoing	ongoing	-	Not quantifiable	Provided advice to business on low emission technologies/solutions as required	ongoing	Will support wider air quality improvement measures

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
AQAP3 (13a)	Modal shift and network improvement measures (i-Travel York campaign)	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	CYC	ongoing	ongoing	% mode split or walking/cycling/bus vs conventional car drivers and car passengers % trips into city centre	Hard to precisely quantify but target to increase modal shift away from conventional car	Ongoing delivery and funding of i-Travel York sustainable travel programme - see https://www.itravelyork.info/ for further details and current updates	ongoing	The i-Travel York programme was established following a successful bid for funding from the Department for Transport's Local Sustainable Transport Fund. The programme has been delivering an integrated programme of personal, business and school travel planning, combined with targeted infrastructure enhancements to increase people's travel choices since 2012. i-Travel York aims to inspire people in York to help look after our city - to keep it moving and keep the air clean - by considering travel options before making a journey.
AQAP3 (13b)	Modal shift and network improvement measures (Bus Improvements)	Transport planning and infrastructure	Public transport improvements interchanges, stations and services	CYC	ongoing	ongoing	National Annual Passenger satisfaction survey	Aim to increase uptake of public transport	The council and bus operators have worked together to improve York's bus network over the last few years through the York Quality Bus Partnership. Innovations in York have included: Improvements to bus information, including new on-street timetables and more real time displays,	2018	'iTravel Savvy', which ran throughout March 2019, was formally launched at a free Networking Breakfast event for businesses and major employers across the city. Employers attending the event were given free information and advice on promoting sustainable travel to and from the workplace. A number

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Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
									<p>two new park and ride sites at Askham Bar and Poppleton Bar, fare reductions and new tickets, improvements to well used bus stops in the city centre including Museum Street and Exhibition Square, new electric buses on the Poppleton and Monks Cross park and ride services, introduction of refurbished electric open-top buses on the City Sightseeing tour service, new services, such as the CityZap service between York and Leeds, and new vehicles and higher frequencies on some existing services, introduction of a multi-operator "All York" ticket and a smartcard ticket, the introduction of two "Bus Wardens" and the bus enquiry desk at the Railway Station to help passengers.</p> <p>In 2018 further improvements to the network have been progressing including improved bus interchanges at Stonebow and Rougier Street.</p>		<p>of guest speakers shared their own inspiring ideas and examples of how employees can be encouraged to ditch their cars in favour of sustainable forms of transport, such as buses, bicycles and walking. The event highlighted the many benefits to the individual of adopting sustainable forms of transport, which include saving money and improving their health and well-being, as well as the benefits to the wider community and the environment, which include reducing congestion and improving air quality. A number of major employers went head-to-head in the iTravel Savvy Bus Challenge. This involved recording the number of journeys that their employees make by bus – instead of by car – during the month of March to see which business or organisation will be crowned Bus Challenge Champion.</p>

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Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
AQAP3 (13c)	Modal shift and network improvement measures (Other LTP measures)	Transport planning and infrastructure	Other	CYC	ongoing	ongoing	Concentration reduction target in LTP3 and AQAP3	-	Measures in LTP3 can be viewed online at: https://www.york.gov.uk/downloads/file/3725/ltp3pdf (Also see updates against measure 13b)	ongoing	CYC's third Local Transport Plan (LTP3), covering the period to 2031, sets out the transport policies and measures that will contribute to the city's economic prosperity over the next 20 years, whilst meeting challenging national and local targets for reducing emissions. Notable projects during 2018 include a wider share-use pedestrian and cycle bridge at Scarborough Bridge, roundabout upgrades on the outer ring road. Further information can be seen in the news archives at https://www.itravelork.info/news/
AQAP3 (14)	Other air quality improvement measures (non-transport sources)	Environmental Permits	Introduction/Increase of Environment charges through permit systems and economic instruments	CYC	ongoing	ongoing	Number of scheduled inspections completed per annum		Enforcement of relevant air quality legislation is currently undertaken by Regulatory Support and Advice	ongoing	Scheduled inspections undertaken by CYC Public Protection staff.

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Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
AQAP3 (15)	Provide more green infrastructure	Policy Guidance and Development Control	Other policy	CYC	ongoing	ongoing	tba	-	Updates published here when available: https://www.york.gov.uk/info/20051/planning_policy/637/green_infrastructure_gi_strategy		The Strategy will support policies in the Local Plan and the Council Plan, whilst being a focus for partnership working across York. The Strategy will establish a long term vision for the planning and management of Green Infrastructure across York, identifying where the protection and enhancement of green spaces and natural elements can be achieved, improvements in connectivity between places realised, and focal points for community and business involvement established.
16	Further conversion of diesel double decker tour buses to electric	Vehicle Fleet Efficiency	Vehicle Retrofitting programmes	CYC / Grant Funding	2015	2017 - present	Number of buses converted to electric	Conversion to electric drive will eliminate bus tailpipe emissions	Four City Sightseeing buses have now been converted to electric drive, the two final conversions are due in 2019.	2019	Transdev is currently working in partnership with City of York Council and Magtec to convert the remaining two vehicles to full electric drive. Additional charging facilities currently being explored.

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Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
17	Retrofitting of school buses	Vehicle Fleet Efficiency	Vehicle Retrofitting programmes	CYC / Grant funding	2015	2017 - present	Number of retrofitted school buses	-	Retrofit work ongoing	End 2019	Cleaner bus technology funding £308K obtained to support this. Retrofit work ongoing, but has experienced some delays due to withdrawal of Clean Vehicle Retrofit Accreditation Scheme (CVRAS) certification for primary vehicle retrofit manufacturer.
18	Solar panels at electric P&R sites	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	CYC	2016	2017 - present	Amount of energy generated by solar panels	-	<p>City of York Council has secured further European funding to allow the delivery of a full solar canopy/battery storage solution in addition to the proposed charging points at Monks Cross and Poppleton Bar (see update for Hyper Hubs).</p> <p>City of York Council is currently working with CENEX to help shape the complex procurement for this project.</p>	End Mar 2020	<p>Supply of green energy to encourage the uptake of electric vehicles.</p> <p>This project is funded through the European Regional Development Fund (ERDF)</p>
19	Hyper Hubs	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission	CYC	2016	2018 onwards	Number of charging episodes at hyper hubs	-	Following some initial delays, planning applications for the first hyper-hubs at Monks Cross and	2020	City of York Council is currently working with CENEX to help shape the procurement for this project, alongside the solar canopy

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Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
			Vehicles, EV recharging, Gas fuel recharging						Poppleton Bar P&R sites are due to be submitted in August 2019. The hubs will consist of 4 x double rapid-charge units serving 8 parking bays.		project (above)

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

As detailed in Policy Guidance LAQM.PG16 (Chapter 7), local authorities are expected to work towards reducing emissions and/or concentrations of PM_{2.5} (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that PM_{2.5} has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases. The impact of public exposure to particulate matter alone has been estimated to reduce average life expectancy in the UK by around six months and imposes a cost to public health of over £16 billion a year.

Air Pollution and Health in York

Based on national estimates, pro rata, between 94 and 163 people die prematurely in York each year due to the impacts of poor air quality. This is more than the combined estimate of those who die prematurely from obesity and road accidents. Public health framework indicator 3.01 states that the fraction of mortality in York attributable to anthropogenic (man-made) PM_{2.5} particulate air pollution is 4.8% of all deaths (82 deaths). The average for this indicator across England is 5.1%.

It is widely accepted that fine particulate matter has a significant impact on both morbidity and mortality and diesel emissions have been classified as carcinogenic by the International Agency for Research on Cancer (part of the World Health Organisation). There is particular concern about the 'black carbon' fraction of particulate matter due to its health impacts, and its strong ability to absorb light energy and increase global warming. Black carbon emissions in urban environments arise predominantly from diesel transport, but are also a product of biomass combustion, used increasingly for energy production and space heating.

Emissions of oxides of nitrogen (NO_x) and man-made particulate must be reduced to meet the health based national air quality objectives in York and improve public health. The main source of NO_x and man-made particulate in York is traffic, particularly diesel vehicles.

Policy Guidance LAQM.PG(16) acknowledges that many local authorities will consider how to address PM_{2.5} alongside other pollutants when tackling their own fleets and services and/or work with communities and business to achieve

improvements in air quality and that few standalone PM_{2.5} measures will be chosen (unless in order to address a very specific local problem).

To date CYC has produced two trip reduction / modal shift based Air Quality Action Plans (AQAPs) and in 2015 adopted a third Action Plan (AQAP3) focussing on reducing vehicle tailpipe emissions from the remaining vehicle fleet through the use of low emission technologies.

AQAP3 is the main delivery document for York's overarching Low Emission Strategy (LES) (adopted in October 2002). York's LES was the first document of its kind in the UK. It aims to reduce all emissions to air in the city as far as practicable and recognises that there are no 'safe' limits for particulate emissions, particularly PM_{2.5}.

Further air quality improvement measures are also included in the Local Transport Plan and the draft Local Plan.

City of York Council is demonstrating a commitment to addressing PM_{2.5} through measures in its third Air Quality Action Plan. Some specific items related directly to reducing fine particulate emissions (and indeed related to reducing exposure to such emissions) are described below.

- **Exposure Reduction through the Planning Process [*Measure AQAP3(6)*]** - Air quality staff routinely comment on planning applications to ensure that new developments are designed in a way which minimises exposure to air pollution and further emission growth. The most recent approach requires developers to calculate the damage costs of the additional emissions that their developments will cause and to mitigate this using a range of sustainable transport and low emission vehicle measures. Such measures must be considered reasonable and proportionate, relative to the damage costs associated with the development. Pre-planning advice is often provided on locations for key exposure sites (e.g. housing, schools, sports facilities, medical facilities etc) and the use of biomass heating systems is generally discouraged in urban areas and near sensitive receptors.
- **Policy Led Exposure Reduction [*Links to various AQAP3 measures*]** – City of York Council's Public Protection team work alongside other council departments with joint inputs into key council policies that can impact on air quality and exposure reduction. Examples of previous joint policies include the Local

Transport Plan, Local Plan, Climate Change Strategy, Air Quality Action Plan and Low Emission Strategy. Work is now being undertaken to strengthen links between air quality and the Health and Well Being Strategy. The Joint Strategic Needs Assessment (JSNA) already recognises the importance of good air quality in delivering a number of key health outcomes, see <http://www.healthyorke.org>.

- **Information Led Exposure Reduction [*Measure AQAP3(10)*]** - at the present time there is no single marketing and communications strategy at either a national or local level to deal with dissemination of public information on the links between health, air quality and transport. Within Public Health England (PHE) there is currently increasing interest in developing a national campaign and there are opportunities for York to get involved in this via the PHE Air pollution and public health advisory group which has historically been attended by one of City of York Council's air quality officers. The 'JorAir' air quality website (www.jorair.co.uk) is used to communicate information locally about air quality and links to public health. City of York Council has also undertaken promotional work in relation to anti-idling as part of Clean Air Day 2018. Promotional activities took place in Union Terrace and St George's Field Coach Parks, York Railway Station and across the city centre. City of York Council also worked in partnership with the University of York to deliver air quality themed workshops and assemblies to schools across the city. An additional anti-idling awareness-raising campaign will be launched in mid-2019, six weeks before the proposed introduction of York anti-idling enforcement patrols, which will be timed to coincide with National Clean Air Day on 20 June 2019.
- **Low Emission Vehicle Upgrades [*AQAP3 Measures 16 & 17*]** - Following the launch of the world's first retrofitted electric-drive double-decker bus, City of York Council has worked in partnership with Transdev to convert 3 additional sightseeing buses to electric drive. York has also secured £308k from Department for Transport's Clean Bus Technology Fund to retrofit 28 school buses used in around York with the latest Selective Catalytic Reduction (SCR) exhaust technology. CYC was awarded £3.3m in 2017 from DfT's Low Emission Bus Scheme to support delivery of high capacity, fully electric buses and to support charging infrastructure at York's P&R sites by Autumn 2019.

- **Clean Air Zone [Measure AQAP3(1)]** – York is working towards the delivery of a Clean Air Zone (CAZ) by January 2020, which will aim to ensure that the most frequent diesel based bus services in the city utilise the latest engine technology. CYC has committed to invest £1.6million into the Clean Air Zone (CAZ) to assist with upgrading vehicles operating local bus services that pass through the city centre Air Quality Management Area (AQMA). Low emission buses will reduce the amount of fine particulate (as well as NO_x) emitted in the city.
- **Low Emission Taxis [Measure AQAP3(7)]** – York has previously pioneered a taxi grant scheme aimed at encouraging taxi drivers to move away from diesel to petrol hybrid taxis. York has also updated its taxi licensing policies to encourage new vehicles entering the fleet to be mainly hybrid vehicles meeting ultra low emission vehicle standards. Through this scheme and the updated taxi licensing policy, the number of petrol hybrid taxis in the York fleet has been increased to around 17.7% (figure correct as of 8 January 2019). Petrol hybrid cars produce significantly less PM_{2.5} emissions than diesel equivalents.
- **Low Emission Vehicle Events** – In the past few years, York has held various Low Emission Vehicle events for the public at the McArthur Glen Designer Outlet. Following on from the success of these events, the city has aspirations to eventually open a publically accessible electric vehicle demonstration centre in the city (subject to funding). A demonstration electric vehicle has been also been leased by the council over the last 3 years to showcase the latest vehicles technologies to interested local businesses. The lease ended in May 2019.
- **Smoke Control Areas** – Under the requirements of the Clean Air Act, certain areas of York have been designated Smoke Control Areas (SCAs), where emissions of smoke from chimneys of domestic properties are prohibited.

Future Opportunities for PM_{2.5} measures

Links between CYC Public Protection and Public Health continue to evolve and strengthen. There are aspirations to provide a greater role for the Director of Public Health and colleagues in the Public Health team in the development and delivery of future air quality improvement measures, including full involvement in any future air quality steering group activities for the city. Public Protection has previously briefed CYC Public Health and Public Health England on air quality issues in York.

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

3.1 Summary of Monitoring Undertaken

Since 1999, real-time monitoring of nitrogen dioxide and other pollutants has been undertaken at a total of 14 locations across York. Details regarding these sites have been documented in previous air quality reports submitted to DEFRA and the details of current monitoring are provided in Appendix A.

In addition to real time monitoring, City of York Council has also historically undertaken nitrogen dioxide diffusion tube monitoring at up to 340 locations in the city. Results from this diffusion tube monitoring programme were last reported in the Annual Status Report (June 2018)⁷. City of York Council currently undertakes diffusion tube monitoring at 233 sites in the city.

There have been no significant changes to City of York Council's overall monitoring strategy in the last 12 months.

3.1.1 Automatic Monitoring Sites

This section of the Annual Status Report sets out what monitoring has taken place and how it compares with health based objectives.

City of York Council undertook automatic (continuous) monitoring at 9 sites during 2018. Table A.1 in Appendix A shows the details of the sites. NB. Local authorities do not have to report annually on the following pollutants: 1,3 butadiene, benzene, carbon monoxide and lead, unless local circumstances indicate there is a problem. National monitoring results are available online at <http://uk-air.defra.gov.uk/data/>.

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

3.1.2 Non-Automatic Monitoring Sites

City of York Council undertook non-automatic (passive) monitoring of NO₂ at 233 sites during 2018. Table A.2 in Appendix A shows the details of the sites.

⁷ Annual Status Report (2018) available online at <http://jorair.co.uk/data-downloads/reports/>

Maps showing the locations of the diffusion tube monitoring sites are provided online at <http://www.jorair.co.uk/data-downloads/air-quality-data/>. 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 and distance (to nearest relevant location). Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO₂)

Table A.3 in Appendix A compares the ratified and adjusted monitored NO₂ annual mean concentrations for the past 5 years with the air quality objective of 40µg/m³.

For diffusion tubes, the full 2018 dataset of monthly mean values is provided in Appendix B.

Table A.4 in Appendix A compares the ratified continuous monitored NO₂ hourly mean concentrations for the past 5 years with the air quality objective of 200µg/m³, not to be exceeded more than 18 times per year. The only breaches of the hourly limit value in the last 5 years occurred at Lawrence Street in 2015 and 2018 (where 2 and 1 breach of the 200µg/m³ were recorded respectively).

With the exception of Gillygate, annual mean nitrogen dioxide concentrations decreased at all real-time monitoring stations in 2018 compared with levels monitored in 2017 (maximum reduction of 9.6% occurred at Nunnery Lane). Figure A.1 in Appendix A shows trends in the annual mean NO₂ concentrations as monitored at continuous monitoring sites over the last 7 years. There is a general downward trend in NO₂ concentrations between 2012 and 2018.

With respect to the City Centre AQMA, exceedances of the health based annual mean NO₂ objective (40µg/m³) were monitored in the Gillygate, Holgate, Lawrence Street and Rougier Street/George Hudson Street technical breach areas in 2018. Whilst maximum concentrations of NO₂ monitored in the Nunnery Lane/Prices Lane and Fishergate technical breach areas were below the objective at 35.6µg/m³ and 36.1µg/m³ respectively, they are still considered elevated. In addition, as these

areas form part of the York inner ring road and are likely to experience similar traffic volumes to the other technical breach areas within the city centre AQMA, it is considered that all such areas should be managed together. It is therefore not considered appropriate to reduce the size of the city centre AQMA at this time. This will be reviewed again as part of City of York Council’s next Annual Status Report (due June 2020).

Whilst CYC has monitored concentrations above the annual mean objective for nitrogen dioxide, values are currently below the level that would be indicative of breaches of the hourly mean objective ($60\mu\text{g}/\text{m}^3$).

Concentrations of NO_2 monitored in the Fulford Road AQMA in 2018 were elevated but below the annual mean objective of $40\mu\text{g}/\text{m}^3$. The highest recorded levels of NO_2 were monitored at sites C58 and C39, near the junction of Fulford Main Street and Heslington Lane (northbound carriageway) and were $32.5\mu\text{g}/\text{m}^3$ and $32.7\mu\text{g}/\text{m}^3$ respectively. These sites have consistently exhibited the highest NO_2 concentrations in the Fulford AQMA technical breach area for a number of years. The bias corrected annual mean results from these site for the last 7 years are shown below. Upper confidence limits are also shown for information, which indicate the maximum potential concentration of NO_2 recorded in these locations, given the precision of the diffusion tube monitoring technique.

Table 3.1: Monitoring results at site reference C39 and C58

Tube Ref: C39	2012	2013	2014	2015	2016	2017	2018
Annual Mean NO_2 Concentration ($\mu\text{g}/\text{m}^3$)	40.2	31.5	35.3	35.1	32.6	34.9	32.7
Upper Confidence Limit ($\mu\text{g}/\text{m}^3$)	43.4	32.8	37.2	36.6	34.1	36.2	33.7
Tube Ref: C58	2012	2013	2014	2015	2016	2017	2018
Annual Mean NO_2 Concentration ($\mu\text{g}/\text{m}^3$)	43.2	36.3	39.5	36.8	35.5	35.3	32.5
Upper Confidence Limit ($\mu\text{g}/\text{m}^3$)	46.6	37.7	41.5	38.4	37.2	36.5	33.5

Pollutant concentrations will vary from year to year due to the influence of meteorological conditions and DEFRA guidance makes it clear that authorities should avoid cycling between declaring, revoking and declaring again simply due to these variations. For this reason, it is expected that authorities will need to consider measurements carried out over several years or more, national trends in emissions as well as local factors that may affect the AQMA, including measures introduced as part of the Air Quality Action Plan, together with information on high and low pollution years.

In the Annual Status Report submitted to DEFRA in June 2017 it was highlighted that at least 1-2 additional years of monitoring (demonstrating that levels of NO₂ remain well under the annual mean objective) would be needed in this area before revocation could be considered. As annual mean concentrations of NO₂ monitored in this area have not exceeded 35.3µg/m³ in the last 2 years, City of York Council recommends that this AQMA is revoked as soon as practically possible. This revocation is subject to approval by the Executive Member for Environment.

Concentrations of NO₂ monitored in the former Salisbury Terrace AQMA in 2018 were all well below the annual mean objective of 40µg/m³. Monitoring results indicate that the health based annual mean nitrogen dioxide continues to be met in this area and that City of York Council was correct to revoke this AQMA.

In City of York Council's 2017 Annual Status Report it was highlighted that consideration should be given to extending the city centre AQMA to include new relevant exposure for the annual mean objective in Coppergate. City of York Council's 2018 Annual Status report confirmed that this amendment was necessary and on 17th December 2018, the boundary of the city centre AQMA was extended to include the full length of Coppergate and the buildings either side of the road. The new AQMA (Order No. 5) also removes the reference to breaches of the short-term hourly objective along George Hudson Street / Rougier Street / Bridge Street based on recent monitoring results in this area. Diffusion tube monitoring will continue along Coppergate throughout 2019 and a further update on concentrations of NO₂ will be provided in City of York Council's next Annual Status Report, due June 2020. A copy of the Order and accompanying map can be found on City of York Council's air quality website, JorAir, see: <http://jorair.co.uk/air-quality-in-york/aqmas/>

The latest monitoring results for Coppergate are summarised in table 3.2 below.

Table 3.2: Monitoring on Coppergate

Tube reference	Location	Bias Corrected Annual Mean NO ₂ (µg/m ³) (Upper Confidence Limit (µg/m ³) shaded below where applicable)					
		2013	2014	2015	2016	2017	2018
D50	Drainpipe at side of card shop, Coppergate	42.8	44.3	41.9	40.3	37.7	37.9
		44.5	46.6	43.6	42.2	39.1	39.1
D56	Three Tuns Pub, 12 Coppergate	-	-	51.7 (estimate)	47.4	42.1	42.3
		-	-	-	49.7	43.6	43.7
D57	Lampost 4, Pedestrian Crossing, Coppergate	-	-	37.1 (estimate)	35.7 (estimate)	30.3 (estimate)	33.8
		-	-	-	-	-	34.9
D58	Traffic lights, opposite Duttons, Coppergate	-	-	44.0 (estimate)	38.9	38.7	36.8
		-	-	-	40.8	40.2	37.9

The Three Tuns Pub (on which tube D56 is located) is considered to be a relevant location as there is living accommodation at first floor and above. The tube is located on a drainpipe on the pub facade between ground and first floor level and continues to indicate an exceedence of the annual mean NO₂ objective.

3.2.2 Particulate Matter (PM₁₀)

Table A.5 in Appendix A compares the ratified and adjusted monitored PM₁₀ annual mean concentrations for the past 5 years with the air quality objective of 40µg/m³. Trends in annual mean PM₁₀ concentrations are shown in Figure A.2. PM₁₀ concentrations increased at city centre roadside locations, Fishergate and Holgate, between 2017 and 2018 (17% and 23% respectively). Annual mean concentrations of PM₁₀ monitored at the Bootham background site also increased between 2017 and 2018, although this was much less pronounced (3%). The general trend in PM₁₀ concentrations (based on linear regression) over the last 7 years is down at all roadside monitoring sites. Trend analysis at the Bootham background monitoring site has shown that levels of PM₁₀ have also generally fallen over the last 5 years.

Table A.6 in Appendix A compares the ratified continuous monitored PM₁₀ daily mean concentrations for the past 5 years with the air quality objective of 50µg/m³, not

to be exceeded more than 35 times per year. Trends in the number of exceedences since 2012 are shown in Figure A.3.

Tables A.5 and A.6 demonstrate that there were no exceedances of the annual mean or daily mean PM₁₀ objectives in York during 2018. This has been the case since monitoring of PM₁₀ was established in the city.

3.2.3 Particulate Matter (PM_{2.5})

Although not explicitly required under the Local Air Quality Management regime, where Local Authorities undertake PM_{2.5} monitoring they are encouraged to report it as part of the Annual Status Report. Micro-particulate, or PM_{2.5}, is the pollutant which has the biggest impact on public health and on which the Public Health Outcomes framework (PHOF) indicator is based.

