2021 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

Date: March 2022

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Executive Summary: Air Quality in Our Area

Air Quality in Coventry

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

The mortality burden of air pollution within the UK is equivalent to 28,000 to 36,000 deaths at typical ages[3], with a total estimated healthcare cost to the NHS and social care of £157 million in 2017[4].

The main pollutants of concern in Coventry are nitrogen dioxide (NO_2) and particulate matter (PM). These pollutants are predominantly associated with road traffic emissions particularly on busy roads and in areas where traffic queues regularly. The issues arise when people spend time near high levels of these pollutants whether through housing, working or recreation.

In Coventry, the main concern is centred on housing that is in close proximity to the major arterial routes with high levels of queuing traffic, principally around busy junctions and traffic lights. Current hotspots include parts of Holyhead Road, Walsgrave Road, Foleshill/Longford Road and Stoney Stanton Road.

Rather than focussing on individual roads and junctions, Coventry has declared the whole area as an Air Quality Management Area (AQMA). This decision was taken to ensure that the problem wasn't simply moved from one road or junction to another. More information is available at:

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

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

[3] Defra. Air quality appraisal: damage cost guidance, July 2020

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

http://www.coventry.gov.uk/info/68/pollution/171/air_quality

Recent years' NO_2 diffusion tube monitoring results show that, whilst there are fluctuations, there is a general decline in levels of nitrogen dioxide and levels of PM_{10} do not exceed the national standards. The 2020 results show a large drop in levels due to the Covid-19 lockdown requirements and associated reduction in traffic flows so this data should not be considered typical.

Coventry City Council (CCC/'The Council') continues to work closely with neighbouring authorities and Government Agencies to address poor air quality. The Council is part of the Coventry and Warwickshire Air Quality Alliance, MJAC, Pollution Groups in both the West Midlands and Warwickshire and is collaborating with the University of Birmingham with their WM-Air Project.

Coventry was identified by DEFRA in July 2017 as one of 28 cities requiring further action to tackle areas of poor air quality related to emissions of nitrogen dioxide.

Coventry received a Ministerial Direction to implement a Clean Air Zone (CAZ) however the Council has developed an alternative package of measures that is predicted to achieve compliance with the NO_2 objective in a shorter timescale. This alternative package was accepted by Defra and a revised Ministerial Direction was issued in Feb 2020 with Defra also confirming that a Clean Air zone is not required in Coventry.

CCC is committed to transforming Coventry into a cleaner and healthier city, supporting economic growth, improving health and providing a wider choice of travel options, and improvements in air quality underpin this vision. Coventry was awarded the UK City of Culture for 2021, and making improvements to benefit air quality within the city fully aligns with the City of Culture themes of Being Human, Reinvention and Moving, and the vision of reimagining the place of culture in a diverse, modern Britain.

Coventry therefore has taken the opportunity to adopt a solution which will deliver a lasting improvement in air quality and to showcase this solution to a wider audience.

Coventry is renowned for its rich tradition in innovation, and CCC is keen to support innovative solutions involving emerging technology.

Actions to Improve Air Quality

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

The 2019 Clean Air Strategy[5] sets out the case for action, with goals even more ambitious than EU requirements to reduce exposure to harmful pollutants. The Road to Zero[6] sets out the approach to reduce exhaust emissions from road transport through a number of mechanisms; this is extremely important given that the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

There is a considerable amount of work being undertaken by Coventry City Council that has the potential to improve air quality whether directly or indirectly. Table 2.2 provides a summary of the main actions being undertaken.

With the establishment of the West Midlands Combined Authority (WMCA), regional initiatives to achieve air quality improvements should be forthcoming (governance structures are being established during these formative stages). There will be major opportunities for regional sustainable growth to be secured with Coventry at the forefront of low emission vehicle technology research and development.

Coventry City Council currently has representatives at the Coventry and Warwickshire Air Quality Alliance. The alliance is an informal alliance of officers from Public Health, Planning Transport, Environmental Health and partner organisations across the sub region. Air Quality also features as a priority in the Coventry and Warwickshire Health Protection Strategy 2017-2021 (currently under review) (https://apps.warwickshire.gov.uk/contentplatform/open/WCCC-630-1096). The Alliance have been working in partnership to support collaborative efforts to improve air quality in Coventry and Warwickshire, which has included developing an active travel campaign: "Choose How You Move" (please see website at: www.coventry.gov.uk/activetravel),

[5] Defra. Clean Air Strategy, 2019

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

developing Coventry and Warwickshire-wide planning guidance for developers regarding Air Quality, and collaboratively reviewing air quality action plans.

Coventry City Council is supporting the West Midlands Air Quality Improvement Programme (WMAQIP). Led by the University of Birmingham, the project comprises three broad themes which aim to improve understanding of the region's air pollution challenges and to provide new capability to support clean air measures. Part of this work will be to look at $PM_{2.5}$ and additional monitoring of $PM_{2.5}$ has commenced in Coventry in 2021.

Five local authorities from the Alliance have collaboratively developed a Supplementary Planning Document (SPD) on air quality, that sets out design criteria and measures developers are expected to implement as part of planning applications. It is hoped that developing this document on a regional basis will improve consistency across the area. The SPD was adopted on the 6th September 2019 by Coventry City Council with the other authorities also recently adopting.

The Council have been successful in bidding for £1.2 million of funding and have installed 39 rapid charging points around the city to charge electric taxis. This will provide the infrastructure to support the uptake of ultra-low emissions electric taxis in Coventry, and reduce emissions from older diesel vehicles. The first of these were installed and operational during 2018 and is now complete along with the on-going provision of over 800 on-street charging points for residents to use. The Council also secured £1.5 million and upgraded over 100 National Express buses to Euro VI Standard engines and £2.2 million for a fleet of 10 electric buses to operate in the City. In addition to this, the Council and TfWM were awarded £50 million (with an additional £78 million investment from bus operators) to become the first all-electric bus city in the UK with the first 130 buses expected to enter service in 2023.

Coventry City Council secured £2 million from the Government's Early Measures Fund to improve air quality along the A4600 corridor which runs between the City centre and M6 Junction 2. A package of measures has been developed including junction improvements, new technology to improve traffic management, public engagement and electric vehicle trials for taxi drivers in the City. Coventry will continue to bid for funding measures as they become available.

In February 2020, following submission of the Outline Business Case and modelling in 2019, the Government confirmed that Coventry does not need to introduce a charging Clean Air Zone (CAZ D), which would have seen older and more polluting vehicles charged for entering a large area of the city.

Instead, the Government has agreed that the package of measures put forward by the Council could be effective in reducing NO2 levels without the wider social and economic disbenefits that the CAZ D would have created.

In line with the Government direction, the Full Business Case has now been completed, and was submitted to Government in December 2020/February 2021, following Cabinet approval.

The resulting Local Air Quality Action Plan (LAQAP) has been based on air quality and traffic monitoring data and modelling, and the package of measures focusses on improving NO2 levels at those locations where particular problems have been identified, which are Holyhead Road and Foleshill Road.

The LAQAP package focuses upon encouraging local trips to be made by walking and cycling rather than the car, with significant investment in a new high-quality cycle route between Coundon and the city centre, and on an engagement programme with schools, businesses and local communities building on the successful work already done in the Walsgrave corridor.

The Holyhead Road abatement element of the package includes targeted junction and road layout changes on Holyhead Road and parallel routes to allow traffic to flow more freely, reduce congestion and to provide better walking and cycling routes into the city. These measures will allow the traffic flows on Holyhead Road to be reduced through restrictions if necessary to allow NO2 levels to be brought below legal limits on this route.

On Foleshill Road, traffic management measures will be introduced to remove through traffic, which will be encouraged to use the A444 to access the city centre instead.

The government has endorsed this package and has awarded the Council £25.4 million in grant funding to deliver it.

The Council consulted with the public and businesses on the Plan in March 2018 and in Spring 2020 and amended the package to reflect the feedback received.