City of York Council monitors PM_{2.5} at three locations in the city, namely Bootham (urban background site), Fishergate (roadside site) and Gillygate (roadside site). Monitoring of PM_{2.5} at Fishergate and Bootham is carried out as part of DEFRA's Automatic and Rural Monitoring Network (AURN). Monitoring at Gillygate was established by City of York Council as a result of the growing concerns over the health impacts of PM_{2.5}.

Table A.7 in Appendix A presents the ratified and adjusted monitored PM_{2.5} annual mean concentrations for the past 5 years. Figure A.4, also in Appendix A, demonstrates trends in annual mean PM_{2.5} concentrations since 2012. Trend analysis over the last 7 years reveals that concentrations of PM_{2.5} have generally decreased in this time, although levels monitored at the Bootham background site increased by 24% between 2017 and 2018. This was not reflected at Fishergate and Gillygate, where annual mean concentrations of PM_{2.5} fell by 8% and 2% respectively. No exceedances of the annual mean PM_{2.5} objective have been recorded to date since monitoring of PM_{2.5} was established.

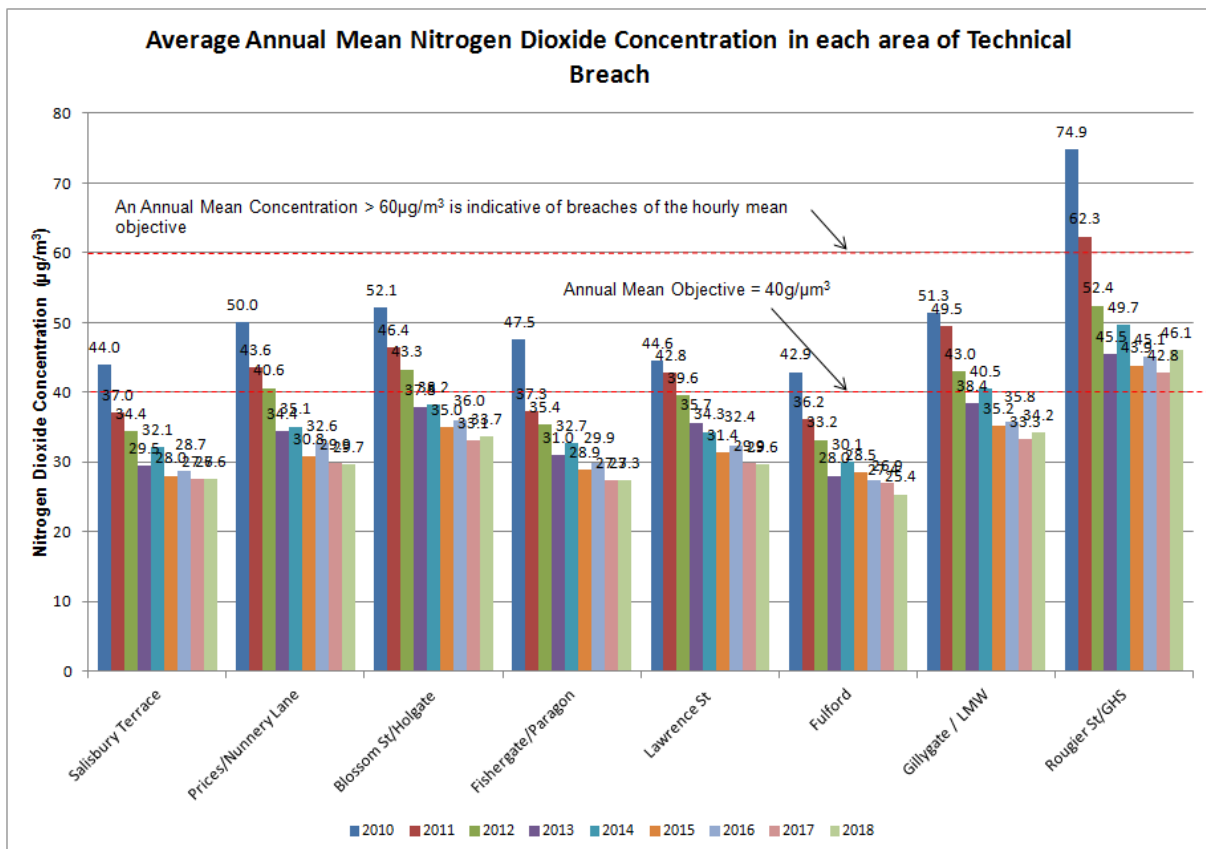
3.3 Air Quality Indicators

3.3.1 Council Plan Air Quality Indicators

Two air quality indicators have been developed for City of York Council’s ‘Council Plan’. These are used to look at trends in air quality across AQMAs/technical breach areas and are as follows:

CAN027 – Average Annual mean Nitrogen Dioxide Concentration in each area of Technical breach. This indicator provides an average nitrogen dioxide concentration based on all monitoring undertaken in each area of technical breach. The Salisbury Terrace AQMA (revoked 2017) is also shown for information. Monitoring results include bias corrected diffusion tube data and data from continuous monitors (if applicable). Trends in recent years are shown in figure 3.1 below.

Figure 3.1: Indicator CAN027 – Trends in average annual mean nitrogen dioxide concentration in each area of technical breach



Average concentrations of NO₂ monitored in the majority of technical breach areas were very similar in 2018 compared to 2017. Based on indicator CAN027, the most significant improvement in air quality in 2018 was seen in Fulford (5.9% decrease in

average NO₂ compared with 2017). Whilst the Rougier Street / George Hudson Street area exhibited a 7.6% increase in average NO₂ in 2018 compared with 2017, this was mainly due to the reinstatement of a monitoring location in 2018 that was closed during 2017 for bus stop improvement works (this particular tube result was especially elevated in 2018 and has increased the indicator significantly). Excluding this result from the analysis showed that concentrations at other monitoring locations within this technical breach area were in fact similar in 2018 to 2017. Changes in average NO₂ between 2017 and 2018 in other locations were all within 3%, with 4 of the areas exhibiting changes of less than 1%. Indicator CAN027 continues to suggest a steady downward trend in nitrogen dioxide concentrations over the last 9 years.

CAN028 - *Maximum Nitrogen Dioxide Concentration (at relevant location) in each area of Technical Breach*. This indicator provides a maximum recorded annual mean nitrogen dioxide concentration in each area of technical breach. The Salisbury Terrace AQMA (revoked 2017) is also shown for information. This only considers monitoring at relevant locations and thus is useful to look at the validity of existing AQMA boundaries year to year.

Figure 3.2: Indicator CAN028 – Maximum nitrogen dioxide concentration (at relevant location) in each area of technical breach

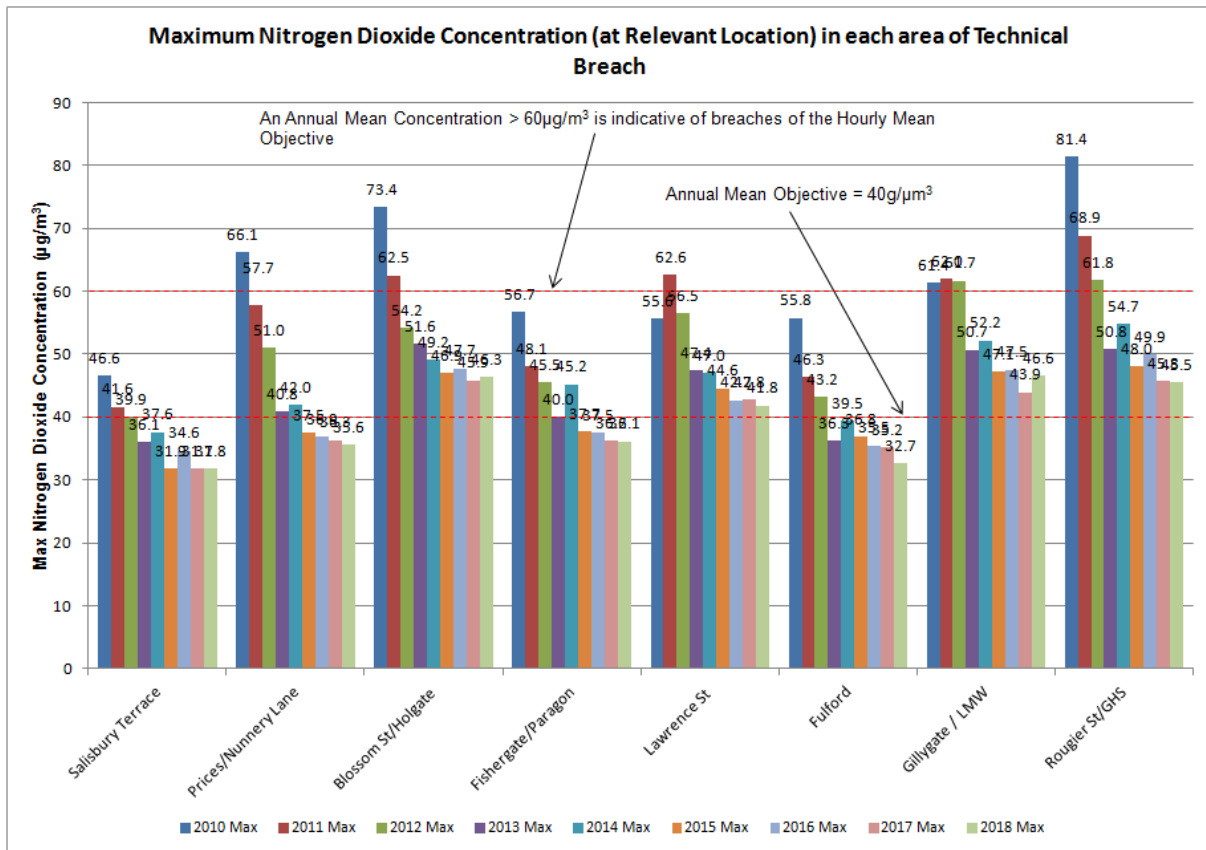


Figure 3.2 above demonstrates that the maximum annual mean nitrogen dioxide concentration at a relevant location was below the annual mean objective of $40\mu\text{g}/\text{m}^3$ at 3 of the 7 current areas of technical breach (*note: the Salisbury Terrace AQMA was revoked in 2017 but is shown for information*). However, based on the precision analysis carried out on the diffusion tube results and consideration of results from previous years, the only current technical breach area considered to be consistently below the annual mean NO_2 objective is Fulford Main Street. Monitoring results (upper 95% confidence limits) for this indicator the 2018 calendar year from the Prices/Nunnery Lane and Fishergate technical breach areas were both $37\mu\text{g}/\text{m}^3$ (i.e. under the objective level, but still elevated).

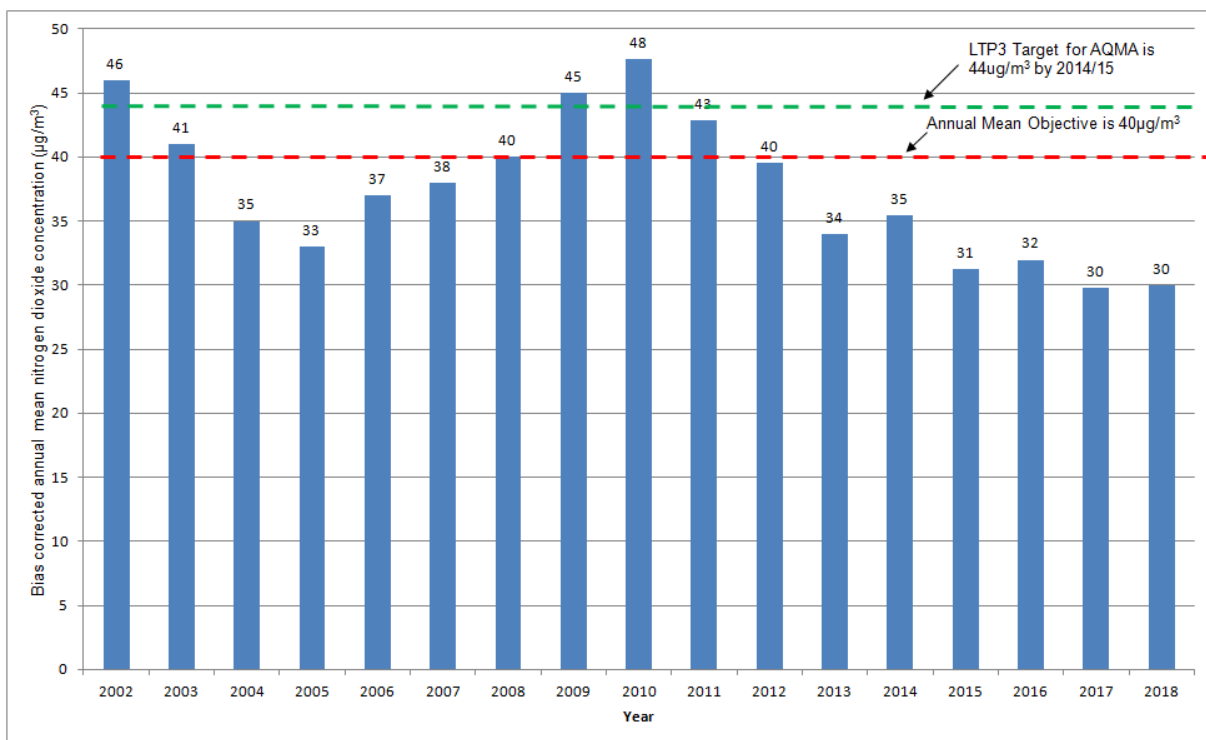
Maximum concentrations of NO_2 monitored at a relevant location within the former Salisbury Terrace AQMA indicate that the health based annual mean objective continues to be met in this area and that City of York Council was correct to revoke this area in 2017.

Monitoring results for Fulford Main Street indicate that the maximum recorded levels of NO₂ within this area have remained well within the annual mean objective for a number of years. Further commentary on the proposed course of action for the Fulford AQMA is provided in section 3.2.1.

3.3.2 Local Transport Plan

For the purpose of monitoring the impact of York’s Local Transport Plan (LTP) a local air quality indicator has been established. This indicator measures the mean of annual average results obtained from 36 diffusion tubes located within York’s city centre AQMA. Figure 3.3 below shows the results from this indicator for the period 2002 to 2018. As can be seen from figure 3.3, nitrogen dioxide concentrations across the city were in general decline between 2002 and 2005. This was followed by a steady increase in concentrations between 2006 and 2010. Between 2010 and 2018 concentrations of nitrogen dioxide within the city centre AQMA improved again, with levels of nitrogen dioxide across all the sites used for the indicator falling to 30µg/m³ in 2018 (this indicator was also 30µg/m³ in 2017). The figure of 30µg/m³ recorded in 2017/2018 is the lowest recorded value since the indicator was established in 2002.

Figure 3.3: Trends in Annual Mean Nitrogen Dioxide Concentrations measured at Diffusion Tube Monitoring Sites



4 Planning Application Review

The land-use planning system is recognised to play an integral part in improving air quality. This requires close co-operation between planners and environmental health practitioners.

City of York Council regularly reviews applications with respect to potential air quality and other environmental impacts. Table 4.1 provides a list of those planning applications that have been considered in relation to air quality by City of York Council's Public Protection team during 2018. A formal air quality impact assessment has been requested for some of these applications. Where applications listed in City of York Council's last Annual Status Report were marked as 'awaiting decision', an update has been provided in the table below.

The Annual Status Report provides an opportunity to keep a record of such applications to provide a picture of where changes in air quality may occur in the future. The information presented is also useful to identify where combined impacts of several developments may become important.

It should be noted that electric vehicle recharging is now requested for all applications for residential properties where secure off-street parking is provided (secure parking is defined as a house with a garage or private driveway). Due to the large number of applications that this applies to, these have been omitted from the table below. Comments on all applications processed by City of York Council are available by searching the planning reference number at:

<https://planningaccess.york.gov.uk/online-applications/>

Table 4.1: Planning Applications Considered during 2018

[N.B. Comments provided relating to application status reflect the position as of 1 May 2019]

Planning Reference	Description	Type	Comments	Status
14/02789/OUTM	Outline application for the development of the former British Sugar site	Outline Application	Recommended conditions regarding CEMP and EV charging. Comments also made in relation to the Travel Plan provided for the site. Contribution sought for continued air quality monitoring in the vicinity of the site.	2019 Update Application Withdrawn (31/12/2018)
15/00166/FULM	Development of 188 dwellings	Full Application	Conditions suggested regarding the provision of electric vehicle recharging on the site. Emissions mitigation statement requested for the site.	2019 Update Awaiting decision
15/00167/FULM	Development of 69 dwellings	Full Application	Conditions suggested regarding the provision of electric vehicle recharging on the site. Emissions mitigation statement requested for the site.	2019 Update Awaiting decision
15/00183/FULM	Residential development of 130 dwellings with associated public open space and allotments, Land At Boroughbridge Road To The South West Of Former Civil Service Club and Trenchard Road	Full Application	Recommended condition regarding CEMP, electric vehicle recharging and emission mitigation package	2019 Update Awaiting decision

Planning Reference	Description	Type	Comments	Status
16/02545/FUL	Change of use from warehouse to gym. London Ebor Developments Plc, Millfield Business Centre, Millfield Lane, Nether Poppleton, York, York, YO26 6PB	Full Application	Conditions recommended regarding provision of at least one electric vehicle recharging point on the site	2019 Update Approved <i>(22/3/2019)</i> <i>Recommended condition attached</i>
12/01749/REMM	Reserved matters application for Germany Beck Site, East Of Fordlands Road, York	Reserved Matters	Review of updated Environmental Statement (updated from 2012 Environmental Statement)	2019 Update Awaiting decision Comments made in relation to emissions assessment and electric vehicle recharging provision on the site

Planning Reference	Description	Type	Comments	Status
15/00524/OUTM	Outline application for the development of the site comprising up to 1,100 residential units, community uses and new public open space. British Sugar Corporation Ltd, Plantation Drive, York, YO26 6XF	Outline Application	As a result of updated traffic data associated with the scheme and access arrangements there is the potential for air quality impacts to occur at locations that are different to that reported in the original air quality chapter of the Environmental Statement. Revised air quality modelling work was therefore carried out to determine if there were any impacts over and above that shown in the previous Environmental Statement submitted in support of the scheme.	<p>2019 Update</p> <p>Approved (28/9/2018)</p> <p>Annual mean and short term mean concentrations of NO₂ and PM were predicted to be below the relevant air quality objective values in all scenarios considered. Air quality impacts were therefore not considered to be significant.</p>
14/02979/FULM	Residential development of 266 dwellings with associated access, public open space, landscaping and infrastructure. Former Civil Service Club And Agricultural Land To The North Boroughbridge Road, York	Full Application	Facilities sought for recharging electric vehicles at all dwellings with off-street parking	<p>2019 Update</p> <p>Awaiting Decision</p>

Planning Reference	Description	Type	Comments	Status
17/02429/OUTM	Outline application for 165 dwellings, care home (approx 80 bed), health and public service building and associated green space, access and infrastructure. Former Lowfield School, Dijon Avenue, York	Outline Application	Conditions recommended regarding electric vehicle recharging and submission of a Construction Environmental Management Plan (CEMP)	<p>2019 Update</p> <p>Approved (21/8/2018)</p> <p>Conditions attached regarding CEMP and the provision of an electrical socket suitable for charging electric vehicles at each dwelling</p>
17/02428/FULM	Erection of 96no. two and three storey houses, 26no. bungalows and three storey 18no. apartment building with new access and associated infrastructure. Former Lowfield School, Dijon Avenue, York	Full Application	Conditions recommended regarding electric vehicle recharging and submission of a Construction Environmental Management Plan (CEMP)	<p>2019 Update</p> <p>Approved (21/8/2018)</p> <p>Conditions attached regarding CEMP and the provision of an electrical socket suitable for charging electric vehicles at each dwelling</p>

Planning Reference	Description	Type	Comments	Status
17/02484/FUL	Change of use of retail unit (use class A1) to 1no. apartment (use class C3) with associated alterations to shop front. Platinum E-Liquid, 18 Fishergate, York, YO10 4AB	Full Application	Condition recommended regarding non-opening windows and mechanical ventilation	<p>2019 Update</p> <p>Approved (23/11/2018)</p> <p>Condition attached regarding the provision of a ventilation strategy for habitable rooms facing onto Fishergate.</p>
17/02866/FUL	Conversion of upper floors provide 3no. residential units. La Salle UK Ventures Property, 14 Coppergate, York YO1 9NR	Full Application	Recommended that all first and second floor windows to habitable rooms facing onto Coppergate should be made non-opening, with ventilation provided through continuous mechanical supply and extract (with heat recovery) away from the roadside.	<p>2019 Update</p> <p>Approved (19/6/2018)</p> <p>Condition attached regarding non-opening windows and ventilation strategy</p>

Planning Reference	Description	Type	Comments	Status
17/03033/FUL	Removal of condition 4 of permitted application 14/01080/FUL (conversion of doctors surgery to dwellinghouse) to remove requirement for ventilation to be provided through continuous mechanical supply and extract. Gillygate House, 28 Gillygate, York, YO31 7EQ	Full Application	Assuming the windows facing Gillygate remained non-opening and the ventilation in the property satisfied Building Regulations, Public Protection did not have any concerns with respect to removing the requirement for mechanical ventilation	2019 Update Approved (21/6/2018)
17/03004/FULM	Erection of self storage facility, with associated access and landscaping, Proposed Self Storage Facility, Water Lane, York	Full Application	Public Protection requested a condition requiring provision of an electric vehicle recharging point prior to occupation of the development.	2019 Update Refused (13/8/2018) Development considered prejudicial to the residential amenity of neighbouring properties

Planning Reference	Description	Type	Comments	Status
18/00017/OUTM	Outline planning application with full details of means of access for residential development of 970 dwellings with associated demolition, infrastructure works, open space, primary school, community facilities and convenience store on land West of Monks Cross Link Road	Outline Application	Public Protection requested conditions regarding a Construction Environmental Management Plan (CEMP) and facilities for charging electric vehicles on the site. Facilities for charging electric vehicles were requested for all dwellings that included off-street parking. It was also requested that a minimum of 2% of all non-residential parking spaces should incorporate charging infrastructure	Awaiting Decision
18/00021/FULM	Erection of two storey vehicle dealership building comprising of showroom, workshop facilities and associated car parking	Full Application	Customer and staff parking proposed. Public Protection requested a condition regarding the provision of electric vehicle recharging infrastructure on the site.	2019 Update Approved (19/11/2018) Condition attached regarding provision of external socket for charging electric vehicles

Planning Reference	Description	Type	Comments	Status
17/02951/FUL	Change of use from hotel (use class C1) to tourist hostel (use class Sui Generis) with associated bin and cycle storage, Holgate Hill Hotel, 124 Holgate Road, York, YO24 4BB	Full Application	Public Protection requested a condition requiring provision of an electric vehicle recharging point prior to occupation of the development.	Approved (20/4/2018) Condition attached regarding provision of an electrical socket suitable for charging electric vehicles (minimum rated output 3.7kW/16A)
17/02815/FUL	Erection of dwelling and associated access. The Studios, Panman Lane, Holtby, York, YO19 5UA	Full Application	Public Protection requested a condition requiring provision of an electric vehicle recharging point prior to occupation of the development.	Refused (14/3/2018) Considered inappropriate development within the greenbelt
17/02984/FUL	Erection of 9no. dwellings with associated access and parking. Land To East Of Ashville Farm, Milestone Avenue, Rufforth, York	Full Application	Public Protection requested conditions relating to electric vehicle recharge points and a Construction Environmental Management Plan (CEMP)	Application Withdrawn (19/2/2018)

Planning Reference	Description	Type	Comments	Status
17/02860/FUL	Change of use of ground floor shop (use class A1) to 1no. apartment (use class C3) and alterations to front elevation, Charlie Macs, 24 Fishergate, York, YO10 4AB	Full Application	Public Protection recommended conditions relating to non-opening windows and a mechanical ventilation strategy	Application Withdrawn (5/3/2018)
17/03004/FULM	Erection of self storage facility, with associated access and landscaping, Proposed Self Storage Facility Water Lane York	Full Application	Public Protection requested a condition requiring provision of an electric vehicle recharging point prior to occupation of the development.	Refused (13/8/2018) Considered seriously prejudicial to the residential amenity of the neighbouring properties.
17/02484/FUL	18 Fishergate, York, change of use from retail to residential dwelling	Full Application	Public Protection requested that ground floor windows facing Fishergate should be non-opening and a mechanical ventilation strategy should be designed for any habitable rooms.	Approved (23/11/218) Condition attached regarding mechanical ventilation strategy for habitable rooms. Non-opening windows were also required to ground floor habitable rooms facing Fishergate.