Conclusions and Priorities

Exceedances in NO_2 continue to be identified inside the existing AQMA although the general trend shows that levels are declining due to reduced emissions from modern, cleaner engines.

Implementing the measures identified in the Local Air Quality Action Plan (LAQAP) is the primary focus to ensure compliance with the Ministerial Direction. The key priorities for addressing air quality in these areas remains the reduction in queuing traffic and congestion at junctions.

Other priorities for 2020/21 include:

- Continue to monitor NO_2 concentrations at existing locations using existing technology and to introduce and trial new technologies that will give more accurate, real-time measurements
- Continue to raise public awareness of air quality through campaigns for active travel such as City Ride events, a new 'Choose How You Move' website for Coventry and Warwickshire and promotion of Defra's 'Burn Right' campaign.
- Continue green procurement such as electric vehicle recharging points for the promotion of zero/low emission transport and vehicle fleet efficiency improvements
- Promote and complete improved cycling/walking and public transport facilities such as Coventry Station Masterplan, public realm works and new cycle ways

Local Engagement and How to get Involved

A large proportion of road vehicles are private car users. There are lots of simple things the public can do to help improve air quality locally, such as:

- Using public transport and park and ride facilities
- Walking or cycling short journeys rather than using the car
- Share journeys with colleagues and friends
- Switch off car engines when stationary
- Choosing a low emission car for your next purchase – there are Government funds available
- Choosing an ultra-low NOx boiler with a dry NOx emission rate of 40mg/kWh or less for your next purchase
- Avoid burning garden and domestic waste and use local recycling facilities
- If using a wood burning stove or open fireplace, ensure the correct/smokeless fuels are being used. Please see the council website for more information:

https://www.coventry.gov.uk/info/26/pollution_licensing/1368/smoke_control_areas/2 and the Burnright and Woodsure websites.

Further information can be found on the Council's website, and Defra's Local Air Quality Management (LAQM) website.

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1 Local Air Quality Management

This report provides an overview of air quality in Coventry during 2020. 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 Coventry City Council to improve air quality and any progress that has been made.

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

2 Actions to Improve Air Quality

Air Quality Management Areas

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

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

- NO_2 annual mean

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Name and Date of AQAP Publication	Web Link to AQAP
City-wide AQMQ	1st November 2009	NO_2 Annual Mean	Coventry City	The whole city as defined by the city boundary	YES	Annual average levels of NO_2 identified as exceeding 40µg/m^3 at a number of roadside locations in city	Action Plan 2007	https://www.coventry.gov.uk/downloads/file/1773/air_quality_action_plan_2007

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

☒ Coventry City Council **confirm that all current AQAPs have been submitted to Defra**

Progress and Impact of Measures to address Air Quality in Coventry

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

The report is well structured, detailed, and provides the information specified in the Guidance. The following comments are designed to help inform future reports.

1. *Robust and accurate QA/QC procedures were applied. Calculations for bias adjustment, annualisation and distance-correction factors were outlined in detail.*
2. *The Council has included discussion and review of its AQMAs and monitoring strategy, informed due to the extensive monitoring network and also the additional tubes in place to provide data. This demonstrates the Councils proactive and dedicated approach to improving air quality across the area.*
3. *Comments from last year's ASR have been mentioned and addressed. This is welcomed, and we encourage this to continue in future ASRs.*
4. *However, the need for an updated AQAP was mentioned in last years' ASR appraisal, and this has not yet been adopted. The Council is encouraged to adopt a revised AQAP in the next reporting year.*
5. *The Public Health Outcomes Frameworks was mentioned. The Council have referred specifically to indicator D01, which is the fraction of mortality attributable to particulate air pollution, and this is encouraged.*
6. *Council have provided a clear map of the diffusion tube monitoring network; trends are displayed and discussed in the report, this is welcomed.*
7. *Overall the report is detailed, concise and satisfies the criteria of relevant standards. The Council should continue their good and thorough work.*

Coventry City Council has taken forward a number of direct measures during the current reporting year of 2021 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. 62 measures are included within Table 2.2, with the type of measure and the progress Coventry City Council have made during the reporting year of 2021 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2.