Planning Reference	Description	Type	Comments	Status
18/00290/FUL	Erection of detached building to house 2no. biomass boilers and pellet storage area, Rosevale Private Residential Home, 33 The Village, Wigginton, York	Full Application	Conditions requested relating to the type of boiler, the maximum emissions, the minimum stack height and the use of EN Plus A1 certified pellets.	Application Withdrawn (28/3/2018)
18/00680/OUTM	Outline planning application with all matters reserved except for means of access for the erection of 160no. dwellings with public open space, landscaping and drainage, OS Field Lying To The South Of And Adjacent to No 1 Tadcaster Road, Copmanthorpe, York	Outline Application	Public Protection requested conditions relating to electric vehicle recharge points and a Construction Environmental Management Plan (CEMP)	Awaiting Decision
18/00495/FULM	Erection of 64 bedroom care home, car parking and landscaping following the demolition of existing care home (revised scheme). Site Of Former Fordlands House, 1 Fordlands Road, York	Full Application	Public Protection requested a condition relating to the installation of an electric vehicle charge point (dedicated parking bay for the exclusive use of electric vehicles) and the preparation of a Construction Environmental Management Plan (CEMP)	Approved (18/7/2018) Recommended conditions were attached to decision notice

Planning Reference	Description	Type	Comments	Status
18/01123/OUT	Outline planning application with all matters reserved for erection of 2no. dwellings (resubmission), 251 Thanet Road, York, YO24 2PE	Outline Application	Public Protection requested a condition requiring provision of an electric vehicle recharging point prior to occupation of the development.	Refused (13/8/2018) Refused on basis of inappropriate subdivision of a residential garden
18/01011/OUTM	Outline planning application with all matters reserved except for means of access for a mix of uses including 425 dwellings, offices, retail, a creche and community uses with associated car parking, landscaping, highways infrastructure and other ancillary works. Land At Cocoa West, Wigginton Road, York	Outline Application	Public Protection requested conditions relating to electric vehicle recharging points and the preparation of a Construction Environmental Management Plan (CEMP). Emission mitigation measures agreed for the development.	Awaiting Decision
18/01354/EIASP	Scoping opinion in relation to proposed mixed use development of up to 500 dwellings, public open space, allotments, school, sports facilities and associated access. OS Fields 5475 7267 And 8384 Moor Lane, Acomb, York	EIA Scoping	Public Protection outlined the scope of the air quality assessment that would be required as part of the EIA	Decided (10/10/2018)

Planning Reference	Description	Type	Comments	Status
18/01866/FULM	Club Salvation, George Hudson Street, York, YO1 6JL	Full Application	Non-opening windows and mechanical ventilation recommended for habitable rooms at first and second floor level.	Application withdrawn (8/2/2019)
18/02025/EIASP	Scoping opinion in respect of a proposed business park (use class B1) including innovation centre with associated car parking, park and ride facility, hard and soft landscaping and highway alterations. Field Adjacent A19 and St Nicholas Avenue, York	EIA Scoping	Public Protection outlined the scope of the air quality assessment that would be required as part of the EIA	Decided (29/11/2018)
18/01884/OUTM	Outline planning application with all matters reserved for the redevelopment of York Central	Outline Application	Full response from Public Protection re: air quality issues available on York Planning Portal using reference 18/01884/OUTM	Approved (25/3/2019) Outline planning approval was granted by City of York Council's Planning Committee on 25/3/2019. The application will now be referred to the Secretary of State.
18/01818/FUL	Use of land for siting of 5no. mobile shepherds huts with associated parking area together with	Full Application	Public Protection requested a condition requiring provision of an electric vehicle recharging	Application withdrawn (5/2/2019)

Planning Reference	Description	Type	Comments	Status
	sustainable drainage system and a waste water treatment system. Gillrudding Grange, Naburn Lane, Naburn, York, YO19 6HJ		point prior to first occupation of the development.	
18/02797/FULM	Erection of 7 purpose-built student accommodation buildings. Frederick House, Fulford Road, York, YO10 4EG	Full Application	The proposed living accommodation is set well back from Fulford Road and the site is unlikely to generate significant amounts of additional traffic due to the low level of parking proposed. Public Protection has previously been consulted on the proposals and it was not considered that an air quality assessment would be required. Public Protection requested a condition requiring provision of an electric vehicle recharging point	Application withdrawn (11/2/2019)
18/02213/FUL	Change of use from office (B1A) to driver testing centre (Sui Generis). Window replacement with an entrance door and amendments to car park to create two disabled parking spaces and improve the footpath. Unit 2, Arabesque House, Monks Cross Drive, Huntington, York, YO32 9GW	Full Application	Public Protection requested a condition requiring provision of an electric vehicle recharging point prior to first occupation of the development.	Approved (21/11/2018) Recommended condition not attached to approval

Planning Reference	Description	Type	Comments	Status
18/02372/EIASP	Scoping opinion in respect of the York Railway Station frontage improvement works. Station Building Railway Station, Station Road, York, YO24 1AY	EIA Scoping	Public Protection outlined the scope of the air quality assessment that would be required as part of the EIA	Decided (21/11/2018)
18/02495/FULM	Partial demolition of existing building and construction of 3 to 5 storey hotel to provide 158 bedrooms, 36 - 44 Piccadilly, York	Full Application	No car parking was proposed and it was not anticipated that traffic (AADT) would increase by more than 5%. No exposure issues were identified as air quality in the vicinity of the site is currently well within health based objective levels. A condition relating to a Construction Environmental Management Plan (CEMP) was recommended.	Application Withdrawn (15/1/2019)
18/02659/OUT	Outline application seeking approval for the layout and appearance of an energy storage facility with up to 25 battery storage units along with ancillary structures including switchgear, transformer, standby emergency generator and 2 no. containers enclosed with steel palisade fencing and screened with landscaped bunding	Outline Application	The proposed emergency generator on the site is located around 250m from the nearest residential dwelling and would only be used to energise the site in rare situations where there is no external grid supply but the output from the batteries is required. No air quality conditions were considered necessary.	Approved (22/2/2019)

Planning Reference	Description	Type	Comments	Status
18/02709/EIASN	Screening opinion in respect of the formation of an upstream flood storage area on the River Foss north-east of Strensall. Foss Upstream Storage Area, Brecks Lane, Strensall, York	EIA Screening Opinion	Public Protection outlined the requirements for the air quality assessment	Decided – EIA required (21/2/2019)
18/02783/EIASN	Screening opinion for the York Flood Alleviation Scheme (Coppins Farm to Scarborough Bridge (Left Bank) - Flood Cell B11), Flood Alleviation Scheme Cell B11 Coppins Farm To Scarborough Bridge Left Bank, Almery Terrace, York	EIA Screening Opinion	Public Protection outlined the requirements for the air quality assessment	Decided - EIA not required (14/1/2019)
18/02860/EIASN	Screening opinion for proposed development site at York Designer Outlet. York Designer Outlet St Nicholas Avenue York YO19 4TA	EIA Screening Opinion	Public Protection outlined the requirements for the air quality assessment and highlighted the need for the provision of electric vehicle charging facilities and the preparation of a Construction Environmental Management Plan (CEMP)	Decided - EIA not required (27/2/2019)

Planning Reference	Description	Type	Comments	Status
18/02687/OUTM	Up to 516 residential units (Class C3) with local centre (use Classes A1-A4, B1a, C3, D1) public open space with pavilion and associated infrastructure and full application for demolition of existing buildings and structures and creation of ecological protection and enhancement zone. Moor Lane, Acomb, York	Outline Application	Public Protection highlighted the need for the provision of electric vehicle charging facilities and the preparation of a Construction Environmental Management Plan (CEMP). Whilst an emissions assessment and damage cost calculation has been carried out, a mitigation statement had not been prepared in line with CYC's draft guidance and therefore this was also conditioned. Public Protection also highlighted that any proposals for solid fuel combustion would require additional air quality assessment.	Awaiting Decision

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Inlet Height (m)
CM1	Bootham	B	460,022	452,777	NO _x , PM ₁₀ , PM _{2.5}	No	C, FDMS	Y (0m)	49.6	3.04
CM2	Fishergate	R	460,746	451,038	NO _x , PM ₁₀ , PM _{2.5}	Yes	C, FDMS	Y (10m)	3.2	2.66
CM3	Holgate	R	459,512	451,282	NO _x , PM ₁₀	Yes	C, FDMS	Y (12m)	2.5	1.65
CM4	Nunnery Lane	R	460,068	451,199	NO _x	Yes	C	Y (4m)	1.7	1.65
CM5	Gillygate	R	460,147	452,345	NO _x , PM _{2.5}	Yes	C, TEOM	Y (3m)	2.1	2.5
CM6	Lawrence Street	R	461,256	451,340	NO _x	Yes	C	Y (5m)	3.2	1.65
CM7	Heworth Green	R	461,126	452,602	NO _x	No	C	Y (3m)	1.2	1.53
CM8	Plantation Drive	R	457,428	452,620	PM ₁₀	No	TEOM	Y (17m)	1.0	1.65
CM9	Fulford Road	R	460,937	449,464	NO _x	Yes	C	Y(19m)	5.0	1.65

Notes:

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

(2) N/A if not applicable.

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

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
5	Lampost 15 Forge Close, Jockey Lane	Roadside	462040	454883	NO ₂	NO	16.9	1.9	N	~2.75
6	Lampost top of Nunnery Lane Car Park	Roadside	459777	451406	NO ₂	YES	7.7	2.8	N	~2.75
7	Gillygate opposite Portland Street	Roadside	460217	452421	NO ₂	YES	2.3	0.3	N	~2.75
8	Portland Street - triplicate	Urban Background	460163	452468	NO ₂	NO	3.7	1.8	N	~2.75
9	Portland Street - triplicate	Urban Background	460163	452468	NO ₂	NO	3.7	1.8	N	~2.75
11	Holly Bank	Urban Background	458846	450946	NO ₂	NO	7.7	0.7	N	~2.75
13	Papillion hotel, Gillygate	Roadside	460176	452377	NO ₂	YES	0.1	1.5	N	~2.75
14	Gillygate Surgery	Roadside	460167	452347	NO ₂	YES	0.2	2.3	N	~2.75
15	Foss Islands Rd	Roadside	461105	451458	NO ₂	YES	1.9	1.9	N	~2.75
16	Prices Lane	Roadside	460160	451152	NO ₂	YES	2.5	1.2	N	~2.75
17	Drainpipe of house 18 Queen St	Roadside	459646	451500	NO ₂	YES	0.2	1.3	N	~2.75
18	Lampost 4 Haxby Road	Roadside	460457	452903	NO ₂	YES	3.3	1.9	N	~2.75
25	Heworth Road - Lamppost 6	Roadside	461721	452709	NO ₂	NO	7.2	1.4	N	~2.75
26	Haleys Terrace (previously Longwood Road)	Roadside	460829	453524	NO ₂	NO	8.5	0.4	N	~2.75
33	Haxby Road (nr Whitecross Rd)	Roadside	460598	453227	NO ₂	NO	14.5	1.7	N	~2.75

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
35	Carr Lane	Roadside	457603	451492	NO ₂	NO	6.2	2.9	N	~2.75
37	Jarvis Abbey Park	Roadside	459522	451187	NO ₂	YES	21.6	2.7	N	~2.75
44	Lampost 8 Monkgate Cloisters	Roadside	460679	452326	NO ₂	YES	2	1.6	N	~2.75
45	Clarence St	Roadside	460319	452754	NO ₂	YES	3.6	2	N	~2.75
47	Strensall Road	Roadside	462009	456996	NO ₂	NO	19.2	0.8	N	~2.75
50	BLANK	N/A	N/A	N/A	NO ₂	N/A	N	N/A	N	N/A
60	First lampost on Navigation Road	Roadside	461017	451781	NO ₂	YES	13	0.2	N	~2.75
78	Gillygate Monitoring Station - triplicate	Roadside	460149	452342	NO ₂	YES	3.4	2.3	Y	~2.75
79	Gillygate Monitoring Station - triplicate	Roadside	460149	452342	NO ₂	YES	3.4	2.3	Y	~2.75
80	Gillygate Monitoring Station - triplicate	Roadside	460149	452342	NO ₂	YES	3.4	2.3	Y	~2.75
83	Drainpipe 6 Stockton Lane - nr Heworth Rd roundabout	Urban Background	461597	452830	NO ₂	NO	0.1	8.8	N	~2.75
88	Lampost 1 Yew Tree Mews Osbaldwick Village	Urban Background	463354	451972	NO ₂	NO	4.9	0.6	N	~2.75
90	Lampost Opposite Montaque Street on Cambleshon Road	Roadside	459997	450109	NO ₂	NO	19.8	1	N	~2.75
96	Heslington Lane	Roadside	460978	449452	NO ₂	NO	1.5	2.5	N	~2.75
100	House Near A59 Ringroad Roundabout	Roadside	456228	453312	NO ₂	NO	0.2	15	N	~2.75
101	Wiggington Road near	Roadside	459746	455897	NO ₂	NO	15	0.5	N	~2.75

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
	the ring road roundabout									
102	Signpost between houses 252 & 254 on Salisbury Terrace - triplicate	Roadside	458703	452429	NO ₂	NO	0.2	1	N	~2.75
103	Signpost between houses 252 & 254 on Salisbury Terrace - triplicate	Roadside	458703	452429	NO ₂	NO	0.1	1.4	N	~2.75
104	Signpost between houses 252 & 254 on Salisbury Terrace - triplicate	Roadside	458703	452429	NO ₂	NO	0.1	1.4	N	~2.75
107	Inbetween corner shop & betting office	Roadside	458779	452387	NO ₂	NO	3	3.8	N	~2.75
108	On signpost opposite side of road from 200 Salisbury Terrace	Roadside	458814	452373	NO ₂	NO	0.2	1.5	N	~2.75
109	Signpost outside 16 Rougier Street	Roadside	459924	451833	NO ₂	YES	0.2	2.5	N	~2.75
110	Signpost inbetween Club Salvation & 31 George Hudson Street	Roadside	459985	451727	NO ₂	YES	0.2	2.3	N	~2.75
111	Lampost at side of Cedar Court opposite entrance to Multi-storey Car Park on Tanner Row	Roadside	459917	451728	NO ₂	NO	26	2.6	N	~2.75
112	Lampost outside St Gregorys Mews, opposite Council HQ	Roadside	459873	451684	NO ₂	NO	1	2.3	N	~2.75

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
	Toft Green									
114	Bus Stop outside Society bar/cafe Rougier Street	Roadside	459981	451778	NO ₂	YES	3.5	2.7	N	~2.75
116	111 Poppleton Road, drainpipe	Roadside	458212	452037	NO ₂	NO	0.1	5.3	N	~2.75
125	Osbalwick Derwenthorpe	Roadside	463194	451967	NO ₂	NO	20	1.6	N	~2.75
126	New Tube (Osbalwick Parish Council) nr Bridge	Roadside	463482	451896	NO ₂	NO	17.5	0.9	N	~2.75
127	Lampost to left of 102 Layerthorpe (flats)	Roadside	461108	452313	NO ₂	NO	3.3	1.8	N	~2.75
128	Drainpipe between 7-9 Livingstone Street	Roadside	458686	452369	NO ₂	NO	0.1	1.6	N	~2.75
129	Drainpipe to front of 88 Station Road	Roadside	455968	453397	NO ₂	NO	0.1	14.5	N	~2.75
2a	Fishergate Monitoring station - triplicate	Roadside	460746	451034	NO ₂	YES	16.3	3.5	Y	~2.75
2b	Fishergate Monitoring station - triplicate	Roadside	460746	451034	NO ₂	YES	16.3	3.5	Y	~2.75
2c	Fishergate Monitoring station - triplicate	Roadside	460746	451034	NO ₂	YES	16.3	3.5	Y	~2.75
3a	Bootham Monitoring Station - triplicate	Urban Background	460024	452767	NO ₂	NO	39	49.6	Y	~2.75
3b	Bootham Monitoring Station - triplicate	Urban Background	460024	452767	NO ₂	NO	39	49.6	Y	~2.75
3c	Bootham Monitoring Station - triplicate	Urban Background	460024	452767	NO ₂	NO	39	49.6	Y	~2.75
95a	Fulford Monitoring Station - triplicate	Roadside	460938	449465	NO ₂	NO	19	6.5	Y	~2.75

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
95b	Fulford Monitoring Station - triplicate	Roadside	460938	449465	NO ₂	NO	19	6.5	Y	~2.75
95c	Fulford Monitoring Station - triplicate	Roadside	460938	449465	NO ₂	NO	19	6.5	Y	~2.75
9a	Portland Street - triplicate	Urban Background	460163	452468	NO ₂	NO	3.7	1.8	N	~2.75
A1	Bootham traffic light outside dance shop	Roadside	460088	452263	NO ₂	YES	0.2	2.3	N	~2.75
A11	Traffic lights end of Water Lane	Roadside	459341	453042	NO ₂	YES	13.6	0.4	N	~2.75
A12	Lampost 7 Clifton Green	Roadside	459251	453008	NO ₂	YES	12.9	2.2	N	~2.75
A13	Lampost 1 Clifton Dale - triplicate	Urban Background	459335	452931	NO ₂	NO	2.7	1.6	N	~2.75
A14	Lampost 1 Clifton Dale - triplicate	Urban Background	459335	452931	NO ₂	NO	2.7	1.6	N	~2.75
A14a	Lampost 1 Clifton Dale - triplicate	Urban Background	459335	452931	NO ₂	NO	2.7	1.6	N	~2.75
A17	Sailsbury Road	Roadside	458578	452472	NO ₂	NO	8.7	1.5	N	~2.75
A19	17 Sailsbury Terrace - triplicate	Roadside	458713	452414	NO ₂	NO	0.2	1.3	N	~2.75
A19a	17 Sailsbury Terrace - triplicate	Roadside	458713	452414	NO ₂	NO	0.2	1.3	N	~2.75
A19b	17 Sailsbury Terrace - triplicate	Roadside	458713	452414	NO ₂	NO	0.2	1.3	N	~2.75
A2	Drainpipe on front of registry office	Roadside	459917	452405	NO ₂	YES	0.2	3.4	N	~2.75
A20	224 Sailsbury Terrace - triplicate	Roadside	458760	452404	NO ₂	NO	0.2	1.1	N	~2.75
A20a	224 Sailsbury Terrace - triplicate	Roadside	458760	452404	NO ₂	NO	0.2	1.1	N	~2.75

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
A20b	224 Sailsbury Terrace - triplicate	Roadside	458760	452404	NO ₂	NO	0.2	1.1	N	~2.75
A21	Kingsland Terrace	Urban Background	458806	452326	NO ₂	NO	0.2	1.4	N	~2.75
A22	Kingsland Terrace	Urban Background	458792	452242	NO ₂	NO	0.2	23.8	N	~2.75
A25	Garfield Terrace	Roadside	458706	452225	NO ₂	NO	0.2	1.5	N	~2.75
A29	Low Poppleton Lane	Urban Background	456939	453013	NO ₂	NO	23.6	1.1	N	~2.75
A3	WRVS building - Bootham	Roadside	459822	452492	NO ₂	YES	0.2	2.6	N	~2.75
A30	Boroughbridge Road	Urban Background	457060	452888	NO ₂	NO	8.3	6.2	N	~2.75
A36	Boroughbridge Road	Urban Background	457625	452446	NO ₂	NO	0.2	9.4	N	~2.75
A38	Boroughbridge Road	Urban Background	457857	452334	NO ₂	NO	0.2	10.3	N	~2.75
A4	St Olaves Road	Urban Background	459699	452638	NO ₂	YES	5.8	0.7	N	~2.75
A40	Poppleton Road School	Urban Background	458109	452196	NO ₂	NO	0.2	7.9	N	~2.75
A41	140 Poppleton Road	Roadside	458172	452108	NO ₂	NO	0.2	5.3	N	~2.75
A45	Grantham Drive	Urban Background	458384	451817	NO ₂	NO	0.2	10.5	N	~2.75
A98	8 Poppleton Road	Roadside	458666	451468	NO ₂	NO	0.2	4.9	N	~2.75
A50	Outside Fox pub - Holgate Rd	Roadside	458732	451393	NO ₂	YES	16.1	0.3	N	~2.75
A51	Thrall entrance	Urban Background	458827	451348	NO ₂	YES	18	2.2	N	~2.75

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
A52	Holgate Road (corner of Hamilton Dr East)	Roadside	458945	451254	NO ₂	YES	10.9	2	N	~2.75
A53	Holgate Road	Roadside	459066	451239	NO ₂	YES	7.9	2.7	N	~2.75
A55	Holgate Road	Roadside	459351	451221	NO ₂	YES	5.5	0.2	N	~2.75
A56	Holgate Road	Urban Background	459470	451268	NO ₂	YES	0.2	10.2	N	~2.75
A57	Hairdressers Holgate Road	Roadside	459533	451280	NO ₂	YES	0.2	2.8	N	~2.75
A6	Clifton Bingo Hall	Roadside	459536	452811	NO ₂	YES	6.2	3	N	~2.75
A60	Shipton Road	Urban Background	458906	453276	NO ₂	NO	0.2	21.5	N	~2.75
A62	42 Shipton Road	Urban Background	458806	453483	NO ₂	NO	0.2	15.7	N	~2.75
A64	Lamppost outside Charlie Browns	Roadside	460030	452327	NO ₂	YES	2.4	0.6	N	~2.75
A66	70 Shipton Road	Urban Background	458672	453685	NO ₂	NO	0.2	18.4	N	~2.75
A69	6 South Cottages	Urban Background	458375	453958	NO ₂	NO	0.2	10	N	~2.75
A7	51 Clifton	Roadside	459441	452892	NO ₂	YES	3.3	2.1	N	~2.75
A70	120 Shipton Road	Urban Background	458299	454070	NO ₂	NO	0.2	13	N	~2.75
A71	154 Shipton road	Urban Background	458121	454254	NO ₂	NO	0.2	9.6	N	~2.75
A74	176 Shipton Road	Urban Background	458041	454371	NO ₂	NO	0.2	7.1	N	~2.75
A77	Lampost outside 206 Shipton Road	Urban Background	457929	454537	NO ₂	NO	6.1	1.7	N	~2.75
A81	Lampost outside 276	Urban	457733	454805	NO ₂	NO	0.2	8.4	N	~2.75