Key completed measures are:

- Approval by JAQU of the Full Business Case containing package of measures to achieve compliance in the shortest possible time
- Heatline connection to Friargate offices was completed
- Coventry Station Masterplan and associated public realm works are nearing completion
- Installation of 403 Slow and Fast Charge on-street electric vehicle points
- Installation of variable messaging signage (VMS) and air quality sensors along the A4600, including the Ball Hill corridor now capable of diverting traffic onto alternative routes in real-time episodes of high pollution
- West Midlands cycle hire scheme launched covering City centre and both University campuses.
- Implementation of mobility credit scheme whereby residents can trade old vehicles for public transport subsidies to reduce transport emissions
- Installation of additional PM2.5 monitors as part of Birmingham University project
- Coundon cycle route substantially complete and opened

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

- Commencement of key measures contained in the LAQAP to facilitate compliance with the NO2 objective level in the shortest possible time
- Completion of the UK Battery Industrialisation Centre
- Our Future Moves exhibition of latest vehicle technology as part of City of Culture
- Additional 260 EV charging bays to be installed on the street

Coventry City Council's priorities for the coming year are:

- Continued implementation of the Full Business Case containing package of measures to achieve compliance in the shortest possible time
- To facilitate the introduction of dynamic traffic management, highway improvements are required to ensure that pinch points on the local road network are removed to

allow traffic to be diverted away from pollution hotspots without creating a problem elsewhere. This package element is focused on the Holyhead Road corridor and the parallel routes and further information is available on the Council's website. This package will relieve traffic pressures on Holyhead Road, ensuring reduced traffic flows and freer-flowing traffic thereby reducing NO_2 levels at the worst pollution hotspot within the city.

- A city-wide programme of travel planning initiatives to include all schools and educational establishments, all major businesses and employers, and local communities within or adjacent to the main corridors within which NO_2 levels are identified to be a problem. These initiatives will seek to reduce the number of car trips being made at a local level by encouraging people to adopt more sustainable and healthy alternatives such as walking, cycling or using public transport.
- To support the engagement programme aimed at encouraging more people to cycle, improvements will be made to the city's cycle network, with high standard routes being built on four key corridors connecting the city centre with outlying suburbs and key destinations. These corridors are:

  1. Foleshill Road
  2. City Centre to Binley and Hospital
  3. City Centre to Whitley
  4. City Centre to University of Warwick

  This seeks to encourage more cycling for local journeys by providing high standard infrastructure on key routes running through identified pollution hotspots.
- Complete Coventry rail station improvements through the Masterplan and associated public realm works to encourage walking/cycling and public transport use

The principal challenges and barriers to implementation that Coventry City Council anticipates facing are:

- Maintaining the long-term effectiveness of measures through continued investment, given insecurity of resources especially revenue funding;

- Ability to influence other policy areas that impact on travel demand across the city, such as new development or education / social policies;
- Providing attractive and affordable alternatives to the car when the Council does not directly control public transport services;
- Possible new or changed legislative controls requiring the council to implement additional measures for particulate matter, which the current package of work and the proposals in the Business Case do not directly address

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

- Disruption to diffusion tube monitoring in 2020 caused by Covid-19 lockdown
- Impact of Covid-19 has delayed the implementation of the Full Business Case
- Local Plan has required additional traffic and air quality modelling and ANPR surveys were delayed due to, roadworks, adverse weather and vandalism.

Coventry City Council anticipates that the measures stated above, in Table 2.2 and those outlined in the Full Business Case to JAQU will be required in subsequent years to achieve compliance in the shortest possible time and enable the revocation of the AQMA for NO_2.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1	Park & Ride South (Memorial Park)	Alternatives to private vehicle use	Bus based Park & Ride	2018	N/A	Coventry City Council (CCC) & Stagecoach	Coventry City Council Transport for West Midlands	No	-	-	Completed	Reduced vehicle emissions	Uptake	Operational, ongoing	Allows drivers to park and finish their journey into the city centre by bus. Introduction of car parking charges may dissuade some users. Improvements include planned introduction of greener efficiency measures, EV charge points being installed for car park. Project initiated to introduce solar panels onto buildings to feed EV car parking and make the park more self-sustaining in energy use.
2	Canley Station Park & Ride	Alternatives to private vehicle use	Bus based Park & Ride	2010	N/A	CCC and Transport for West Midlands (TfWM).	CCC	No	-	-	Completed	Reduced vehicle emissions	Uptake	Operational, ongoing	Allows commuters to park at the stations and continue their journey on train. 20 additional covered cycle racks have been provided. Possibly looking at micro mobility through introducing e-bikes and e-scooters which is at research stage.
3	Tile Hill Station Park & Ride	Alternatives to private vehicle use	Bus based Park & Ride	2010	N/A	CCC & TfWM	CCC, TfWM, DfT	No	-	-	Completed	Reduced vehicle emissions	Uptake	Operational, on-going	Allows commuters to park at the stations and continue their journey on train. Now currently developing plans for improvements, designs being costed, and outline business case drafted. Awaiting DfT confirmation of funding through the City Region Sustainable Transport Settlement. There will be an increase in car parking, a new bus interchange, improved walking and cycling access and secure cycle parking, making onward journeys multi-modal and linking to e-scooter trials where successful. 32 extra covered cycle racks have already been provided.
4	Car Share (Lift-Share) Coventry & Warwickshire	Promoting Travel Alternatives	Personalised Travel Planning	2014	2015	CCC, Liftshare	CCC	No	-	-	Completed	Reduced vehicle emissions	Uptake	Operational, ongoing	Car Share scheme is available via Liftshare. Some businesses have their own systems which are limited to their staff only.
5	Mercury emissions trading scheme	Environmental Permits	Tradable permit system through permit systems and economic instruments	2014	2015	CCC / Solihull Borough Council	CCC / Solihull Borough Councill	No	-	-	Completed	Reduced industrial emissions	Uptake	Ongoing	A trading scheme for mercury emissions from cremations has been established between Coventry and Solihull councils. The scheme allows two crematoria in Solihull to fulfil their obligations under the Environmental Permitting Regulations to abate at least 50% of their emissions for mercury by trading emissions permits with Coventry City Council under an independent burden sharing scheme

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6	Coventry Local Plan and Coventry City Centre Area Action Plan	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2016	2016	CCC	CCC	No	-	-	Completed	Reduction / mitigation in NOx and PM	Reduction / mitigation in NOx and PM	Complete	Within these guidance documents there is a requirement for major developments to consider district energy systems for their heating and cooling needs. Information about the existing low carbon district energy network supplied by waste heat from the nearby waste incinerator is made available but developers are also advised that other similarly low carbon networks will also be acceptable. In addition, the documents contain policy requiring major development schemes to promote the shift to the use of sustainable low emission transport to minimise the impact of vehicle emissions on air quality and that major development proposals require the submission of an air quality assessment. Information and mapping tool made available for planning Development Management and Environmental Protection to promote the existence of current network to developers and encourage future connections to the network to reduce emissions from heating.
7	Heatline Project,	Promoting Low Emission Plant	Emission control equipment for small and medium sized stationary combustion sources / replacement of combustion sources	2013	2015	CCC, CDEC (Coventry District Energy Company), ENGIE	CCC	No	-	-	Completed	Reduction / mitigation in NOx and PM	Uptake	Operational, ongoing	The Heatline district energy network uses waste heat from the municipal waste incinerator to heat eight major buildings within the city centre, one of which is Coventry Cathedral. The scheme eliminates the need for gas boilers at these premises and makes full use of the waste heat using a 650m^3 thermal store. Carbon savings are around 1300 tonnes per year with NOx and particulate matter emissions from connected premises being reduced to zero. There is an active programme to connect further large buildings to the scheme including the new Friargate business district and a new leisure centre. Funding from the Heat Networks Delivery Unit of DECC is being used to explore the feasibility of new connections in the Canley area of the city to link with an existing network operated by the University of Warwick. The Heatline connection to the Friargate offices was completed in 2021 and will serve new buildings in the wider Friargate development currently under construction. Extensions to system to serve other public buildings expected to commence in 2022
8	Air Quality Supplementary Planning Document	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2019	2019	CCC	CCC	No	-	-	Completed	Reduced emissions	Compliance	Ongoing	A specific Policy Document (CCC, Air Quality SPD) has been created to support and provide technical guidance to policy EM7 (Air Quality) in the Coventry Local Plan and was adopted in 2020. Provides developers with guidance on low emissions infrastructure and heating,