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
	Shipton Rd	Background								
A85	Drainpipe front of Greenside guest house	Urban Background	459364	453009	NO ₂	NO	0.2	11.5	N	~2.75
A88	111 Boroughbridge Road, Drainpipe nearest Garage at side of the door	Urban Background	457470	452550	NO ₂	NO	0.2	12.9	N	~2.75
A9	Lime Tree House	Roadside	459295	453067	NO ₂	YES	12.6	1.7	N	~2.75
A90	Lampost 25 Shipton Rd	Roadside	459238	453157	NO ₂	YES	8.2	1.9	N	~2.75
A94	5 Salisbury Road	Roadside	458651	452426	NO ₂	NO	0.2	13.7	N	~2.75
A96	Ousecliffe Gardens signpost, outside 31 Water End	Roadside	459038	452850	NO ₂	NO	10	0.6	N	~2.75
A97	Lampost next to Air Quality Monitoring Station on Plantation Drive	Roadside	457431	452616	NO ₂	NO	18.7	2.2	N	~2.75
B1	Lampost 1 Lowther Street opposite Riverside House Flats	Roadside	460848	452582	NO ₂	YES	0.2	1.3	N	~2.75
B15	Lampost 99 Huntington Road	Roadside	461294	455305	NO ₂	NO	28	1.6	N	~2.75
B19	Lampost 5 outside Huntington Primary School	Roadside	461891	455876	NO ₂	NO	17.2	1.6	N	~2.75
B2	Lampost 7 Huntington Road opposite Park Grove	Roadside	460924	452697	NO ₂	YES	2.5	1.3	N	~2.75
B29	Eastern Terrace	Roadside	461453	452750	NO ₂	NO	0.3	1	N	~2.75

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
B3	Lampost 11 Huntington Road outside no 70	Roadside	460952	452826	NO ₂	NO	2.9	1.4	N	~2.75
B36	Lampost 60 Malton Road - triplicate	Urban Background	462565	454194	NO ₂	NO	16.9	0.6	N	~2.75
B37	Lampost 60 Malton Road - triplicate	Urban Background	462565	454194	NO ₂	NO	16.9	0.6	N	~2.75
B37a	Lampost 60 Malton Road - triplicate	Urban Background	462565	454194	NO ₂	NO	16.9	0.6	N	~2.75
B38	482 Malton Road	Urban Background	463757	455155	NO ₂	NO	0.2	11.7	N	~2.75
B41	76 Lawrence Street	Urban Background	461326	451330	NO ₂	YES	0.2	6.5	N	~2.75
B42	83 Lawrence Street	Urban Background	461430	451348	NO ₂	YES	0.2	7.2	N	~2.75
B43	117 Lawrence Street	Urban Background	461557	451343	NO ₂	YES	0.2	7.9	N	~2.75
B44	Outside nursing home, Lawrence Street	Roadside	461643	451343	NO ₂	YES	8.6	1.9	N	~2.75
B45	Pedestrian crossing Traffic Light Melrosegate Crossroads	Roadside	461849	451284	NO ₂	YES	17.3	0.5	N	~2.75
B47	47 Hull Road	Urban Background	462019	451289	NO ₂	NO	0.2	12.2	N	~2.75
B48	61 Hull Road	Urban Background	462122	451289	NO ₂	NO	0.2	12.8	N	~2.75
B50	134 Hull Road	Roadside	462291	451269	NO ₂	NO	0.2	3.7	N	~2.75
B51	117 Hull Road	Urban Background	462384	451298	NO ₂	NO	0.2	13.2	N	~2.75
B56	Lampost 40 Hull Road	Roadside	462888	451289	NO ₂	NO	14.4	2.3	N	~2.75
B58	231 Hull Road	Urban	462970	451300	NO ₂	NO	0.2	14	N	~2.75

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
		Background								
B60	Lampost 1 Nursery Gardens	Urban Background	463234	451339	NO ₂	NO	10.7	1.3	N	~2.75
B63	Lampost 54 Tang Hall Lane	Roadside	462704	451300	NO ₂	NO	13.2	0.9	N	~2.75
B72	Front of York Cycleworks	Roadside	461122	451374	NO ₂	YES	10	2.9	N	~2.75
B74	Heworth Court Hotel sign outside Sutherland House on side of house on drainpipe.	Urban Background	461371	452708	NO ₂	NO	5.2	17.8	N	~2.75
B80	On drainpipe on front of Heworth Surgery.	Urban Background	461185	452663	NO ₂	NO	24.5	13.4	N	~2.75
B82	Lampost Dalguise Grove	Urban Background	460974	452563	NO ₂	NO	3.1	1.1	N	~2.75
B83	Lampost 24 Outside No.55 Heworth Green	Roadside	461285	452695	NO ₂	NO	11.3	1	N	~2.75
B84	Drainpipe to the left of the front door on 167 Hull Road	Urban Background	462654	451293	NO ₂	NO	0.2	13.4	N	~2.75
B85	Lampost 7 Outside St Lawrences Working Mens Club	Roadside	461227	451368	NO ₂	YES	18.8	5.6	N	~2.75
B86	Lampost 16 Heworth Green, next to Air Quality Station	Roadside	461116	452602	NO ₂	NO	5	0.7	N	~2.75
B88	Telegraph Pole 381 Hull Road	Roadside	462799	451291	NO ₂	NO	10	6.8	N	~2.75
B89	Outside old DC Cook site on signpost	Roadside	461170	451357	NO ₂	YES	2	2.8	N	~2.75

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
B90	11 Lawrence Street	Roadside	461133	451394	NO ₂	YES	0.1	4.4	N	~2.75
C12	Lampost 1 Ainsty Grove	Urban Background	458825	449928	NO ₂	NO	10.8	0.3	N	~2.75
C17	248 Tadcaster Rd	Urban Background	459085	450544	NO ₂	NO	0.2	20.6	N	~2.75
C18	196 Mount Vale	Urban Background	459204	450772	NO ₂	YES	0.2	9.2	N	~2.75
C19	Trentholme Dr	Urban Background	459271	450819	NO ₂	YES	7.7	0.4	N	~2.75
C2	Lampost 66 Tesco roundabout	Roadside	458333	448974	NO ₂	NO	16.9	1.1	N	~2.75
C20	Elmbank hotel	Urban Background	459280	450923	NO ₂	YES	21.4	0.5	N	~2.75
C21	Dalton Terrace	Roadside	459410	451040	NO ₂	YES	3.8	3.5	N	~2.75
C22	Park Street	Urban Background	459570	451195	NO ₂	YES	14.4	1.1	N	~2.75
C23	The Mount	Roadside	459553	451252	NO ₂	YES	0.2	3	N	~2.75
C26	Outside Odean	Roadside	459639	451334	NO ₂	YES	12.9	0.8	N	~2.75
C27	Windmill Pub	Roadside	459717	451433	NO ₂	YES	0.2	3.2	N	~2.75
C28	House top of Selby Rd	Urban Background	461201	448386	NO ₂	NO	0.2	15.3	N	~2.75
C29	Lampost 34 Selby Road	Roadside	461196	448426	NO ₂	NO	21.7	0.5	N	~2.75
C30	Lampost 2 Selby Rd	Roadside	461185	448462	NO ₂	NO	13.1	1.2	N	~2.75
C31	2 Selby Rd	Urban Background	461193	448473	NO ₂	NO	0.2	14.1	N	~2.75
C32	Fordlands Rd	Urban Background	461128	448823	NO ₂	NO	5.4	6.8	N	~2.75

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
C33	124 Main St	Urban Background	461085	448933	NO ₂	NO	1	11.2	N	~2.75
C34	103 Main St	Roadside	461085	449067	NO ₂	NO	0.2	3.5	N	~2.75
C36	50 Main St	Roadside	461052	449146	NO ₂	NO	0.2	3.7	N	~2.75
C37	59 Main St	Urban Background	461045	449223	NO ₂	NO	0.2	6.7	N	~2.75
C38	lampost 8 Main St	Roadside	461038	449225	NO ₂	NO	6	0.4	N	~2.75
C39	18 Main St	Roadside	460974	449336	NO ₂	NO	0.2	2.4	N	~2.75
C4	147 Tadcaster Rd	Urban Background	458470	449126	NO ₂	NO	0.2	14.3	N	~2.75
C40	Adams House B&B	Urban Background	460910	449628	NO ₂	NO	0.2	8.7	N	~2.75
C42	300 Fulford Rd	Urban Background	460857	449748	NO ₂	NO	0.2	10	N	~2.75
C43	Lampost 39 Fulford Rd - triplicate	Roadside	460869	449730	NO ₂	NO	8.7	0.3	N	~2.75
C43a	Lampost 39 Fulford Rd - triplicate	Roadside	460869	449730	NO ₂	NO	8.7	0.3	N	~2.75
C44	Lampost 39 Fulford Rd - triplicate	Roadside	460869	449730	NO ₂	NO	8.7	0.3	N	~2.75
C49	Alma terrace	Urban Background	460860	450530	NO ₂	YES	6	0.9	N	~2.75
C51	Conservative Club	Roadside	460871	450727	NO ₂	YES	9.8	1	N	~2.75
C52	Howard St	Roadside	460853	450781	NO ₂	YES	9.9	1.4	N	~2.75
C53	Winterscale St	Roadside	460766	450924	NO ₂	YES	14.7	2.1	N	~2.75
C54	Escrick St	Roadside	460762	451069	NO ₂	YES	1.7	3.2	N	~2.75
C56	Pedestrian crossing on	Roadside	459484	451141	NO ₂	YES	25.1	1.3	N	~2.75

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
	junction of Scarcroft Road/The Mount									
C57	Lampost 1 Nelson's Lane	Urban Background	458912	450111	NO ₂	NO	5.9	1.3	N	~2.75
C58	Drainpipe of 4 Main Street Fulford	Roadside	460926	449429	NO ₂	NO	0.2	3.6	N	~2.75
C59	Drainpipe of 34 Tadcaster Road	Roadside	458735	449713	NO ₂	NO	0.2	3.6	N	~2.75
C62	East Mount Road	Roadside	459579	451251	NO ₂	YES	0.1	1	N	~2.75
C63	1 St Edwards Close	Roadside	458790	449740	NO ₂	NO	0.1	15.6	N	~2.75
C7	Slingsby Grove	Roadside	458611	449477	NO ₂	NO	1.4	2.6	N	~2.75
D10	Daisy Taylors Card Shop, Kings Square	Urban Background	460443	451927	NO ₂	NO	0.2	0.9	N	~2.75
D12	On signpost outside 26 Fossgate	Roadside	460567	451740	NO ₂	YES	0.2	1.6	N	~2.75
D13	Lampost 4 Skeldergate, opposite City Mills	Roadside	460271	451358	NO ₂	YES	1.6	1.6	N	~2.75
D14	Lampost 3 Barbican Road outside No.7	Roadside	461077	451354	NO ₂	YES	1.9	0.2	N	~2.75
D16	Lampost 1 , Paragon St	Roadside	460708	451231	NO ₂	YES	0.2	3	N	~2.75
D17	Piccadilly/ Merchantgate junction	Roadside	460575	451616	NO ₂	YES	19.3	0.3	N	~2.75
D18	Lampost 6 Clifford St opposite Peckitt Street	Roadside	460395	451502	NO ₂	YES	0.4	1.8	N	~2.75
D19	Bridge St/ Micklegate Junction	Roadside	460038	451626	NO ₂	YES	1.7	0.2	N	~2.75
D20	Low Ousegate / Clifford St junction, outside Waterstones	Roadside	460323	451685	NO ₂	YES	13	0.5	N	~2.75

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
D22	Outside Museum Gardens	Roadside	460035	452010	NO ₂	YES	7.9	2.1	N	~2.75
D24	Priory St sign Micklegate	Roadside	459805	451543	NO ₂	NO	3.4	0.5	N	~2.75
D25	Bus Stop E outside Royal York Hotel	Roadside	459693	451750	NO ₂	YES	169.3	0.4	N	~2.75
D26	Lampost 14 Piccadilly (near Travellodge)	Roadside	460671	451400	NO ₂	YES	15.5	2.1	N	~2.75
D27	Lampost 2 St Deny's Road - outside hotel	Roadside	460734	451563	NO ₂	NO	11.7	1.5	N	~2.75
D28	Lampost 4 outside The Garden of India restaurant on Fawcett Street	Roadside	460764	451185	NO ₂	YES	23.6	2.4	N	~2.75
D30	Lampost outside Barbican Centre	Roadside	460834	451252	NO ₂	YES	35.5	0.1	N	~2.75
D31	Lampost 9 Barbican road outside No.24	Roadside	461002	451229	NO ₂	YES	2	0.3	N	~2.75
D32	Lampost 3 Bishopgate Street -next to bench	Roadside	460258	451208	NO ₂	YES	22.2	1.9	N	~2.75
D33	Lampost 17 Nunnery Lane outside 81	Roadside	460075	451174	NO ₂	YES	3.9	0.2	N	~2.75
D35	Drainpipe of house 22, Prices Lane	Roadside	460134	451170	NO ₂	YES	0.2	1.6	N	~2.75
D36	Lampost 7 Bishopthorpe Road, opposite entrance to Charlton St	Roadside	460135	450884	NO ₂	YES	6.1	0.2	N	~2.75
D37	Lampost 3, Bishopthorpe Road, outside house 26	Roadside	460157	450988	NO ₂	YES	2	2	N	~2.75
D38	Lampost 2 Scarcroft Rd	Roadside	460088	450929	NO ₂	YES	2.7	1.6	N	~2.75

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
D39	Lampost 1 Bishopthorpe Road	Roadside	460185	451055	NO ₂	YES	1.5	0.5	N	~2.75
D4	Lampost 11 Lord Mayor's Walk - opposite bike shop	Roadside	460560	452300	NO ₂	YES	25.1	2.3	N	~2.75
D40	Lampost 16 Nunnery Lane	Roadside	460069	451196	NO ₂	YES	3.3	1.6	N	~2.75
D41	Drainpipe of 55 Lord Mayor's Walk	Roadside	460286	452487	NO ₂	YES	0.2	3.8	N	~2.75
D43	Rougier Street Signpost 1, has "Except for Access" sign on it.	Roadside	459920	451834	NO ₂	YES	3	0.3	N	~2.75
D45	Lampost 6 The Stonebow Opposite Windsors World of Shoes	Roadside	460673	451869	NO ₂	YES	15.6	1	N	~2.75
D47	Lampost 8 Jewbury	Roadside	460682	452187	NO ₂	YES	0.6	2.4	N	~2.75
D48	Outside De Grey House right hand side of side entrance gate post	Roadside	460103	452180	NO ₂	YES	33.6	2.3	N	~2.75
D49	Lampost 1 Fishergate	Roadside	460656	451269	NO ₂	YES	0.2	2.8	N	~2.75
D50	Drainpipe side of Cardshop Coppergate	Roadside	460371	451682	NO ₂	NO	0.2	1.9	N	~2.75
D51	Inside Taxi Rank @ York Railway Station	Roadside	459640	451722	NO ₂	NO	N	40	N	~2.75
D52	Lampost 3 Kent Street at side of car park	Roadside	460887	451140	NO ₂	NO	2	90	N	~2.75
D53	58 Nunnery Lane	Roadside	460115	451146	NO ₂	YES	0.1	3.6	N	~2.75
D54	76 Nunnery Lane	Roadside	460146	451116	NO ₂	YES	0.1	5.5	N	~2.75

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
D55	Museum Street - Opposite Thomas's Pub	Roadside	460087	452065	NO ₂	YES	1.8	2.2	N	~2.75
D6	Margaret Phillipson Court, Aldwalk	Urban Background	460570	452177	NO ₂	NO	0.2	2.6	N	~2.75
D8	Lampost 2, The Stonebow - Jorvick café	Roadside	460553	451843	NO ₂	NO	27.3	0.5	N	~2.75
D9	Lampost 8, Lord Mayor's Walk outside no 34	Roadside	460483	452357	NO ₂	YES	1.8	0.1	N	~2.75
D56	Three Tuns Pub, 12 Coppergate	Roadside	460400	451685	NO ₂	NO	0.1	1.6	N	~2.75
D57	Lampost 4, Pedestrian Crossing, Coppergate	Roadside	460416	451708	NO ₂	NO	11.9	2.4	N	~2.75
D58	Traffic lights, opposite Duttons, Coppergate	Roadside	460435	451732	NO ₂	NO	8	0.1	N	~2.75
D59	Bus Stop outside 8/9 SLP	Roadside	460087	452156	NO ₂	YES	1.8	2.7	N	~2.75
D60	No entry sign outside 'Schuh' Shoe Shop	Roadside	460294	451883	NO ₂	NO	N	1.7	N	~2.75
130	Outside 81 Low Mill Close	Roadside	463663	451054	NO ₂	NO	13.6	1.1	N	~2.75
115	Inside Bus Stop (opposite side of road from tube 114) Rougier Street	Roadside	459962	451771	NO ₂	YES	47	1.5	N	~2.75

Notes:

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

(2) N/A if not applicable.

Table A.3 – Annual Mean NO₂ Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2018 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2014	2015	2016	2017	2018
Bootham	Urban Background	Automatic	98.3	98.3	18.8	15.8	17.8	14.9	14.6 (ratified Jan – Sept 2018 only)
Fishergate	Roadside	Automatic	95.7	95.7	26.5	27.4	27.2	27.7	26.1 (ratified Jan – Sept 2018 only)
Holgate	Roadside	Automatic	95.4	95.4	32.5	30.7	29.4	24.8	24.8
Nunnery Lane	Roadside	Automatic	95.7	95.7	34.1	28.4	31.4	25.9	23.4
Gillygate	Roadside	Automatic	95.2	95.2	34.7	27.8	27.3	25.2	27.1
Lawrence Street	Roadside	Automatic	97.3	97.3	34.7	34.1	33.0	29.3	27.3
Heworth Green	Roadside	Automatic	92.0	92.0	33.6	28.0	28.3	26.5	26.2
Fulford Road	Roadside	Automatic	94.1	94.1	27.7	25.0	25.2	23.0	22.2
5	Roadside	Diffusion Tube	100	100	19.3	16.2	16.7	16.0	15.2
6	Roadside	Diffusion Tube	100	100	39.0	37.4	40.6	37.3	37.1
7	Roadside	Diffusion Tube	83	83	55.2	44.9	46.6	42.4	45.3
8	Urban Background	Diffusion Tube	100	100	20.1	16.3	17.6	15.7	15.5
9	Urban Background	Diffusion Tube	100	100	19.2	15.3	18.1	15.7	15.7
11	Urban Background	Diffusion Tube	100	100	18.6	15.8	19.3	14.7	15.6
13	Roadside	Diffusion Tube	100	100	48.3	45.5	44.9	42.5	42.6
14	Roadside	Diffusion Tube	100	100	52.2	47.1	47.5	43.6	46.6
15	Roadside	Diffusion Tube	100	100	37.7	37.4	38.1	35.9	36.0
16	Roadside	Diffusion Tube	92	92	37.4	37.5	36.2	36.0	35.6

17	Roadside	Diffusion Tube	92	92	37.1	32.2	33.5	30.9	32.2
18	Roadside	Diffusion Tube	92	92	34.4	29.9	31.7	28.9	29.4
25	Roadside	Diffusion Tube	92	92	29.3	26.1	25.2	20.9	20.0
26	Roadside	Diffusion Tube	100	100	30.0	24.1	25.7	28.3	26.0
33	Roadside	Diffusion Tube	92	92	28.3	26.9	25.8	26.0	23.7
35	Roadside	Diffusion Tube	100	100	27.5	24.9	24.7	24.4	24.3
37	Roadside	Diffusion Tube	92	92	37.5	33.2	31.9	33.3 (estimate)	31.1
44	Roadside	Diffusion Tube	92	92	30.3	25.7	24.3	22.4	22.9
45	Roadside	Diffusion Tube	92	92	35.6	31.1	32.0	29.5	31.6
47	Roadside	Diffusion Tube	92	92	28.0	27.6	28.3	28.4	26.9
50	BLANK	Diffusion Tube	100	100	Blank	Blank	Blank	Blank	Blank
60	Roadside	Diffusion Tube	100	100	27.3	21.3	21.2	22.5	19.8
78	Roadside	Diffusion Tube	100	100	32.1	29.0	29.2	28.3	30.3
79	Roadside	Diffusion Tube	100	100	35.2	29.4	29.5	28.7	29.6
80	Roadside	Diffusion Tube	100	100	33.0	28.6	30.1	28.2	29.4
83	Urban Background	Diffusion Tube	100	100	20.7	18.3	20.9	22.6	20.2
88	Urban Background	Diffusion Tube	100	100	15.7	12.8	13.2	13.1	11.9
90	Roadside	Diffusion Tube	100	100	19.4	16.0	17.6	15.6	15.7
96	Roadside	Diffusion Tube	100	100	26.8	23.3	22.8	20.9	20.5
100	Roadside	Diffusion Tube	100	100	23.1	19.5	20.5	18.7	17.7
101	Roadside	Diffusion Tube	100	100	35.8	33.8	32.7	32.2	29.1
102	Roadside	Diffusion Tube	100	100	34.5	31.9	32.1	29.8	31.5
103	Roadside	Diffusion Tube	100	100	37.6	31.1	32.7	30.9	31.8
104	Roadside	Diffusion Tube	100	100	36.9	31.0	32.9	31.7	31.2
107	Roadside	Diffusion Tube	100	100	20.7	18.9	21.0	18.1	18.8
108	Roadside	Diffusion Tube	92	92	26.3	23.5	19.2	22.2	21.6

109	Roadside	Diffusion Tube	100	100	-	46.4	45.4	43.3	45.1
110	Roadside	Diffusion Tube	75	75	51.3	46.6	46.4	45.8	43.6
111	Roadside	Diffusion Tube	100	100	31.9	25.1	26.3	25.9	25.6
112	Roadside	Diffusion Tube	100	100	27.2	23.3	22.3	22.6	22.5
114	Roadside	Diffusion Tube	75	75	41.5	39.3	41.7	39.8	38.0
116	Roadside	Diffusion Tube	100	100	31.5	28.0	28.0	27.7	26.1
125	Roadside	Diffusion Tube	92	92	17.5	15.8	14.5	14.7	14.2
126	Roadside	Diffusion Tube	100	100	19.6	16.0	16.5	16.1	16.3
127	Roadside	Diffusion Tube	100	100	24.4	23.0	24.0	22.8	19.3
128	Roadside	Diffusion Tube	100	100	22.5	18.6	19.2	18.6	19.1
129	Roadside	Diffusion Tube	100	100	21.1	17.4	16.9	17.2	15.9
2a	Roadside	Diffusion Tube	92	92	30.6	28.6	28.6	25.3	24.5
2b	Roadside	Diffusion Tube	100	100	29.9	26.5	28.4	25.5	25.5
2c	Roadside	Diffusion Tube	100	100	32.0	26.3	27.2	24.8	24.8
3a	Urban Background	Diffusion Tube	92	92	17.4	14.4	16.1	14.5	14.8
3b	Urban Background	Diffusion Tube	92	92	19.0	15.1	17.1	15.5	15.3
3c	Urban Background	Diffusion Tube	92	92	16.2	16.0	19.7	15.6	15.1
95a	Roadside	Diffusion Tube	100	100	25.9	24.4	23.1	22.6	21.5
95b	Roadside	Diffusion Tube	100	100	27.5	24.6	24.0	22.5	21.7
95c	Roadside	Diffusion Tube	100	100	24.7	25.0	24.1	23.3	21.5
9a	Urban Background	Diffusion Tube	92	92	19.8	15.5	18.7	16.2	15.0
A1	Roadside	Diffusion Tube	100	100	52.3	46.0	54.3	43.9	43.5
A11	Roadside	Diffusion Tube	100	100	37.4	33.6	30.9	30.0	31.3
A12	Roadside	Diffusion Tube	92	92	33.8	28.7	29.0	27.7	30.3
A13	Urban Background	Diffusion Tube	100	100	19.7	16.4	18.7	16.0	16.3
A14	Urban Background	Diffusion Tube	100	100	19.9	16.4	19.1	15.1	16.0
A14a	Urban Background	Diffusion Tube	100	100	20.0	15.2	18.8	16.3	17.1