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															mitigating impacts from construction and damage costs. Due for review in 12-18 months.
9	Agile working-Kickstart team	Promoting Travel Alternatives	Encourage / Facilitate homeworking	2018	2018	CCC	CCC	No	-	-	Completed	Reduced vehicle emissions	Staff Uptake	Ongoing	During the pandemic the working at home rules have forced staff to work at home where possible which also reduced the need to travel. Council staff and support systems have coped well and adapted to increased home working supported by new technology and it is likely that a large number of staff will adopt a hybrid model of 1-2 days in the office and working from home, reducing the need to travel cutting private car movements and emissions.
10	Pedestrian Thoroughfare - public realm	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2017	2020	CCC	CCC	No	-	-	Completed	Reduced vehicle emissions	Uptake reduced congestion	Completed	The creation of the Friargate bridge with a new pedestrian boulevard has created a more direct route for pedestrians into the city centre from the Coventry railway station. This reduces reliance on taxis and buses to move rail commuters arriving at the station into the City Centre. Walking and cycling routes have been improved from Greyfriars Lane to High Street and on Fairfax Street and new cycle hire schemes have been implemented in these locations. Additionally, by implementing enhanced walking routes through Greyfriars Green and improving the lighting we have made this route a preferred walking route into the city centre. Walking/cycling also promoted by new station masterplan and development.
11	Further public realm works	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2018	2021	CCC, Network Rail, TfWM	CCC	No	Funded	>£10 million	Implementation	Reduced vehicle emissions	Uptake	Ongoing	The £100m Coventry Station Masterplan is near completion and will enhance the journey into the city centre, encouraging the use of trains rather than cars and providing a "Welcome to Coventry Moment". The arrival at the station is enhanced by new public realm, new signage and walking and cycling routes, allowing visitors to see how Coventry is a very walkable city. The new cycle hire scheme has been rolled out at key transport hubs across the city and covers from the Railway station to Pool Meadow bus station.
12	Love Your Bike/Dr Bike sessions	Promoting Travel Alternatives	Promotion of cycling	2016		Cycling Uk/TfWM	CCC	No	-	-	Completed	Reduced vehicle emissions	Uptake reduced congestion	Ongoing	Love Your Bike/Dr Bike sessions have been delivered by local bicycle mechanics with Cycling UK
13	Let's Ride Coventry	Promoting Travel Alternatives	Promotion of cycling	2018		CCC, British Cycling	CCC	No	-	-	Completed	Reduced vehicle emissions	Uptake	Ongoing	The partnership with British Cycling is supported by public health and includes session for children in schools and also outreach in more deprived communities via Family Hubs, where levels of cycling