A17	Roadside	Diffusion Tube	100	100	32.3	27.6	29.6	27.6	28.7
A19	Roadside	Diffusion Tube	100	100	31.6	27.7	26.8	27.7	26.4
A19a	Roadside	Diffusion Tube	100	100	30.9	28.8	27.3	28.7	26.4
A19b	Roadside	Diffusion Tube	100	100	31.9	28.6	27.9	28.5	27.3
A2	Roadside	Diffusion Tube	92	92	-	31.1	30.6	30.3	27.9
A20	Roadside	Diffusion Tube	100	100	32.5	28.7	34.6	29.1	29.3
A20a	Roadside	Diffusion Tube	100	100	35.6	28.8	30.2	27.4	30.0
A20b	Roadside	Diffusion Tube	100	100	34.3	29.3	31.5	29.5	28.8
A21	Urban Background	Diffusion Tube	100	100	22.8	18.5	20.0	19.3	17.9
A22	Urban Background	Diffusion Tube	92	92	22.4	18.1	21.7	19.1	19.0
A25	Roadside	Diffusion Tube	100	100	28.4	22.6	22.9	21.8	21.6
A29	Urban Background	Diffusion Tube	100	100	21.0	18.3	20.0	18.1	17.3
A3	Roadside	Diffusion Tube	100	100	34.4	29.2	28.2	26.7	26.7
A30	Urban Background	Diffusion Tube	92	92	22.1	17.8	20.7	18.4	17.8
A36	Urban Background	Diffusion Tube	58	58	-	15.2	22.3 (estimate)	15.8 (estimate)	15.8 (estimate)
A38	Urban Background	Diffusion Tube	100	100	19.1	15.3	18.3	14.3	15.1
A4	Urban Background	Diffusion Tube	100	100	21.0	18.2	20.5	18.2	18.3
A40	Urban Background	Diffusion Tube	100	100	22.9	17.8	22.7	18.0	19.3
A41	Roadside	Diffusion Tube	92	92	26.0	20.6	23.0	19.9	21.2
A45	Urban Background	Diffusion Tube	100	100	18.8	14.3	16.1	13.3	14.5
A50	Roadside	Diffusion Tube	100	100	-	26.2	24.6	26.1	26.4
A51	Urban Background	Diffusion Tube	100	100	23.8	19.9	22.8	20.6	19.5
A52	Roadside	Diffusion Tube	100	100	37.1	31.0	31.9	29.7	31.5
A53	Roadside	Diffusion Tube	100	100	32.2	30.8	30.6 (estimate)	28.8	29.3
A54	Roadside	Diffusion Tube	50	50	41.3	36.9	33.7	33.1	35.2 (estimate)

A55	Roadside	Diffusion Tube	100	100	36.3	31.8	29.5	29.7	29.3
A56	Urban Background	Diffusion Tube	83	83	30.2	26.3	30.0	26.4	25.8
A57	Roadside	Diffusion Tube	100	100	49.2	46.9	47.7	43.1	45.3
A6	Roadside	Diffusion Tube	83	83	28.8	25.5	24.4	24.2	23.9
A60	Urban Background	Diffusion Tube	100	100	16.7	13.4	14.9	13.2	13.5
A62	Urban Background	Diffusion Tube	100	100	15.3	13.6	14.7	13.8	13.0
A64	Roadside	Diffusion Tube	92	92	35.1	29.3	32.4	28.3	30.0
A66	Urban Background	Diffusion Tube	100	100	18.1	14.5	16.5	14.7	13.9
A69	Urban Background	Diffusion Tube	75	75	14.9	12.5	15.6	12.6	12.8
A7	Roadside	Diffusion Tube	83	83	29.3	27.5	30.0	26.7	23.3
A70	Urban Background	Diffusion Tube	92	92	19.7	16.4	18.5	17.0	15.8
A71	Urban Background	Diffusion Tube	100	100	16.2	12.3	16.0	13.5	12.6
A74	Urban Background	Diffusion Tube	100	100	13.8	12.6	15.8	13.4	12.6
A77	Urban Background	Diffusion Tube	92	92	21.9	16.6 (estimate)	18.8	17.5	17.5
A81	Urban Background	Diffusion Tube	100	100	17.6	15.2	16.7	14.7	14.2
A85	Urban Background	Diffusion Tube	100	100	23.0	19.3	21.2	19.2	18.6
A88	Urban Background	Diffusion Tube	100	100	21.4	15.7	18.4	15.0	15.4
A9	Roadside	Diffusion Tube	67	67	34.4	30.1	32.3	27.0	30.3 (estimate)
A90	Roadside	Diffusion Tube	100	100	40.0	36.0	34.3	35.9	33.6
A94	Roadside	Diffusion Tube	92	92	26.2	22.0	24.6	22.4	28.7
A96	Roadside	Diffusion Tube	100	100	34.4	28.4	31.7	29.4	28.1
A97	Roadside	Diffusion Tube	100	100	22.0	18.8	21.0	19.3	19.7
A98	Roadside	Diffusion Tube	100	100	-	-	-	22.8	21.8
B1	Roadside	Diffusion Tube	100	100	31.8	29.4	27.9	28.5	26.6
B15	Roadside	Diffusion Tube	83	83	22.6	19.2	28.4	18.9	18.1
B19	Roadside	Diffusion Tube	100	100	21.7	19.7	21.1	19.9	18.9

B2	Roadside	Diffusion Tube	92	92	28.7	24.4	24.9	24.2	22.8
B29	Roadside	Diffusion Tube	100	100	25.6	22.2	21.7	20.0	19.5
B3	Roadside	Diffusion Tube	100	100	25.2	21.5	22.0	21.5	21.8
B36	Urban Background	Diffusion Tube	83	83	16.0	13.0	15.9	13.6 (estimate)	13.2
B37	Urban Background	Diffusion Tube	92	92	16.0	14.6	15.9	13.0 (estimate)	13.8
B37a	Urban Background	Diffusion Tube	83	83	16.5	14.6	17.2	14.3 (estimate)	12.9
B38	Urban Background	Diffusion Tube	100	100	20.0	16.3	20.0	15.9	16.1
B41	Urban Background	Diffusion Tube	100	100	31.6	28.1	31.3	28.2	27.4
B42	Urban Background	Diffusion Tube	100	100	24.4	20.8	25.8	22.3	20.8
B43	Urban Background	Diffusion Tube	100	100	21.2	18.6	22.2	19.8	19.2
B44	Roadside	Diffusion Tube	100	100	34.0	31.3	30.3	29.4	28.1
B45	Roadside	Diffusion Tube	100	100	30.9	28.1	27.8	26.5	27.2
B47	Urban Background	Diffusion Tube	100	100	16.9	15.1	16.0	15.0	14.1
B48	Urban Background	Diffusion Tube	100	100	20.0	17.5	19.7	19.8	17.5
B50	Roadside	Diffusion Tube	100	100	27.1	24.3	22.0	22.2	21.5
B51	Urban Background	Diffusion Tube	100	100	19.5	16.5	17.6	16.2	15.6
B56	Roadside	Diffusion Tube	100	100	34.5	31.8	31.7	30.7	28.3
B58	Urban Background	Diffusion Tube	100	100	20.1	16.9	19.7	17.6	16.8
B60	Urban Background	Diffusion Tube	100	100	20.0	17.8	19.3	18.0	16.7
B63	Roadside	Diffusion Tube	92	92	34.9	29.5	29.1	29.7	27.9
B72	Roadside	Diffusion Tube	100	100	47.0	44.6	42.7	42.8	41.8
B74	Urban Background	Diffusion Tube	92	92	22.6	18.9	20.4	17.1	17.8
B80	Urban Background	Diffusion Tube	100	100	19.0	15.2	16.7	15.1	15.0
B82	Urban Background	Diffusion Tube	100	100	22.4	19.4	22.2	21.7	21.5
B83	Roadside	Diffusion Tube	92	92	32.0	27.6	25.3	25.2	25.3

B84	Urban Background	Diffusion Tube	100	100	23.2	20.2	22.2	21.6	19.8
B85	Roadside	Diffusion Tube	92	92	32.5	29.1	31.9	28.4	28.1
B86	Roadside	Diffusion Tube	100	100	26.9	22.9	23.5	23.2	22.5
B88	Roadside	Diffusion Tube	100	100	33.2	28.8	27.8	28.5	25.9
B89	Roadside	Diffusion Tube	100	100	36.6	35.0	34.7	36.8	33.7
B90	Roadside	Diffusion Tube	100	100	38.3	35.5	34.0	34.1	36.8
C12	Urban Background	Diffusion Tube	100	100	19.8	15.9	18.3	15.2	15.9
C17	Urban Background	Diffusion Tube	100	100	20.0	15.5	18.7	16.1	15.2
C18	Urban Background	Diffusion Tube	100	100	25.2	22.3	25.1	22.5	21.8
C19	Urban Background	Diffusion Tube	100	100	18.7	17.0 (estimate)	19.2	15.6	15.9
C2	Roadside	Diffusion Tube	92	92	35.3	32.0	31.5	31.5	29.0
C20	Urban Background	Diffusion Tube	100	100	20.3	16.9	19.8	16.8	17.2
C21	Roadside	Diffusion Tube	100	100	28.3	26.9	26.7	25.8	23.5
C22	Urban Background	Diffusion Tube	100	100	22.9	19.4	24.6	19.6	19.6
C23	Roadside	Diffusion Tube	100	100	42.9	39.9	39.9	37.0	36.2
C26	Roadside	Diffusion Tube	100	100	42.1	40.4	41.2	38.1	41.0
C27	Roadside	Diffusion Tube	100	100	52.0	46.7	45.8	45.9	46.3
C28	Urban Background	Diffusion Tube	100	100	17.5	14.2	16.6	14.3	14.4
C29	Roadside	Diffusion Tube	92	92	33.5	28.8	30.0	28.1	26.5
C30	Roadside	Diffusion Tube	100	100	35.2	29.3	30.8	29.0	31.1
C31	Urban Background	Diffusion Tube	100	100	20.5	17.9	18.8	17.8	16.3
C32	Urban Background	Diffusion Tube	100	100	25.4	22.8	24.5	21.6	20.9
C33	Urban Background	Diffusion Tube	100	100	19.8	14.4	17.3	15.2	14.9
C34	Roadside	Diffusion Tube	100	100	28.6	23.7	25.2	22.3	22.8
C36	Roadside	Diffusion Tube	100	100	30.8	29.7	28.5	27.3	25.0
C37	Urban Background	Diffusion Tube	92	92	23.6	20.3	23.4	18.7	20.6

C38	Roadside	Diffusion Tube	92	92	30.8	28.2	28.1	25.6	24.8
C39	Roadside	Diffusion Tube	100	100	35.3	35.1	32.6	34.9	32.7
C4	Urban Background	Diffusion Tube	100	100	19.4	16.4	19.0	15.9	16.3
C40	Urban Background	Diffusion Tube	100	100	20.8	18.0	19.0	17.6	17.1
C42	Urban Background	Diffusion Tube	100	100	23.6	20.7	22.8	20.0	19.1
C43	Roadside	Diffusion Tube	100	100	32.3	28.7	28.8	28.2	26.7
C43a	Roadside	Diffusion Tube	100	100	32.3	28.8	30.4	28.3	26.5
C44	Roadside	Diffusion Tube	100	100	28.7	26.8	29.0	28.5	26.8
C49	Urban Background	Diffusion Tube	100	100	22.9	18.6	21.6	17.6	17.7
C51	Roadside	Diffusion Tube	100	100	31.7	25.2	26.2	24.4	25.0
C52	Roadside	Diffusion Tube	100	100	28.3	23.1	24.1	23.8	23.0
C53	Roadside	Diffusion Tube	100	100	25.0	22.2	22.8	22.1 (estimate)	20.8
C54	Roadside	Diffusion Tube	100	100	-	25.5	28.4	22.8	25.7
C56	Roadside	Diffusion Tube	92	92	34.6	32.1	31.4	28.3	30.8
C57	Urban Background	Diffusion Tube	83	83	25.7	18.1	22.6	18.8	19.1
C58	Roadside	Diffusion Tube	100	100	39.5	36.8	35.5	35.2	32.5
C59	Roadside	Diffusion Tube	92	92	33.8	29.9	29.6	28.3	27.5
C62	Roadside	Diffusion Tube	100	100	30.7	28.4	26.9	27.2	27.0
C63	Roadside	Diffusion Tube	100	100	20.6	19.2	18.8	17.8	16.9
C7	Roadside	Diffusion Tube	100	100	30.8	23.8	19.8	18.0	17.5
D10	Urban Background	Diffusion Tube	100	100	21.5	16.9	18.4	16.5	16.5
D12	Roadside	Diffusion Tube	100	100	25.7	22.0	20.4	19.8	18.5
D13	Roadside	Diffusion Tube	100	100	27.8	24.5	27.6	24.9	25.3
D14	Roadside	Diffusion Tube	100	100	46.1	39.0	36.2	32.7	37.6
D16	Roadside	Diffusion Tube	100	100	45.2	37.7	37.5	36.2	36.1
D17	Roadside	Diffusion Tube	83	83	34.0	31.8	29.2	26.7	27.9

D18	Roadside	Diffusion Tube	100	100	30.8	26.3	28.7	27.7	29.1
D19	Roadside	Diffusion Tube	100	100	54.7	48.0	49.9	44.1	45.5
D20	Roadside	Diffusion Tube	100	100	43.9	40.3	39.7	40.6	39.7
D22	Roadside	Diffusion Tube	100	100	39.9	33.0	34.4	31.8	32.5
D24	Roadside	Diffusion Tube	100	100	-	30.3	30.6	28.2	28.9
D25	Roadside	Diffusion Tube	100	100	41.0	35.1	37.6	36.7	36.5
D26	Roadside	Diffusion Tube	67	67	29.2	25.3	26.6	24.9	23.9 (estimate)
D27	Roadside	Diffusion Tube	100	100	26.2	25.9	25.8	23.3	23.6
D28	Roadside	Diffusion Tube	100	100	37.3	34.1	33.3	31.4	31.9
D30	Roadside	Diffusion Tube	100	100	28.8	25.0	24.6	24.7	23.7
D31	Roadside	Diffusion Tube	100	100	39.9	31.8	32.6	29.2	29.5
D32	Roadside	Diffusion Tube	100	100	37.1	34.1	35.1	31.7	33.7
D33	Roadside	Diffusion Tube	100	100	31.3	25.4 (estimate)	30.0	27.5	26.6
D35	Roadside	Diffusion Tube	100	100	42.0	37.3	36.9	36.3	35.2
D36	Roadside	Diffusion Tube	75	75	37.5	34.9	35.3	31.7	33.2
D37	Roadside	Diffusion Tube	100	100	33.2	26.7	30.9	27.0	27.1
D38	Roadside	Diffusion Tube	100	100	26.5	22.5	22.0	21.8	20.9
D39	Roadside	Diffusion Tube	100	100	34.0	29.0	31.4	29.2	30.2
D4	Roadside	Diffusion Tube	83	83	31.7	27.2	25.7	25.3	24.4
D40	Roadside	Diffusion Tube	100	100	31.5	28.1	29.2	25.8	25.6
D41	Roadside	Diffusion Tube	100	100	41.1	37.6	32.9	33.4	34.5
D43	Roadside	Diffusion Tube	83	83	47.9	40.4	42.4	41.0	44.4
D45	Roadside	Diffusion Tube	100	100	32.2	26.1	28.3	27.9	26.3
D47	Roadside	Diffusion Tube	100	100	33.4	27.2	27.7	25.9	24.8
D48	Roadside	Diffusion Tube	92	92	41.2	33.3	36.1	32.9	34.7
D49	Roadside	Diffusion Tube	92	92	43.3	39.1	36.8	38.0	34.3

D50	Roadside	Diffusion Tube	100	100	44.3	41.9	40.3	37.7	37.9
D51	Roadside	Diffusion Tube	100	100	65.3	57.1	56.5	58.6	57.7
D52	Roadside	Diffusion Tube	100	100	27.6	24.1	25.8	23.6	23.4
D53	Roadside	Diffusion Tube	92	92	32.1	27.2 (estimate)	28.7	24.4	25.1
D54	Roadside	Diffusion Tube	100	100	30.6	25.1	27.3	23.8	24.8
D55	Roadside	Diffusion Tube	100	100	39.8	42.6	48.8	35.1	37.4
D6	Urban Background	Diffusion Tube	92	92	22.6	18.0	20.5	17.9	15.8
D8	Roadside	Diffusion Tube	100	100	41.4	36.3	36.9	31.5	34.1
D9	Roadside	Diffusion Tube	100	100	36.6	31.7	34.1	31.7	32.6
D56	Roadside	Diffusion Tube	92	92	-	51.7 (estimate)	47.4	42.1	42.3
D57	Roadside	Diffusion Tube	83	83	-	37.1 (estimate)	35.7 (estimate)	30.3 (estimate)	33.8
D58	Roadside	Diffusion Tube	100	100	-	44.0 (estimate)	38.9	38.7	36.8
D59	Roadside	Diffusion Tube	100	100	-	50.7 (estimate)	44.7	41.2	39.2
D60	Roadside	Diffusion Tube	100	100	-	22.2 (estimate)	21.7	22.3	20.5
130	Roadside	Diffusion Tube	33	33	-	14.3 (estimate)	14.7	13.9	13.5 (estimate)
115	Roadside	Diffusion Tube	58	58	48.4	42.6	-	-	59.7 (estimate)

Diffusion tube data has been bias corrected

Annualisation has been conducted where data capture is <75% (i.e. 8 months or less data)

If applicable, 2018 data has been distance corrected for relevant exposure

Notes:

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

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

- (1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.
- (2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).
- (3) Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per Boxes 7.9 and 7.10 in LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Figure A.1 – Trends in Annual Mean NO₂ Concentrations

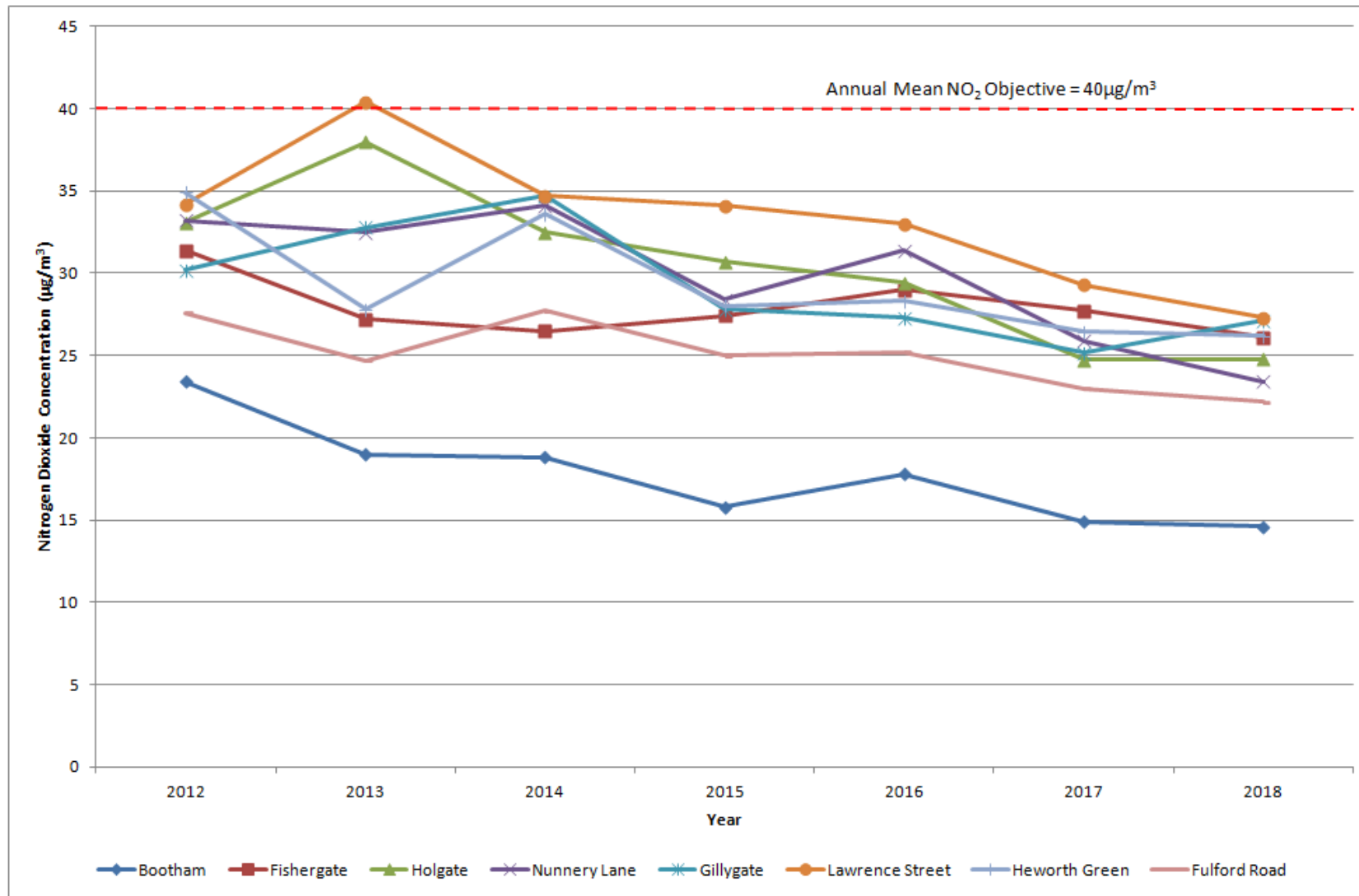


Table A.4 – 1-Hour Mean NO₂ Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2018 (%) ⁽²⁾	NO ₂ 1-Hour Means > 200µg/m ³ ⁽³⁾				
					2014	2015	2016	2017	2018
Bootham	Urban Background	Automatic	98.3	98.3	0	0	0	0	0
Fishergate	Roadside	Automatic	95.7	95.7	0	0	0	0	0
Holgate	Roadside	Automatic	95.4	95.4	0	0	0	0	0
Nunnery Lane	Roadside	Automatic	95.7	95.7	0	0	0	0	0
Gillygate	Roadside	Automatic	95.2	95.2	0	0	0	0	0
Lawrence Street	Roadside	Automatic	97.3	97.3	0	2	0	0	1
Heworth Green	Roadside	Automatic	92.0	92.0	0 (59.5)	0	0	0	0
Fulford Road	Roadside	Automatic	94.1	94.1	0	0	0	0	0

Notes:

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

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

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

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

Table A.5 – Annual Mean PM₁₀ Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2018 (%) ⁽²⁾	PM ₁₀ Annual Mean Concentration (µg/m ³) ⁽³⁾				
				2014	2015	2016	2017	2018
Bootham (TEOM-FDMS)	Background	96.1	96.1	15.0	15.3	14.9	13.4	13.8 (verified Jan – Sept 2018 only)
Fishergate (TEOM-FDMS)	Roadside	92.0	92.0	18.4	17.8	16.3	16.3	19.1 (verified Jan – Sept 2018 only)
Holgate Road (TEOM-FDMS)	Roadside	68.5	68.5	18.3	20.9 (<i>low data capture</i>)	12.0	10.5	12.4 (non-annualised result is 12.9)
Plantation Drive (TEOM)	Roadside	98.6	98.6	17.2	-	15.5	15.6	14.3

Annualisation has been conducted where data capture is <75%

Notes:

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

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

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

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

Figure A.2 – Trends in Annual Mean PM₁₀ Concentrations

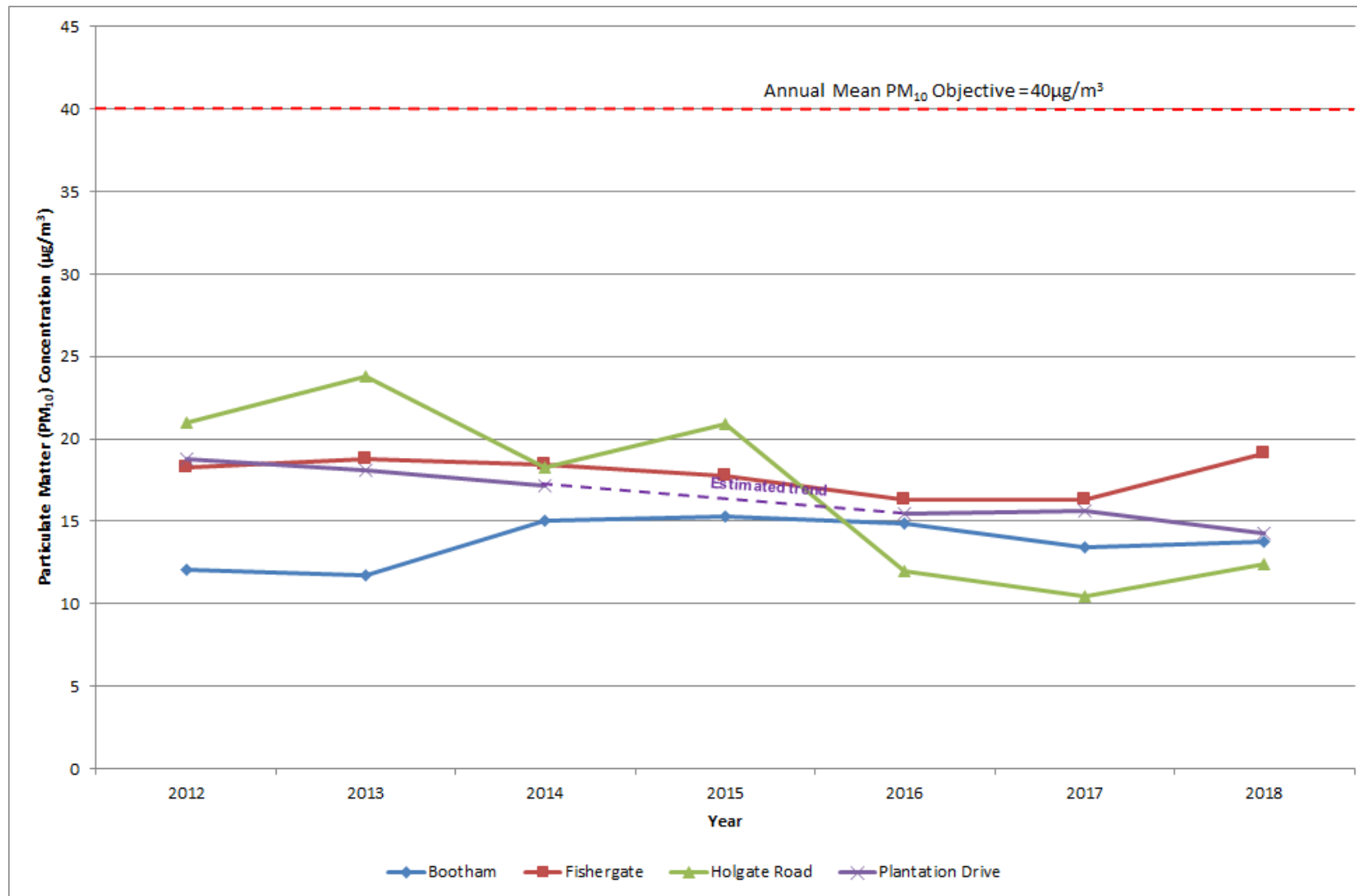


Table A.6 – 24-Hour Mean PM₁₀ Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2018 (%) ⁽²⁾	PM ₁₀ 24-Hour Means > 50µg/m ³ ⁽³⁾				
				2014	2015	2016	2017	2018
Bootham (TEOM-FDMS)	Background	96.1	96.1	4	6	2	5	3
Fishergate (TEOM-FDMS)	Roadside	92.0	92.0	7	8	2	6 (28.8)	4
Holgate Road (TEOM-FDMS)	Roadside	68.5	68.5	8 (32.1)	7 (41.1)	2	4	1 (22.8)
Plantation Drive (TEOM)	Roadside	98.6	98.6	7	N/A	2	4	0

Notes:

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

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

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

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

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

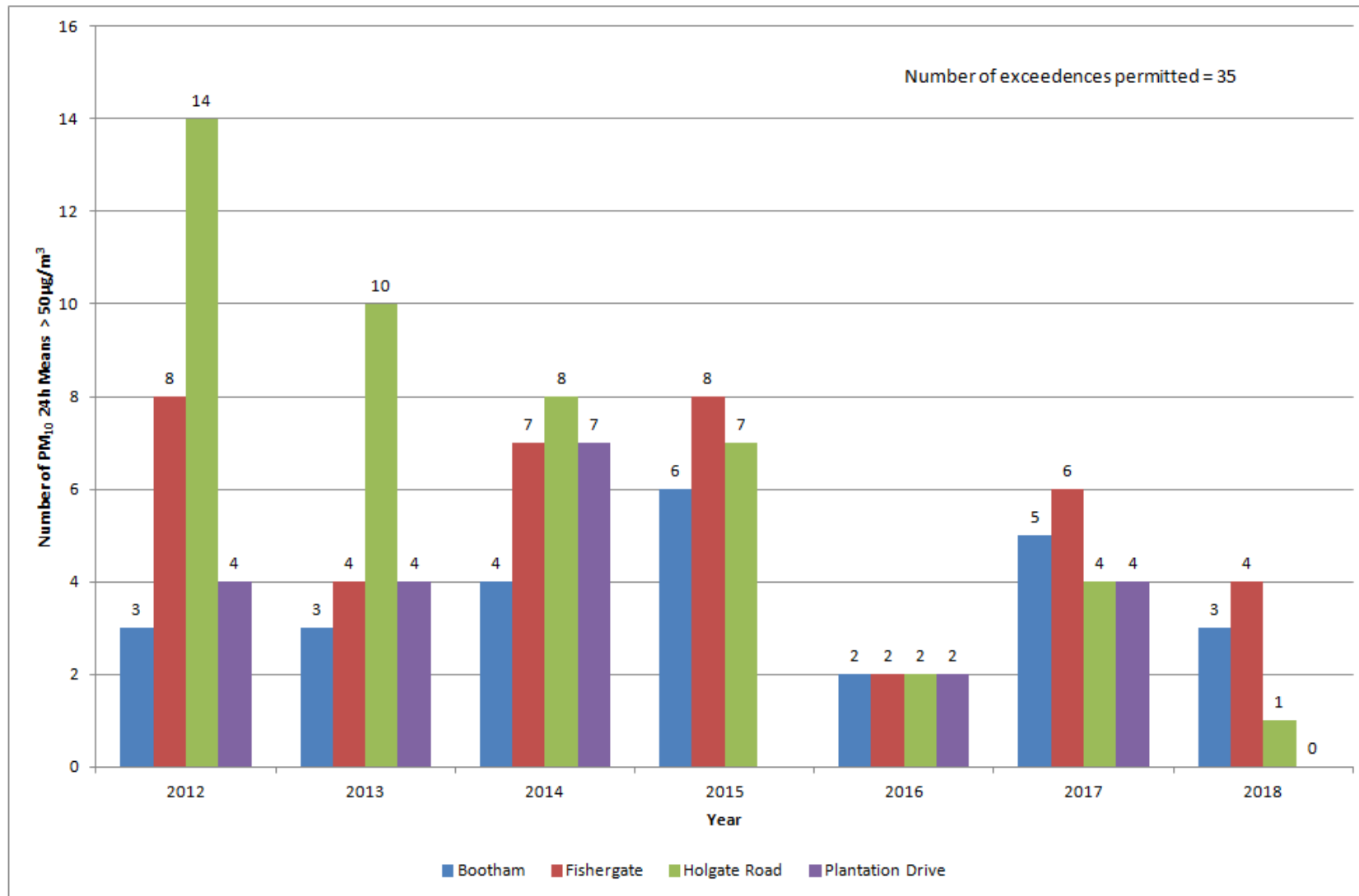


Table A.7 – PM_{2.5} Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2018 (%) ⁽²⁾	PM _{2.5} Annual Mean Concentration (µg/m ³) ⁽³⁾				
				2014	2015	2016	2017	2018
Bootham (TEOM-FDMS)	Urban Background	95.5	95.5	12.4	10.2	9.8	8.7	10.8 <i>(verified Jan – Sept 2018 only)</i>
Fishergate (TEOM-FDMS)	Roadside	93.3	93.3	13.6	12.0	12.0	11.4	10.5 <i>(verified Jan – Sept 2018 only)</i>
Gillygate (TEOM)	Roadside	95.8	95.8	9.7	9.1	9.0	8.4	8.3

Annualisation has been conducted where data capture is <75%

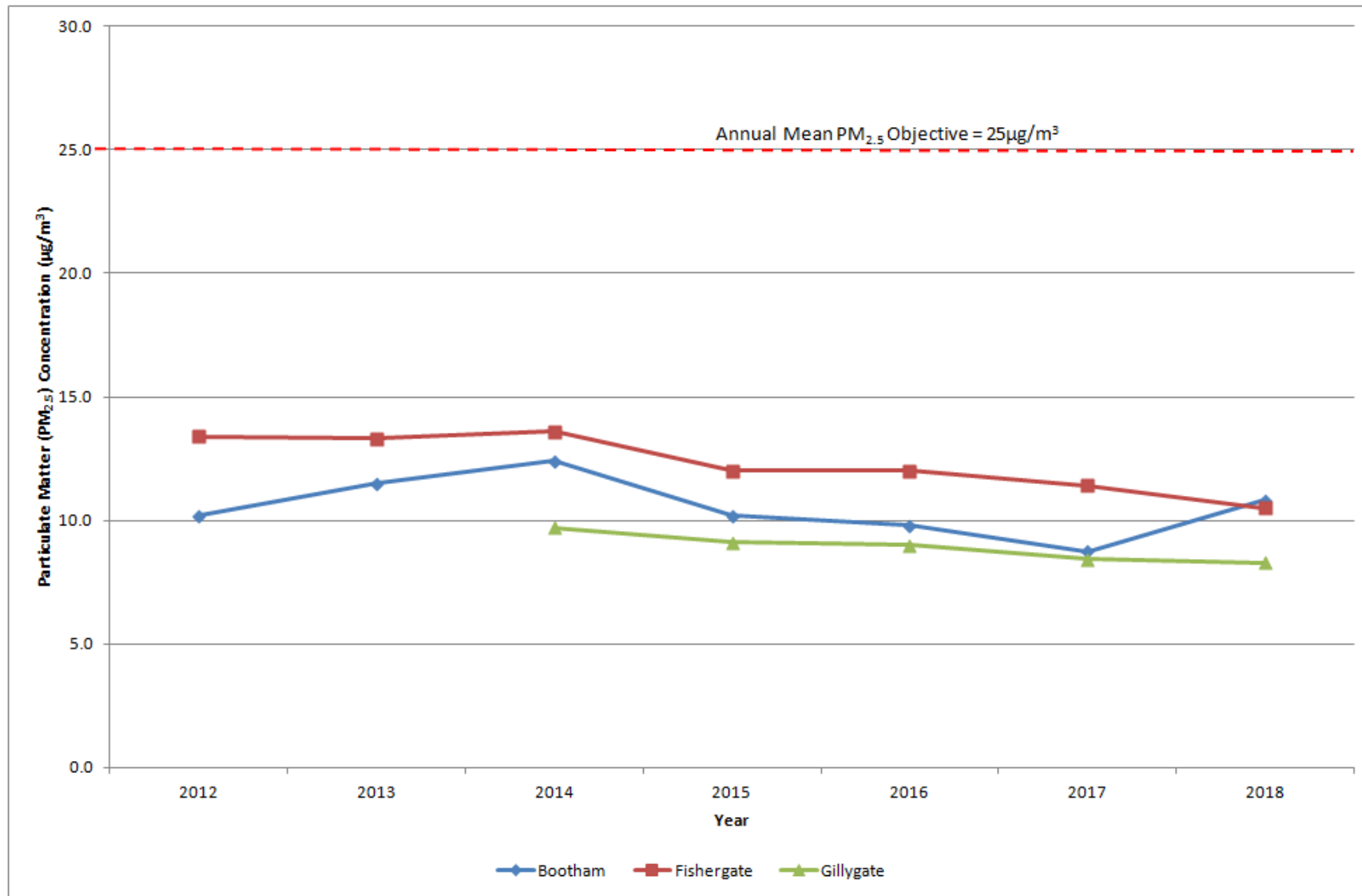
Notes:

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

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

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

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



Appendix B: Full Monthly Diffusion Tube Results for

Table B.1 – NO₂ Monthly Diffusion Tube Results – 2018

Site ID	NO ₂ Mean Concentrations (µg/m ³)												Annual Mean		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (R=0.727, B=0.677) and Annualised ⁽¹⁾	Distance Corrected to Nearest Exposure ⁽²⁾
5	27.0	22.6	23.2	17.2	13.8	13.0	14.3	15.6	20.5	21.5	30.2	32.4	20.9	15.2	15.2
6	47.0	53.4	50.2	52.8	51.7	43.9	50.0	48.1	47.8	58.8	48.0	60.3	51.0	37.1	37.1
7	59.6	61.1	66.0	70.4	62.8	61.2	62.3	54.2		59.6		65.5	62.3	45.3	34.5 (distance corrected)
8	30.9	22.0	28.0	20.6	16.0	14.1	14.7	18.7	23.7	24.3	33.9	28.4	22.9	15.5	15.5
9	32.3	27.8	24.5	23.5	15.2	15.2	15.1	17.7	21.4	24.5	31.2	29.8	23.2	15.7	15.7
11	28.5	26.7	28.6	23.3	16.7	12.4	18.1	17.5	20.4	16.1	35.9	33.0	23.1	15.6	15.6
13	59.4	58.4	58.5	56.6	59.6	54.7	62.3	59.4	56.5	59.6	62.7	55.8	58.6	42.6	42.6
14	60.9	67.4	64.9	68.3	61.2	60.5	65.5	55.0	57.6	57.5	85.4	64.5	64.1	46.6	46.6
15	52.6	54.2	52.5	51.0	45.9	41.2	48.5	37.9	41.4	46.0	65.3	57.9	49.5	36.0	36.0
16	52.6	50.6	48.7		45.6	38.8	43.7	44.3	48.4	53.9	53.6	59.1	49.0	35.6	35.6
17	50.2	43.9	45.4	44.4	39.0	31.4	41.1		44.1	48.2	51.8	48.1	44.3	32.2	32.2
18	44.5	39.6	36.2	39.4	36.1	32.1	35.5	39.3		39.5	50.4	52.1	40.4	29.4	29.4
25		30.6	23.4	24.4	18.5	15.7	17.6	26.2	28.2	30.0	41.5	46.8	27.5	20.0	20.0
26	41.7	41.2	36.5	41.6	11.7	27.6	35.2	34.5	33.5	37.4	44.6	43.3	35.7	26.0	26.0

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33	40.0		34.6	32.7	24.6	19.6	24.3	26.1	31.9	34.1	44.4	45.8	32.6	23.7	23.7
35	44.6	39.2	34.0	34.1	23.5	21.4	22.8	29.6	33.6	32.5	40.2	45.4	33.4	24.3	24.3
37		44.5	47.5	43.9	43.0	40.6	39.7	37.5	37.9	38.4	49.9	47.3	42.7	31.1	31.1
44	39.8	24.1	35.1	27.5		20.0	25.4	29.0	31.3	33.1	37.4	44.4	31.6	22.9	22.9
45	49.2	45.3	43.3	41.9		33.3	40.6	42.2	38.9	43.2	49.7	50.7	43.5	31.6	31.6
47	43.7	36.2	37.4	36.2		25.7	30.9	35.4	38.1	34.1	42.6	46.4	37.0	26.9	26.9
60	33.0	31.4	30.3	27.0	21.2	20.5	19.4	20.2	22.4	30.4	35.0	36.1	27.2	19.8	19.8
78	44.1	44.7	40.9	44.5	44.0	35.6	38.0	33.9	37.2	36.0	53.7	47.8	41.7	30.3	30.3
79	45.0	41.0	40.5	44.3	39.9	35.6	33.2	31.7	36.5	40.7	53.5	46.6	40.7	29.6	29.6
80	45.4	36.5	32.4	42.9	43.1	35.2	37.9	34.0	38.3	40.5	52.4	45.9	40.4	29.4	29.4
83	42.2	41.0	39.4	33.2	22.1	19.1	23.6	24.7	27.4	27.0	26.5	31.5	29.8	20.2	20.2
88	27.1	21.2	16.5	14.3	9.5	8.8	10.4	14.6	18.6	16.2	24.8	29.4	17.6	11.9	11.9
90	26.4	23.5	21.5	23.6	17.5	17.3	17.2	19.2	18.8	20.7	28.2	25.8	21.6	15.7	15.7
96	36.3	31.0	29.5	26.7	20.0	18.5	22.9	22.0	28.7	28.5	35.0	39.3	28.2	20.5	20.5
100	29.9	28.7	24.4	25.2	19.2	17.4	19.3	21.0	22.2	21.5	32.8	31.1	24.4	17.7	17.7
101	49.5	42.0	35.5	38.4	34.1	28.3	38.8	44.3	44.4	42.6	39.0	43.9	40.1	29.1	29.1
102	49.3	45.1	42.0	46.8	43.8	35.6	39.3	33.7	34.7	41.4	51.4	56.2	43.3	31.5	31.5
103	50.9	49.0	42.5	48.2	46.2	37.2	42.7	33.4	32.7	39.1	48.9	54.7	43.8	31.8	31.8
104	49.8	44.0	45.6	49.8	40.1	33.2	43.3	34.1	36.0	38.1	47.1	53.7	42.9	31.2	31.2
107	35.6	28.1	27.1	27.5	19.6	15.4	19.1	19.2	22.7	22.9	34.2	38.2	25.8	18.8	18.8
108	38.4	33.4	29.9	29.2	22.7	19.7	22.1	26.4	29.3		33.7	42.1	29.7	21.6	21.6
109	66.5	59.8	65.5	59.6	62.9	54.2	63.1	60.0	57.4	63.3	71.3	60.2	62.0	45.1	45.1
110	72.2				60.7	46.4	53.5	53.7	59.3	63.3	64.5	66.5	60.0	43.6	43.6
111	41.5	23.8	45.1	36.2	36.5	29.1	28.9	31.4	32.8	37.5	38.7	40.6	35.2	25.6	25.6
112	37.8	23.1	36.4	30.4	22.7	22.0	26.8	30.1	30.2	32.8	39.7	38.9	30.9	22.5	22.5
114	54.3				54.9	47.7	51.4	51.7	48.1	56.2	47.5	58.6	52.3	38.0	38.0
115						59.0	70.6	85.3	81.7	81.9	79.8	98.1	79.5	59.7	59.7

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														(annualised)	(annualised)
116	45.0	40.4	35.0	38.0	29.8	26.3	33.8	34.8	33.1	33.0	37.2	45.1	36.0	26.1	26.1
125	26.5	23.3	18.1	16.9	10.1	10.1		15.6	18.5	19.4	27.1	29.4	19.5	14.2	14.2
126	32.2	24.6	26.3	22.2	17.0	12.2	14.5	15.6	18.2	25.4	31.2	30.0	22.5	16.3	16.3
127	36.7	30.4	26.6	24.8	18.5	16.4	19.7	24.8	29.5	22.2	32.7	36.6	26.6	19.3	19.3
128	31.2	32.0	29.8	25.4	18.6	17.1	20.6	20.1	22.2	23.5	36.8	38.0	26.3	19.1	19.1
129	28.3	21.0	21.9	21.9	16.3	14.2	17.6	21.6	22.5	18.3	29.0	30.5	21.9	15.9	15.9
130	26.8	17.8							15.6			27.6	22.0	13.5 (annualised)	13.5 (annualised)
2a	34.3	37.4	35.9	34.0	32.2	27.1	29.5	29.2	30.7		38.4	42.0	33.7	24.5	24.5
2b	39.5	39.7	37.5	35.8	31.6	31.1	31.2	27.7	30.7	35.9	39.2	41.6	35.1	25.5	25.5
2c	33.9	42.5	35.6	35.1	30.9	30.0	28.3	27.8	32.1	35.9	40.6	36.6	34.1	24.8	24.8
3a	30.3	25.2		23.4	14.0	11.0	12.5	18.3	23.5	22.7	30.6	29.0	21.9	14.8	14.8
3b	31.1	29.0		19.1	13.7	11.3	13.1	19.4	22.3	21.4	34.7	33.0	22.6	15.3	15.3
3c	33.6	23.7		21.5	13.0	11.3	12.4	19.0	22.0	21.6	34.5	32.6	22.3	15.1	15.1
95a	36.3	26.9	27.7	27.1	26.4	22.4	23.8	26.0	30.4	36.1	34.3	37.4	29.6	21.5	21.5
95b	31.0	30.0	29.2	26.7	27.0	23.0	23.3	28.0	33.7	34.2	32.3	40.1	29.9	21.7	21.7
95c	33.9	33.0	30.1	25.7	26.6	23.7	25.4	26.6	32.0	25.7	34.4	37.9	29.6	21.5	21.5
9a	26.5		24.3	22.6	15.5	14.1	15.5	18.3	19.8	23.2	33.0	31.8	22.2	15.0	15.0
A1	66.3	59.7	55.0	62.0	62.7	58.0	62.5	56.3	60.4	64.4	60.2	50.6	59.8	43.5	43.5
A11	50.9	41.3	41.6	41.2	36.5	38.9	39.9	38.5	43.2	42.3	51.2	50.3	43.0	31.3	31.3
A12	55.9	41.1	47.6	39.0	36.8		34.3	32.5	37.7	35.9	47.5	49.4	41.6	30.3	30.3
A13	29.8	31.7	26.1	22.4	17.9	15.4	15.0	17.7	21.7	22.2	35.3	34.5	24.1	16.3	16.3
A14	33.8	24.2	27.0	22.6	17.4	14.1	14.8	16.9	20.3	21.7	36.6	35.0	23.7	16.0	16.0
A14a	34.9	34.2	26.9	23.0	16.7	15.5	15.1	16.3	20.9	24.6	37.3	37.3	25.2	17.1	17.1
A17	52.8	47.8	34.6	38.9	34.2	29.4	32.1	33.3	34.3	31.8	51.7	52.0	39.4	28.7	28.7
A19	38.1	43.6	36.6	39.3	31.1	25.6	31.6	33.2	31.8	31.2	44.8	49.5	36.4	26.4	26.4