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															are generally lower. Cycles are provided for the sessions. Mass participation events were not possible due to Covid, but guided rides could still be delivered when restrictions allowed.
14	Coventry Station Masterplan	Transport Planning and Infrastructure	Public transport improvements-interchanges stations and services	2018	2022	CCC, Network Rail, TfWM	CCC	No	-	>£10 million	Implementation	Reduced vehicle emissions	Uptake	Under construction	The Coventry Station Masterplan is delivering £82m infrastructure improvements at Coventry Rail Station, including a second station building and new bus interchange. A pedestrian tunnel under Warwick Road has been completed, a new multi storey car park with EV charge points is complete and will improve accessibility between the railway station and bus interchange, providing a step free and traffic free link between bus and rail services. The bus interchange is due to be completed in early 2022. A new secure station cycle hub has been provided with 176 spaces.
15	Purchase of 5 AQ Mesh air quality monitoring units	Public Information	Via other mechanisms	2017	2017	CCC, AQ Mesh	CCC	Yes	-	£10k - £50k	Completed	Reduced emissions	Data evaluation	Suspended due to faults with units	AQ Mesh units installed in areas of known poor air quality. One is located adjacent to a school in partnership with Public Health. The units are currently undergoing refurbishment with the provider and the manufacturer looking to reinstall the units with improved data capture and accuracy.
16	VMS Project (linking VMS to divert traffic onto less polluted corridors)	Public Information	Via other mechanisms	2019		CCC, Swarco, Siemens	Defra JAQU AQ early measures fund	Yes	Funded	£1 million - £10 million	Implementation	Reduced vehicle emissions	Reduced congestion	Installation works completed, implementation now moved to UTC traffic control centre and commissioning works ongoing	A network of Variable Message Signs (VMS) signs have been installed on the gantries of the ring road to improve navigation around the city for motorists, buses and coaches, with signposting to car parks and the ability to change the messages for events or emergencies to manage traffic more effectively along key routes. The project has been completed and has been extremely useful in keeping all road users informed on all corridors including the ring road. Two VMS signs outbound A4600 route and inbound Hinckley Road to inform drivers if air quality is poor and diverts drivers to alternative route Clifford Bridge Rd to avoid Ansty and Walsgrave.
17	Real-Time Bay Availability System (aka Appy Parking), 2 additional projects have been funded by Innovate UK and DFT,	Traffic Management	UTC, Congestion management, traffic reduction	2019	2019	Appy Parking, CCC DfT C-ITS	Appy Parking, CCC DfT C-ITS	No	-	-	Completed	Reduced vehicle emissions	Uptake, reduced congestion	Project completed in 2019 and now towards commissioning	Council project with AppyParking is a work in progress, but the information it produces may eventually convert kerb side parking from a frustrating source of congestion and pollution into an efficient well managed urban transport market. Currently through the AppyParking app drivers are able to input their destinations, the length of time they want to park, and their expected arrival time. Soon, when they approach their destinations, the guidance system will give them turn-by-turn voice directions to available kerb or

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															off-street parking spaces. The system will then show the best walking route to and from their destination. Following the delivery of the Real-time Bay Sensor project, Coventry City Council has partnered with AppyParking on a new and complementary Innovate UK funded project which will see the implementation of The Parking Platform™ AppyParking's system to collect, aggregate and standardise parking restriction data across councils, creating a UK wide parking dataset.
18	Appy Parking- "Parking Platform" Project	Traffic Management	UTC, Congestion management, traffic reduction	2016	2016	CCC	CCC	No	-	-	Completed	Reduction in vehicle emissions	Digitising traffic regulation orders	Completed	Assisting autonomous vehicles; embedding TRO's within the vehicles and guiding them to available parking areas and reducing congestion and emissions. All TRO's have now been digitised for exploitation for various projecst.
19	Appy Parking - "Park AV" Project	Traffic Management	UTC, Congestion management, traffic reduction	2019	2019	CCC	CCC	No	-	-	Implementation	Reduction in vehicle emissions	Autonomous valet parking	Ongoing	Allowing autonomous vehicles to find the nearest available parking space, reducing congestion and improving air quality. Developed the application in partnership with JLR and tried the application at various parking scenarios. Working with TfWM for implementation of second stage development.
20	UK Connected Intelligent Transport Environment (UK CITE)	Public Information	Other	2016	2018	Led by Travel A.I including CCC / TfWM; Local Authorities Consultancies; TSC and Data Experts Innovate UK	Led by Travel A.I including CCC / TfWM; Local Authorities; Consultancies; TSC and Data Experts Innovate UK	No	-	-	Completed	Reduction in vehicle emissions	Project Success	Completed	First trials completed on test-track at Horiba MIRA (Autumn 2016), the second test track scenarios for connect vehicles and autonomous vehicles were completed (Spring 2017). Third closed on-street trials occurred Autumn 2017 with final open road tests at the latter stages of the project in Summer 2018. Test reaction to autonomous and semi-autonomous vehicles. Principally focused on the vehicle and user experience. Approx. 18 use cases will be tested, using info transmitted from infrastructure - the autonomous vehicle will then determine what to do and how to proceed. Driverless pods to be trialled in Milton Keynes at first and later in Coventry. To date the trials have been a huge success with large scale publicity and dissemination activities including local, national and international press. Largest trial and budget as part of Innovate UK's 'Introducing Driverless Cars to UK Roads' competition. This project has further been exploited by TfWM for the Midlands Future Transport Zone (MFTZ).
21	Citizen's at the City's Heart (CATCHI)	Public Information	Other	2017	2017	CCC / TfWM	CCC / TfWM	No	-	-	Completed	Reduction in vehicle emissions	Uptake	Completed	Has two parts. One is developing the multimodal journey planner on phone. This will collect data on how people are travelling, and then provide real time information on how long a journey would