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A19a	41.1	40.4	39.2	35.3	31.6	24.0	31.0	31.5	34.4	33.2	42.9	50.9	36.3	26.4	26.4
A19b	49.4	37.9	39.9	41.6	29.2	25.2	31.9	31.3	36.4	35.1	42.5	50.8	37.6	27.3	27.3
A2	44.6	32.7	37.6	38.3	27.5	28.5	37.7		36.0	43.7	46.9	48.0	38.3	27.9	27.9
A20	39.0	44.3	45.7	43.2	40.3	31.2	38.3	34.1	31.5	38.2	46.0	52.1	40.3	29.3	29.3
A20a	46.0	46.6	39.0	44.0	40.8	32.7	34.9	32.9	35.2	40.0	49.6	54.1	41.3	30.0	30.0
A20b	44.3	37.4	44.2	44.5	37.7	33.2	38.8	33.4	34.8	41.4	37.4	48.9	39.7	28.8	28.8
A21	35.4	26.4	25.8	25.4	18.0	16.0	18.7	22.9	27.3	26.2	34.8	39.7	26.4	17.9	17.9
A22	35.2	34.6	25.9	27.5		15.9	19.6	23.6	25.7	26.1	37.5	37.0	28.1	19.0	19.0
A25	34.9	30.5	33.5	31.6	26.9	21.9	25.3	22.3	23.7	29.4	36.9	39.8	29.7	21.6	21.6
A29	32.3	24.7	25.9	25.8	19.5	16.8	18.3	22.8	25.3	21.6	35.4	38.9	25.6	17.3	17.3
A3	44.7	38.7	34.6	32.7	32.8	27.6	34.4	32.3	32.3	32.6	49.5	48.8	36.8	26.7	26.7
A30	34.1	29.0	26.9	23.6		21.4	22.1	13.9	22.2	25.5	34.0	36.8	26.3	17.8	17.8
A36						16.4	17.9	16.7	19.7	20.6	33.9	32.8	22.6	15.8 (annualised)	15.8 (annualised)
A38	28.3	31.1	24.1	20.0	17.6	15.7	15.4	16.3	15.4	20.7	31.0	32.3	22.3	15.1	15.1
A4	34.8	32.1	26.6	25.3	17.7	17.4	18.5	25.6	29.1	27.5	33.8	36.1	27.0	18.3	18.3
A40	31.5	34.6	35.3	30.3	25.2	24.0	24.6	20.7	21.2	23.3	36.9	33.9	28.5	19.3	19.3
A41	29.5	33.9	34.3	29.4	26.8	24.8		22.5	22.7	25.8	32.5	39.1	29.2	21.2	21.2
A45	26.5	23.4	24.9	21.7	15.3	14.5	14.1	14.6	17.9	20.0	31.7	33.2	21.5	14.5	14.5
A50	43.0	37.0	41.5	38.2	31.6	23.0	34.3	30.3	32.2	34.3	43.3	47.6	36.4	26.4	26.4
A51	31.4	31.0	32.3	28.8	18.6	17.1	24.0	27.6	28.4	29.2	38.0	39.3	28.8	19.5	19.5
A52	54.0	47.2	52.9	42.3	34.8	34.7	33.0	33.0	30.6	46.5	55.5	54.9	43.3	31.5	31.5
A53	50.8	38.8	37.4	39.4	33.2	30.6	34.4	35.7	42.4	40.0	50.6	50.2	40.3	29.3	29.3
A54				47.3			42.4	44.3	45.5	46.0	51.8		46.2	35.2 (annualised)	35.2 (annualised)
A55	50.0	37.1	41.5	40.8	33.8	28.2	38.3	37.7	36.0	41.1	47.3	51.9	40.3	29.3	29.3
A56	40.3	39.6	41.6	38.5	33.8	31.6	33.6	33.0			42.7	47.0	38.2	25.8	25.8
A57	63.4	69.5	68.8	55.9	65.1	56.9	62.3	59.8	54.5	54.5	72.2	65.3	62.4	45.3	45.3

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A6	38.5	31.5	29.8	31.3	21.0			30.3	36.6	29.0	39.6	41.7	32.9	23.9	23.9
A60	24.0	23.3	23.3	19.8	16.7	14.2	15.2	12.2	16.6	19.4	27.6	26.8	19.9	13.5	13.5
A62	26.1	26.2	16.0	19.6	12.7	10.7	12.8	15.9	16.0	18.8	24.9	31.0	19.2	13.0	13.0
A64	46.7	43.8	47.3		42.2	39.6	37.4	32.7	33.5	37.1	48.4	45.6	41.3	30.0	30.0
A66	24.1	19.5	22.3	17.9	14.3	13.1	16.4	19.1	20.7	21.7	25.6	32.3	20.6	13.9	13.9
A69	22.8	22.9	24.3			13.4	14.2	13.7	14.2	16.3		27.8	18.8	12.8	12.8
A7	45.0	41.7	32.6	31.7	20.1	23.7	25.9	26.5	37.6	35.5			32.0	23.3	23.3
A70	30.4	26.6	22.9	25.8	18.1	14.5	18.9	20.3	21.8	23.4		33.7	23.3	15.8	15.8
A71	24.2	24.2	19.9	17.7	11.8	9.3	12.2	14.1	15.7	17.5	27.3	29.5	18.6	12.6	12.6
A74	25.4	22.6	19.7	17.8	11.7	9.8	12.4	16.0	15.7	17.5	25.7	28.6	18.6	12.6	12.6
A77	37.0	33.6	24.4	24.4		15.0	16.2	20.5	21.3	24.0	34.3	33.8	25.9	17.5	17.5
A81	28.3	24.9	21.3	20.2	14.0	10.5	15.8	18.2	19.6	21.2	26.0	32.1	21.0	14.2	14.2
A85	30.1	29.9	28.3	28.1	20.2	17.0	22.7	27.8	30.5	28.3	33.4	33.4	27.5	18.6	18.6
A88	29.6	28.7	25.2	20.8	16.2	14.8	17.2	17.3	19.8	22.8	28.8	31.9	22.8	15.4	15.4
A9	47.1	45.8	45.7	42.6	35.8		36.4	33.6				52.7	42.5	30.3 (annualised)	30.3 (annualised)
A90	60.7	53.2	43.6	45.1	38.8	27.8	42.0	39.4	46.7	44.7	55.2	57.7	46.2	33.6	33.6
A94	51.3	53.4	61.2	42.0	22.0	15.4		17.2	20.5	34.4	56.9	60.1	39.5	28.7	28.7
A96	51.0	41.4	42.8	24.6	31.1	28.9	34.7	34.6	36.4	38.3	49.5	50.9	38.7	28.1	28.1
A97	37.9	34.1	27.2	28.1	18.2	16.1	17.8	20.7	24.9	22.6	37.1	41.2	27.2	19.7	19.7
A98	31.1	35.3	33.3	30.7	24.7	22.0	24.5	26.0	29.5	29.1	32.8	40.8	30.0	21.8	21.8
B1	51.1	33.8	31.4	38.2	29.7	26.1	29.5	34.2	37.3	37.6	48.8	40.6	36.5	26.6	26.6
B15	31.2	25.1	23.4	19.8	17.9	15.6			24.7	25.2	31.0	34.4	24.8	18.1	18.1
B19	29.3	29.4	29.7	26.1	19.4	16.1	20.2	22.1	24.2	26.9	30.6	38.7	26.1	18.9	18.9
B2	40.0		33.9	29.8	23.9	20.4	23.4	25.6	30.7	30.2	44.0	43.2	31.4	22.8	22.8
B29	35.2	31.0	24.4	27.4	20.0	19.8	20.6	23.6	26.7	24.3	35.8	33.5	26.9	19.5	19.5
B3	39.1	35.3	31.9	27.2	22.2	18.5	20.0	23.9	28.7	31.7	42.0	39.9	30.0	21.8	21.8

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B36	26.1	22.8		16.9	14.9	12.1	13.8	16.2		20.9	24.7	26.7	19.5	13.2	13.2
B37	29.7	21.4	21.6	19.8	13.0	14.6	14.5	16.5		20.9	23.1	30.0	20.5	13.8	13.8
B37a	24.6	22.3	19.3	18.7		13.1	12.6	16.9	18.9	19.8	24.4		19.1	12.9	12.9
B38	29.7	28.4	30.1	25.9	16.8	14.8	16.7	18.3	18.3	22.4	30.3	34.1	23.8	16.1	16.1
B41	49.7	43.9	43.1	43.3	35.5	33.0	36.5	36.7	39.4	33.7	44.0	47.6	40.5	27.4	27.4
B42	35.8	31.8	34.7	31.9	29.8	27.0	27.5	25.0	25.0	32.1	34.0	35.0	30.8	20.8	20.8
B43	35.3	27.7	32.8	28.9	24.9	25.4	24.7	21.8	25.3	27.2	32.8	33.7	28.4	19.2	19.2
B44	53.4	35.2	37.9	40.7	33.8	30.8	34.3	34.3	39.0	35.7	44.5	44.7	38.7	28.1	28.1
B45	47.8	41.9	38.1	33.3	37.1	31.7	33.9	31.3	29.8	38.8	40.7	44.9	37.4	27.2	27.2
B47	30.5	22.0	22.9	18.5	12.9	12.2	14.9	17.4	21.0	19.5	27.9	29.5	20.8	14.1	14.1
B48	35.8	28.2	29.1	26.7	20.3	16.5	18.7	20.2	23.4	26.7	30.9	33.1	25.8	17.5	17.5
B50	37.3	29.1	32.2	31.9	27.2	20.9	26.0	23.4	26.8	27.9	38.8	33.0	29.5	21.5	21.5
B51	32.9	25.5	27.2	20.9	17.9	12.2	17.0	19.2	22.9	22.8	24.0	33.8	23.0	15.6	15.6
B56	48.6	40.2	44.8	36.0	31.1	28.4	34.5	32.2	32.1	42.4	46.4	49.9	38.9	28.3	28.3
B58	30.6	27.3	26.0	24.0	18.0	17.4	19.1	21.6	27.1	26.0	27.9	33.3	24.9	16.8	16.8
B60	36.0	26.5	24.7	23.7	15.1	12.8	17.9	20.6	23.8	25.2	33.0	37.1	24.7	16.7	16.7
B63	43.5	35.6	37.6	37.0		29.2	32.1	35.7	39.9	40.0	46.4	44.6	38.3	27.9	27.9
B72	66.4	61.6	60.6	59.9	47.9	42.7	54.1	57.9	56.9	55.0	61.0	66.4	57.5	41.8	41.8
B74	33.1	31.9	28.2	21.0	18.5	16.5		21.0	23.6	28.2	30.7	36.2	26.3	17.8	17.8
B80	30.0	24.7	23.4	21.0	15.2	12.3	14.5	17.6	21.7	20.4	32.1	32.2	22.1	15.0	15.0
B82	36.4	35.9	30.2	33.0	21.1	21.4	27.3	30.1	34.6	32.4	40.1	39.0	31.8	21.5	21.5
B83	43.0	40.6	28.9	37.6		25.3	28.3	27.3	33.9	34.0	40.3	44.2	34.9	25.3	25.3
B84	34.1	31.2	27.8	27.4	23.1	19.3	24.3	27.1	31.7	32.0	36.1	36.2	29.2	19.8	19.8
B85	45.2	30.8		41.3	38.4	34.5	37.0	34.3	35.8	40.5	45.3	41.7	38.6	28.1	28.1
B86	42.0	33.0	33.8	26.9	22.5	22.2	22.9	24.3	33.2	31.5	36.9	41.6	30.9	22.5	22.5
B88	42.8	43.7	43.5	34.4	27.3	22.9	27.2	31.3	35.8	40.3	38.1	40.0	35.6	25.9	25.9
B89	56.8	49.5	43.1	47.4	40.6	37.3	44.8	44.5	48.3	48.0	45.5	51.1	46.4	33.7	33.7

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B90	65.8	65.1	49.3	57.7	48.2	40.4	39.1	38.2	42.3	52.7	46.1	62.7	50.6	36.8	36.8
C12	31.7	30.1	25.7	23.0	17.7	14.3	15.8	17.6	16.7	22.5	34.2	32.7	23.5	15.9	15.9
C17	27.2	27.5	25.5	23.9	16.9	14.8	16.6	16.9	19.3	21.9	29.4	29.8	22.5	15.2	15.2
C18	37.8	36.0	32.4	32.3	26.8	19.8	26.5	27.0	36.3	33.5	35.1	43.3	32.2	21.8	21.8
C19	30.2	27.5	24.0	23.6	17.2	15.8	16.8	21.1	24.3	24.0	27.7	30.2	23.5	15.9	15.9
C2		31.6	42.1	41.1	35.4	34.0	36.9	36.6	43.1	39.9	51.8	45.9	39.9	29.0	29.0
C20	31.5	26.8	28.1	25.6	20.0	18.2	20.2	21.8	22.3	25.2	32.4	32.6	25.4	17.2	17.2
C21	42.0	32.1	30.1	36.2	3.9	27.9	29.2	33.5	36.6	36.9	39.5	40.5	32.4	23.5	23.5
C22	36.1	33.3	31.8	24.7	25.4	22.6	21.5	24.3	27.0	30.0	34.2	36.0	28.9	19.6	19.6
C23	55.8	44.1	47.4	38.0	52.5	44.1	49.9	48.9	51.8	52.4	54.6	57.4	49.7	36.2	36.2
C26	61.7	62.8	54.1	57.2	56.6	49.2	52.3	49.4	52.3	57.0	60.9	62.9	56.4	41.0	41.0
C27	71.9	63.8	60.2	69.7	61.6	54.6	68.0	56.3	60.0	60.6	66.2	71.8	63.7	46.3	46.3
C28	27.5	20.9	22.7	20.9	16.3	13.3	16.3	17.1	19.2	22.8	28.7	29.7	21.3	14.4	14.4
C29	47.3		35.8	37.8	29.5	22.3	28.1	28.6	31.4	37.5	51.7	51.2	36.5	26.5	26.5
C30	45.6	47.3	44.8	44.6	38.4	33.1	41.0	33.5	38.2	44.4	49.9	53.1	42.8	31.1	31.1
C31	30.6	26.9	26.3	21.7	17.7	15.6	19.4	22.2	22.6	23.8	27.8	33.9	24.0	16.3	16.3
C32	40.8	38.5	30.5	31.2	23.0	20.2	24.1	28.2	28.4	33.0	34.9	38.1	30.9	20.9	20.9
C33	26.9	24.9	25.0	24.1	18.0	14.5	15.1	14.8	16.8	28.0	26.7	30.1	22.1	14.9	14.9
C34	36.3	39.4	35.1	32.8	28.5	25.7	28.3	22.6	25.6	20.9	41.1	39.8	31.3	22.8	22.8
C36	40.0	28.8	35.3	36.3	29.2	27.0	32.4	33.9	33.7	37.4	34.7	43.9	34.4	25.0	25.0
C37	34.8	33.6	35.8	30.7	27.5	22.3	24.9	22.3	26.5		36.6	39.7	30.4	20.6	20.6
C38	43.2		39.1	36.3	30.3	26.3	29.9	24.1	28.1	31.3	40.6	46.7	34.2	24.8	24.8
C39	51.0	47.2	40.2	45.2	42.8	33.4	39.1	39.5	46.2	45.2	52.7	57.3	45.0	32.7	32.7
C4	32.3	29.2	26.6	24.2	17.0	14.8	16.6	19.2	24.6	20.6	31.1	32.8	24.1	16.3	16.3
C40	30.1	29.7	24.7	24.1	20.3	17.7	19.5	23.9	24.1	26.4	30.2	32.5	25.3	17.1	17.1
C42	34.9	32.7	28.1	24.5	21.9	18.6	23.7	26.9	31.8	30.2	29.2	36.3	28.2	19.1	19.1
C43	45.4	40.2	31.2	35.4	31.3	28.4	30.9	35.9	36.9	39.4	38.6	47.4	36.8	26.7	26.7

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C43a	41.7	39.3	34.8	36.9	31.3	29.3	30.8	32.4	38.5	35.9	39.2	47.5	36.5	26.5	26.5
C44	45.1	42.0	31.6	35.4	32.0	28.5	32.2	29.4	37.7	39.9	37.2	51.8	36.9	26.8	26.8
C49	30.9	27.9	27.0	27.4	20.5	18.9	18.2	19.6	23.6	25.2	38.2	36.0	26.1	17.7	17.7
C51	40.9	41.7	36.4	33.5	27.5	25.9	27.0	25.5	30.7	35.3	45.4	43.2	34.4	25.0	25.0
C52	36.0	37.6	32.8	30.9	25.5	16.0	21.1	24.3	29.8	31.3	45.1	49.3	31.6	23.0	23.0
C53	37.2	35.6	29.4	28.6	22.8	19.4	19.9	21.8	26.3	29.7	32.3	40.2	28.6	20.8	20.8
C54	39.1	44.1	35.6	35.0	30.0	27.8	33.2	29.4	33.1	38.2	34.6	44.2	35.4	25.7	25.7
C56	50.9	48.2	40.9	44.2	36.5		36.4	36.6	36.9	40.4	47.5	47.0	42.3	30.8	30.8
C57	37.8	36.1	31.4	27.7	22.3	20.0	22.4	21.4	23.2		40.4		28.3	19.1	19.1
C58	53.7	50.0	40.0	42.0	37.2	34.1	40.3	43.7	47.2	48.8	48.7	51.0	44.7	32.5	32.5
C59	47.5	39.8		36.5	33.2	27.7	33.5	34.2	39.5	36.5	41.5	46.8	37.9	27.5	27.5
C62	43.9	41.2	38.4	50.4	32.2	26.1	29.3	31.6	33.6	37.4	37.5	43.4	37.1	27.0	27.0
C63	26.7	27.6	19.2	23.1	21.5	16.9	17.0	19.1	24.2	25.0	26.9	31.7	23.2	16.9	16.9
C7	23.3	26.3	28.4	25.4	19.0	17.5	19.7	19.0	21.2	23.5	35.1	31.1	24.1	17.5	17.5
D10	31.6	27.8	25.8	21.4	15.3	13.7	19.7	20.8	22.4	25.9	33.3	35.0	24.4	16.5	16.5
D12	25.8	31.9	29.0	25.8	20.4	16.7	20.7	24.8	22.5	22.0	34.2	31.6	25.5	18.5	18.5
D13	39.3	34.6	38.5	33.7	27.5	24.4	30.6	32.4	33.8	39.2	42.1	41.9	34.8	25.3	25.3
D14	58.8	50.2	53.2	55.9	49.7	47.3	49.2	44.8	41.4	54.9	61.7	53.5	51.7	37.6	37.6
D16	40.4	59.1	47.9	56.0	62.0	49.2	48.4	43.5	34.9	51.0	63.0	40.9	49.7	36.1	36.1
D17	42.4	41.0	40.7	31.6	30.5	32.8	33.5		38.5		46.8	45.4	38.3	27.9	27.9
D18	46.4	42.8	41.6	35.9	35.1	29.4	35.9	36.5	35.3	44.6	46.3	50.8	40.1	29.1	29.1
D19	59.6	39.8	72.0	64.1	64.8	65.2	68.7	57.5	62.3	64.7	69.9	62.3	62.6	45.5	34.9 (distance corrected)
D20	57.2	54.1	53.9	58.7	45.4	48.1	56.9	51.6	57.9	55.4	70.3	45.3	54.6	39.7	25.1 (distance corrected)
D22	47.6	45.3	46.0	46.9	39.2	47.2	45.4	44.4	35.5	39.2	50.4	48.5	44.6	32.5	32.5

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D24	49.0	41.8	42.6	36.8	32.4	27.8	36.4	38.3	40.6	42.4	42.2	46.9	39.8	28.9	28.9
D25	57.9	46.4	50.0	47.0	48.2	42.9	46.6	50.1	49.6	53.6	49.6	60.1	50.2	36.5	36.5
D26	41.4	28.0	40.3				26.7		31.1	39.8	46.1	36.0	36.2	23.9 (annualised)	23.9 (annualised)
D27	36.3	33.5	31.5	32.1	29.1	25.3	27.2	25.3	30.7	35.9	45.3	38.0	32.5	23.6	23.6
D28	52.0	41.7	44.6	41.5	40.8	35.5	42.8	43.4	46.3	45.7	43.2	48.3	43.8	31.9	31.9
D30	38.1	36.7	23.2	34.8	26.5	26.0	27.8	28.1	28.8	34.7	43.6	42.1	32.5	23.7	23.7
D31	46.0	43.9	45.4	41.2	40.8	35.8	33.3	29.4	31.6	39.7	53.7	46.7	40.6	29.5	29.5
D32	56.2	42.6	44.8	41.1	43.6	40.8	43.3	42.5	47.5	51.9	49.0	52.2	46.3	33.7	33.7
D33	45.7	29.9	35.4	36.4	33.0	27.7	32.2	29.6	35.8	39.3	45.5	48.4	36.6	26.6	26.6
D35	51.2	49.6	49.7	45.9	49.2	37.3	49.6	46.1	45.1	50.6	55.2	51.8	48.4	35.2	35.2
D36	51.9	48.0	35.9				43.1	40.6	39.5	49.8	50.8	51.4	45.7	33.2	33.2
D37	45.2	38.6	39.2	43.7	37.1	30.2	30.6	27.0	25.9	38.9	56.9	33.7	37.3	27.1	27.1
D38	32.1	24.4	32.2	29.5	22.7	21.7	22.3	23.9	22.9	31.1	41.1	40.8	28.7	20.9	20.9
D39	47.5	44.2	45.7	45.2	35.7	31.4	36.4	34.7	33.4	43.7	53.0	47.8	41.6	30.2	30.2
D4	41.3	36.0	34.6		23.8	20.6	26.7	27.2		35.1	44.6	45.7	33.6	24.4	24.4
D40	36.8	31.9	45.5	35.1	31.4	29.1	24.5	25.7	28.7	38.0	49.8	46.6	35.3	25.6	25.6
D41	50.1	48.2	44.7	44.9	42.7	40.1	51.6	46.4	49.0	47.1	52.6	51.9	47.4	34.5	34.5
D43	61.6		63.4	67.6	56.2	55.1	61.1	50.8		58.8	70.8	65.7	61.1	44.4	32.8 (distance corrected)
D45	46.0	41.9	41.6	36.1	33.1	24.0	29.6	28.8	34.1	37.1	38.4	43.3	36.2	26.3	26.3
D47	33.1	34.7	39.6	33.6	30.3	27.4	31.0	28.4	31.2	36.3	46.5	36.9	34.1	24.8	24.8
D48	44.9	42.8	47.6	54.4	47.5	43.8		44.1	40.6	46.1	59.7	52.9	47.7	34.7	34.7
D49	38.8	48.9	50.3	52.7	44.9	40.7	46.4	40.4	44.7	50.8	60.1		47.2	34.3	34.3
D50	54.9	49.0	52.6	58.1	57.8	47.6	48.9	49.9	48.1	52.0	50.9	56.0	52.2	37.9	37.9
D51	82.7	80.3	70.7	85.4	85.3	71.3	88.4	82.4	77.0	81.7	71.3	75.4	79.3	57.7	57.7
D52	36.1	37.4	33.6	32.3	27.9	25.8	25.4	25.9	28.2	31.7	41.6	40.9	32.2	23.4	23.4

City of York Council

D53	36.4	37.1	38.2	37.9	36.6	30.8	30.3		24.9	34.3	35.2	38.6	34.6	25.1	25.1
D54	35.5	38.9	37.6	38.4	38.1	29.0	25.1	26.8	26.1	35.4	39.6	38.3	34.1	24.8	24.8
D55	53.2	52.1	51.0	55.3	60.9	38.5	52.6	51.6	47.8	46.1	56.3	51.4	51.4	37.4	37.4
D56	63.4	51.6	63.1	64.4	56.5	49.5		54.7	57.2	55.4	61.2	63.2	58.2	42.3	42.3
D57	47.5	44.1	50.6	50.4			44.4	40.4	45.7	42.9	47.8	50.7	46.5	33.8	33.8
D58	54.4	42.1	51.4	54.0	47.1	44.9	54.9	50.1	54.0	51.4	52.5	50.4	50.6	36.8	36.8
D59	63.3	45.5	52.2	56.3	49.1	52.0	55.7	51.5	54.1	54.1	54.2	59.6	54.0	39.2	39.2
D6	29.6	18.1	28.5	24.3	17.6	15.6	17.8	20.2	24.1	26.1	34.6		23.3	15.8	15.8
D60	36.8	30.7	28.4	26.3	19.8	17.2	22.0	25.6	28.6	28.9	36.0	38.5	28.2	20.5	20.5
D8	51.3	43.7	52.6	53.0	49.5	45.7	43.8	39.2	38.9	43.3	50.9	51.2	46.9	34.1	34.1
D9	43.9	45.1	45.8	46.4	45.8	39.7	47.2	40.7	38.3	41.7	52.3	50.3	44.8	32.6	32.6

Local bias adjustment factor used

Annualisation has been conducted where data capture is <75%

Notes:

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

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

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

(2) Distance corrected to nearest relevant public exposure.

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

C1: QA/QC on monitoring data

To ensure that the air quality data obtained by City of York Council fully complies with the requirements of the Review and Assessment process, a comprehensive set of QA/QC procedures are in place. The aims of the QA/QC programme were fully detailed in 'Technical Annex 2: Air Pollution Monitoring in York' which was submitted with the Second and Third Stage Review and Assessment of Air Quality in York.

All continuous sites are calibrated fortnightly by City of York Council's Public Protection Team. Sites are serviced by the equipment suppliers every 6 months and independently audited every 12 months. The annual audit also provides an independent check of site cylinder concentrations against reference standards.

City of York Council continuous monitoring sites are currently serviced and maintained by 'Matt's Monitors'. Data management is currently undertaken by Ricardo-AEA with all results being published to the Air Quality England website at: <http://www.airqualityengland.co.uk/>. The latest round of station audits were carried out in January 2019 by Ricardo-AEA.

For the purpose of this report, all TEOM particulate (PM₁₀) data collected during 2018 has been corrected using the Volatile Correction Model (VCM) as made available by DEFRA at www.volatile-correction-model.info/Default.aspx (note that PM_{2.5} is presented as uncorrected TEOM data as the VCM is not considered appropriate for correction of PM_{2.5} data). No correction factors have been applied to the TEOM-FDMS or BAM data presented in this report.

C2: Bias adjustment and precision analysis of diffusion tubes

Introduction

Diffusion tubes used by City of York Council in 2018 were supplied and analysed by SOCOTEC (Formally known as Environmental Scientifics Group (ESG)), Unit 12 Moorbrook, Southmead Industrial Park, Didcot, Oxfordshire, OX11 7HP. The preparation method used for the diffusion tubes was 50% TEA in Acetone.

AIR is an independent analytical proficiency-testing (PT) scheme, operated by LGC Standards and supported by the Health and Safety Laboratory (HSL). AIR PT is a new scheme, started in April 2014, which combines two long running PT schemes: LGC Standards STACKS PT scheme and HSL WASP PT scheme. AIR offers a number of test samples designed to test the proficiency of laboratories undertaking analysis of chemical pollutants in ambient indoor, stack and workplace air. For the 2018 period, the percentage of results submitted by SOCTEC/ESG that were deemed to be satisfactory was 100% (round AR024), 100% (round AR025), 100% (round AR027) and 100% (round AR028). Further information is available here: <https://laqm.defra.gov.uk/assets/laqmno2performancedatauptoOctober2018v1.pdf>

As part of the Second and Third Stage Review and Assessment of Air Quality in York, a detailed discussion of the accuracy and precision of diffusion tubes was included in Technical Annex 2: Air Quality Monitoring in York. This included a detailed description of how to calculate accuracy and precision factors for diffusion tubes.

For the purpose of this Annual Status Report, new accuracy and precision factors have been calculated for the nitrogen dioxide diffusion tubes for 2018. These factors are based on readings obtained in the 2018 calendar year. The method used to calculate these factors is the same as that outlined in Technical Annex 2 of the Second and Third Stage Review and Assessment of Air Quality in York and the reader should refer to that document for further information.

Calculation of Accuracy Factors

The accuracy factors are calculated from the results obtained from diffusion tubes co-located with real time chemiluminescence analysers. To calculate the bias of the diffusion tubes scatter plots of chemiluminescence data versus diffusion tube data for roadside and background monitoring sites were plotted. For each scatter plot a $y=mx$ line of best fit was applied. In each case the gradient of the line, m , was taken as the bias factor.

Background diffusion tube monitoring

The bias factor for the tubes located at the urban background monitoring site was found to be 0.6768, demonstrating that in general the diffusion tubes overestimated the nitrogen dioxide concentrations at the urban background sites. For the purpose of this report bias corrected averages for background sites have been calculated by multiplying the raw tube result by 0.6768.

Roadside diffusion tube monitoring

The bias factor for the tubes located the roadside monitoring locations was found to be 0.7271, demonstrating that in general the diffusion tubes overestimated the nitrogen dioxide concentration at the roadside. For the purpose of this report bias corrected averages for roadside and kerbside sites have been calculated by multiplying the raw tube result by 0.7271.

Comparison of locally derived bias correction factors and factors from national diffusion tube bias adjustment factor spreadsheet

The overall 2018 bias correction factor from the national diffusion tube bias adjustment factor spreadsheet for SOCOTEC Didcot [*preparation method 50% TEA in acetone*] from 21 studies was 0.76. This is the suggested figure to use for all site types in the absence of any local collocation data. It was considered that the locally derived bias correction factors of 0.6768 and 0.7271 for background and roadside sites respectively were broadly comparable to this national figure. Historically, locally derived bias correction factors have always used for the correction of City of York Council's diffusion tube data and the local figures have therefore been used for correction of tube data presented in this report.

If the national bias correction factor of 0.76 had been applied to all diffusion tubes, this would have resulted in breaches of the annual mean objective at an additional 2

sites (that did not indicate a breach in 2018 using the local bias factors). These were tubes D20 (*Low Ousegate / Clifford Street Junction*) and D59 (*Bus stop outside 8/9 St Leonards Place*). Both these tubes are already located within the City of York Council's existing AQMA boundary.

Applying the national bias factor of 0.76 would also cause tube 115 (*Inside bus stop canopy, Rougier Street*) to exceed $60\mu\text{g}/\text{m}^3$, which is indicative of potential breaches of the short-term hourly NO_2 objective. The AQMA in this area of the city has previously been declared on the basis of both the annual mean and the hourly mean NO_2 objective, but on 17th December 2018 the AQMA was amended to remove the reference to breaches of the short-term hourly objective along George Hudson Street / Rougier Street / Bridge Street based on the last few years of monitoring results for the area. As only 7 months data were available from site 115 in 2018, it is not considered that the annual mean estimate above $60\mu\text{g}/\text{m}^3$ is sufficiently robust to make any changes to the current AQMA designation. However, this site will be carefully monitored over the next 12 months.

Calculation of Precision Factors

The precision factors are calculated from the results obtained from diffusion tubes co-located side by side. A measurement of the precision of the diffusion tubes has been made by calculating the Relative Standard Deviation (RSD) of the Variance of the results obtained from each of the duplicate sites⁸ in York using Equations 1 and 2.

Equation 1: Variance = Sum $\{(X_a - X_{a+1}/X_m)^2\}$

Where: X_a = result 1 for month X
 X_{a+1} = result 2 for month X
 X_m = mean of X_a and X_{a+1}

Equation 2: RSD of Variance % = $(\text{Variance} / n)^{1/2} \times 100$

Where: n = total number of duplicate tube results

2018 data

The Relative Standard Deviation of Variance for a single month at a single site was found to be 5.06%. This is equivalent to +/- 10.12% at 95% confidence limit.

The annual mean nitrogen dioxide concentrations in most cases have been calculated by taking the mean of 12 monthly readings. The precision of the annual mean at a 95% confidence level was calculated for each site using Equation 3.

Equation 3: *Precision of annual mean* = $\frac{10.12}{(n-1)^{1/2}}$

Where n = number of readings used to calculate the annual mean at a particular site.

- In most cases n = 12, hence the precision of the majority of the annual averages is +/- 3.05%.
- For sites where only 11 tubes were retrieved the precision of the annual averages is +/- 3.20%.
- For sites where only 10 tubes were retrieved the precision of the annual averages is +/- 3.37%.
- For sites where only 9 tubes were retrieved the precision of the annual averages is +/- 3.58%.

⁸ Where diffusion tubes were exposed in triplicate (i.e. A, B, and C), the tubes have been expressed as 3 duplicate sets for the purposes of the precision calculations (i.e. AB, AC, and BC).

C3a: Annualising diffusion tube data (period to annual correction)

LAQM.TG16 states that for those nitrogen dioxide diffusion tube sites with fewer than 9 months worth of data, it is necessary to perform annualisation. Annualisation effectively scales the available monitoring data to provide an estimate of the annual mean nitrogen dioxide concentration. This can then be compared with health based Air Quality Objectives.

City of York Council undertook background diffusion tube monitoring of nitrogen dioxide at a number of background locations during 2018. Of these sites, 50 diffusion tubes had 12 months data available and have been used to derive the period to annual ratios required for the annualisation. The following steps were used:

- **Step 1** - Calculate the period mean for the diffusion tube sample requiring annualisation
- **Step 2** - Calculate the corresponding period means and annual means for each of the 50 background diffusion tube locations. Use these two figures to calculate the period mean to annual mean ratio for each of the 50 diffusion tube sites.
- **Step 3** – Calculate the average ratio across the 50 background monitoring sites (i.e. $n = 50$)
- **Step 4** – Use the ratio in Step 3 to adjust the period mean (Step 1) to provide an estimate of the annual diffusion tube mean (non-bias adjusted)
- **Step 5** – Bias correct the value calculated in step 4 using the appropriate bias correction factor.

A summary of the annualisation is provided in Table C.1 below.

Table C.1a: Annualisation Summary

Site	Location	Valid Months	Period Mean (tube) in $\mu\text{g}/\text{m}^3$	Average Ratio	Annual Tube Mean Estimate in $\mu\text{g}/\text{m}^3$	Bias Correction Factor	Bias Corrected Annual Mean in $\mu\text{g}/\text{m}^3$
115	R	7	79.5	1.03	82.1	0.727	59.7
130	R	4	22.0	0.85	18.6	0.727	13.5
A36	B	7	22.6	1.03	23.3	0.677	15.8
A54	R	6	46.2	1.05	48.4	0.727	35.2
A9	R	8	42.5	0.98	41.7	0.727	30.3
D26	R	8	36.2	0.91	32.8	0.727	23.9

As can be seen from the table above, all but one of the annualised diffusion tube results are well below the annual mean objective for nitrogen dioxide. Tube 115 is above $40\mu\text{g}/\text{m}^3$ but already included within the AQMA boundary. As this tube is just below $60\mu\text{g}/\text{m}^3$ (indicative of potential breaches of the short-term hourly NO_2 objective), it will be closely observed over the next 12 months.

C3b: Annualising Holgate PM_{10} Data

As data capture for Holgate PM_{10} was only 68.5% in 2018, annualisation has been performed in line with guidance in LAQM.TG16 using two nearby background AURN monitoring sites. Details are provided in the table below:

Table C.1b: Annualisation Summary for Holgate PM_{10}

Site	2018 Annual Mean PM_{10} ($\mu\text{g}/\text{m}^3$)	Period Mean PM_{10} ($\mu\text{g}/\text{m}^3$)	Ratio
York Bootham	13.84	14.43	0.96
Leeds Centre	17.24	17.99	0.96
			Av ratio = 0.96

The Holgate PM_{10} period mean of $12.9\mu\text{g}/\text{m}^3$ has been multiplied by the average ratio of 0.96 calculated above to give a figure of $12.4\mu\text{g}/\text{m}^3$. This is an estimate of the 2018 annual mean PM_{10} concentration monitored at this site.

C4: Distance Correction

Distance correction has been carried out in line with paragraphs 7.77 – 7.79 of LAQM.TG (16). Local annual mean background NO_2 concentrations have been taken from the Bootham background continuous monitoring station. In 2018, the NO_2 concentration monitored at this site was $14.6\mu\text{g}/\text{m}^3$. This value has been used as an input to the fall-off with distance calculator.

Following discussions with the LAQM Helpdesk in 2017 for the previous Annual Status Report⁹ it was agreed that due to the number of diffusion tubes operated by City of York Council, only those in excess of the annual mean objective of $40\mu\text{g}/\text{m}^3$ should be distance corrected. Table C.2 below provides commentary on each of

⁹ Previous email correspondence with Max Nancarrow of LAQM Helpdesk 28/4/2017

these tubes and shows the information used to distance correct the diffusion tube data. Where a distance correction has not been undertaken, commentary has been provided in the table to explain the reason for this decision. In some instances, diffusion tubes are not strictly in relevant locations but are located at the same distance from the road as nearby properties that would be considered relevant locations. In such instances, tubes are reported as being in relevant locations. All tubes shown in the table are already contained within the Air Quality Management Area boundary (with the exception of tube D51 which is not located at a relevant location for the purposes of LAQM).

Table C.2: Distance Correction of Annual Means that were over the Annual Mean Objective of $40\mu\text{g}/\text{m}^3$

Site ID	Description	Comments	Distance to nearest point of relevant exposure (m)	Distance from monitor to kerb of nearest road (m)	Distance between kerb and receptor (m)	Raw annual mean NO_2 ($\mu\text{g}/\text{m}^3$)	Bias corrected measured NO_2 annual mean ($\mu\text{g}/\text{m}^3$)	Distance corrected annual mean ($\mu\text{g}/\text{m}^3$)
7	Gillygate opposite Portland Street	Requires distance correction	2.3	0.3	2.6	62.3	45.3	34.5
13	Papillion hotel - Gillygate	Location considered relevant without correction as mounted on a drainpipe attached to facade of building	-	-	-	58.6	42.6	42.6
14	Former Gillygate Surgery	Location considered relevant without correction as mounted on a drainpipe attached to facade of building	-	-	-	64.1	46.6	46.6
109	Signpost outside 16 Rougier Street	Location considered relevant without correction as mounted on a drainpipe attached to facade of building	-	-	-	62.0	45.1	45.1
110	Signpost inbetween Club Salvation & 31 George Hudson Street	Location considered relevant without correction as mounted on a drainpipe attached to facade of building. Relevant exposure at first floor level.	-	-	-	60.0	43.6	43.6

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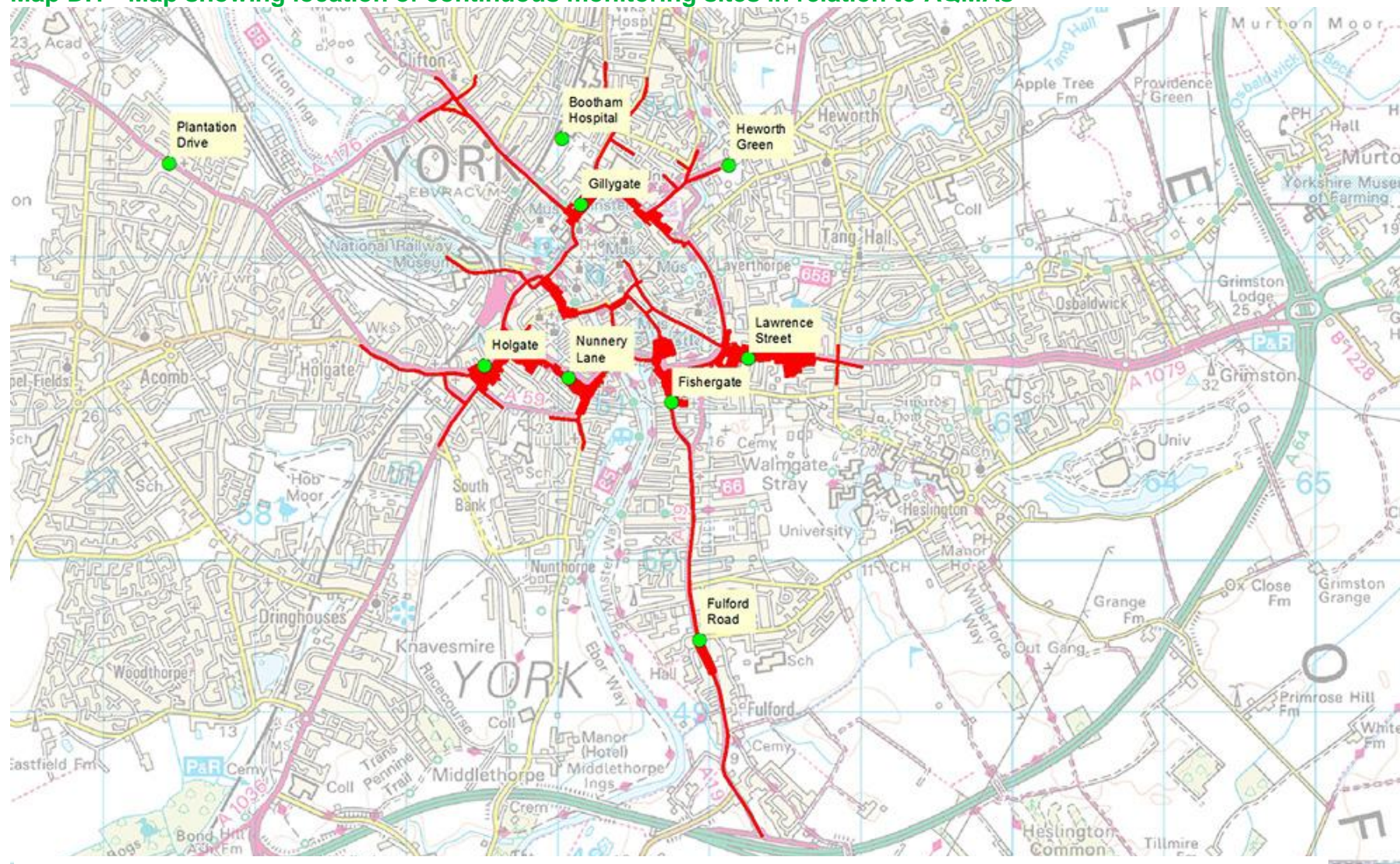
Site ID	Description	Comments	Distance to nearest point of relevant exposure (m)	Distance from monitor to kerb of nearest road (m)	Distance between kerb and receptor (m)	Raw annual mean NO ₂ (µg/m ³)	Bias corrected measured NO ₂ annual mean (µg/m ³)	Distance corrected annual mean (µg/m ³)
115	Inside Bus Stop opposite side of road from tube 114	Not relevant location with respect to annual mean as located at a bus stop. Potentially relevant with respect to hourly NO ₂ objective, but currently just under 60µg/m ³	-	-	-	79.5	59.7	59.7
A1	Bootham traffic light outside dance shop	Location considered relevant without correction as mounted on a drainpipe attached to facade of building	-	-	-	59.8	43.5	43.5
A57	Hairdressers Holgate Road	Location considered relevant without correction as mounted on a drainpipe attached to facade of building. Relevant exposure at first floor level.	-	-	-	62.4	45.3	45.3
B72	Front of York Cycleworks	Located at the same distance from the road as the neighbouring flats. The bias-corrected annual mean is therefore considered relevant without distance correction.	-	-	-	57.5	41.8	41.8
C26	Outside Odean	Located on traffic island between multiple lanes of traffic - cannot be distance corrected, but already in AQMA	13	N/A	N/A	56.4	41.0	41.0

City of York Council

Site ID	Description	Comments	Distance to nearest point of relevant exposure (m)	Distance from monitor to kerb of nearest road (m)	Distance between kerb and receptor (m)	Raw annual mean NO ₂ (µg/m ³)	Bias corrected measured NO ₂ annual mean (µg/m ³)	Distance corrected annual mean (µg/m ³)
C27	Windmill Pub	Location considered relevant without correction as mounted on a drainpipe attached to facade of building	-	-	-	63.7	46.3	46.3
D19	Bridge St/ Micklegate Junction	Requires distance correction	1.7	0.2	1.9	62.6	45.5	34.9
D20	Low Ousegate / Clifford St junction, outside Waterstones	Requires distance correction	13	0.5	13.5	54.6	39.7	25.1
D43	Rougier Street Signpost 1, has "Except for Access" sign on it.	Requires distance correction	3	0.3	3.3	61.1	44.4	32.8
D51	Taxi Rank at York Railway Station Main Entrance	Not at relevant location (tube installed for non-LAQM project)	-	-	-	79.3	57.7	57.7
D56	Three Tuns Pub, 12 Coppergate	Location considered relevant without correction as mounted on a drainpipe attached to facade of building. Relevant exposure at first floor level.	-	-	-	58.2	42.3	42.3

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

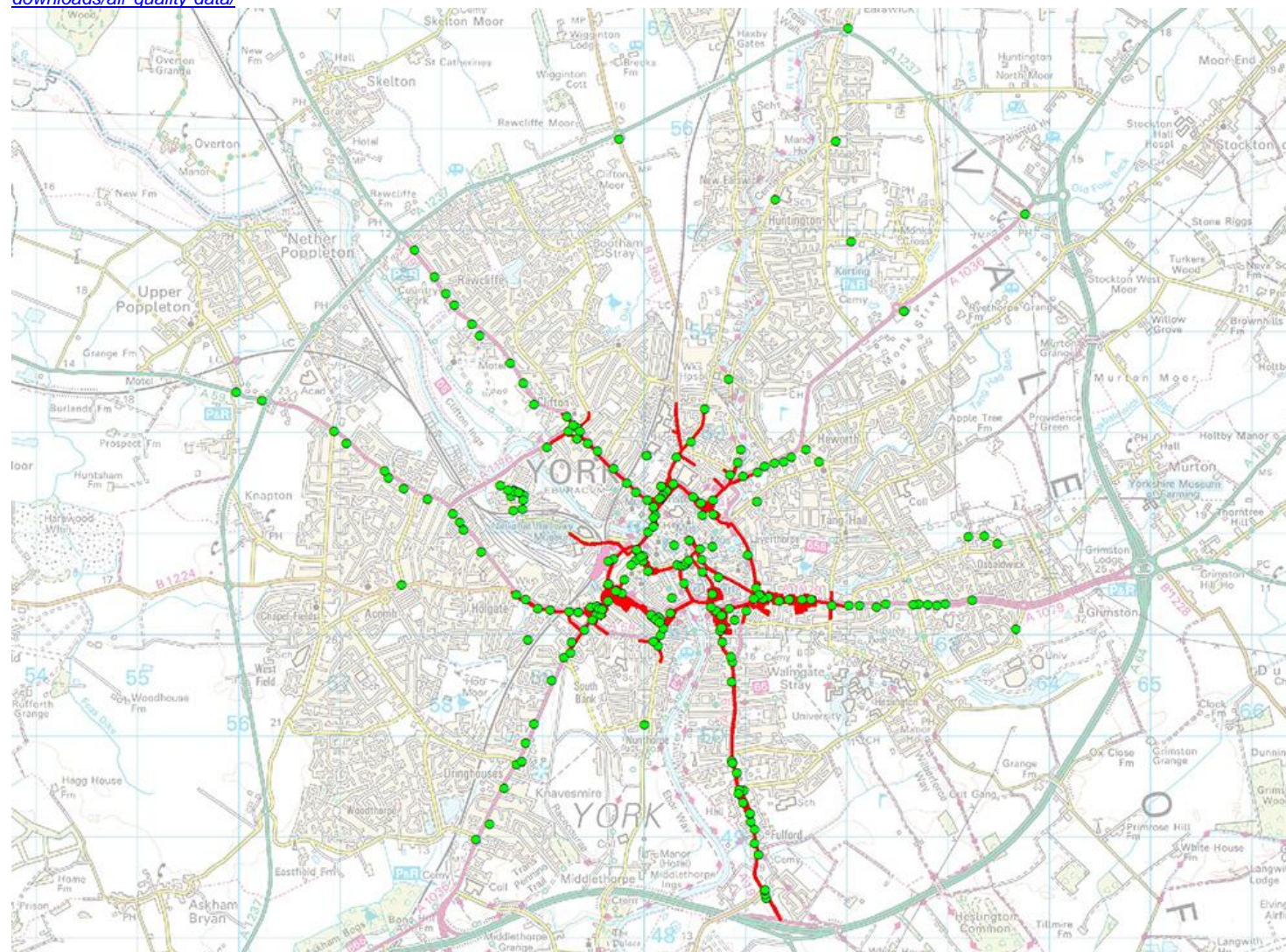
Map D.1 - Map showing location of continuous monitoring sites in relation to AQMAs



Air Quality Management Areas (AQMAs) shown in red.

Map D.2 - Map showing location of diffusion tubes in relation to AQMAs

Due to the number of tubes and difficulty labelling the map below, an interactive diffusion tube map showing tube reference numbers is has been made available online at: <http://jorair.co.uk/data-downloads/air-quality-data/>



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

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

¹⁰ 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
ASR	Air Quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO ₂	Sulphur Dioxide
µg/m ³	Microgrammes of pollutant per cubic metre

References

- All City of York Council's previous Review and Assessment reports can be found online at <http://www.jorair.co.uk/data-downloads/reports/>
- DEFRA Technical Guidance LAQM.TG(16) is available online at: https://consult.defra.gov.uk/communications/laqm_changes/supporting_documents/LAQM%20Technical%20Guidance%202016.pdf
- DEFRA Policy Guidance LAQM.PG(16) is available online at: https://consult.defra.gov.uk/communications/laqm_changes/supporting_documents/LAQM%20Policy%20Guidance%202016.pdf