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															really take people. The second part focuses on harvesting the data and making this available to policymakers to help plan their policy and plan their networks. CCC in partnership with TfWM – to further develop CATCHI & look at possibilities of integrating with the HoPE project. Project extended for one quarter until March end - completed 2017, findings are available for next 10 years, possibly use findings for 2021 city of culture visitor experience public transport and tourist attractions, in partnership with TfWM
22	Public Bike Hire	Transport Planning and Infrastructure	Public cycle hire scheme	2020	2021	Warwick Uni	Warwick Uni	No	-	-	Completed	Reduced vehicle emissions	Uptake	Ongoing	West Midlands Cycle Hire Scheme was developed during 2020 and launched in 2021. The scheme covers Coventry city centre and surrounding area and both University campuses. (This replaces the campus only scheme at University of Warwick). The scheme includes both standard and e-bikes.
23	CCC Employee Training	Vehicle Fleet Efficiency	Driver training and ECO driving aids	2016	2016	CCC	CCC	No	-	-	Completed	Reduced fuel use/ vehicle emissions	Staff training	Ongoing training	All employees using City Council vehicles must complete defensive driver training including how to drive to reduce fuel use. Telematic units are currently fitted within all fleet vehicles to allow vehicles to be tracked and optimal routes to be identified – they are also used to encourage more efficient driving.
24	JLR Park & Ride	Alternatives to private vehicle use	Bus based Park & Ride	2018	2018	JLR	JLRE	No	-	-	Completed	Reduced vehicle emissions	Uptake	Ongoing	Private park and ride for JLR staff and visitors. Operates between Birmingham Airport, Coventry Airport and Gaydon Plant Site. 1 Million passenger journeys per year.
25	SUITS - Sustainable Urban Integrated Transport Solutions (transferred project management TfWM).	Public Information	Other	2018	2018	Led by Cov Uni inc CCC and a European Consortia Horizon 2020 (TfWM, Keelan WMCA)	Led by Cov Uni inc CCC and a European Consortia Horizon 2020 (TfWM, Keelan WMCA)	No	-	-	Completed	Reduction in vehicle emissions	Uptake	Completed	It will evaluate interventions that will improve Coventry's resilience and ability to deliver on reducing congestion, pollution and the development of inclusive transport measures impacting the quality of life for urban dwellers and commuters. Key outputs will be a validated capacity building program for transport departments, and resource light learning assets, decision support tools to assist in procurement, innovative financing, and engagement of new business partners and handling of open, real time and legacy data. Working with 9 local authorities, Coventry University, European Partners, and TfWM, Stakeholder engagement completed.

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26	Choose How you Move Active Travel Campaign	Public Information	Via the Internet	2017	2017	Public Health Cov & Warks	Public Health Cov & Warks	No	-	-	Completed	Reduction in vehicle emissions	Uptake	Ongoing	An Active Travel Campaign for Warwickshire and Coventry was launched in August 2017 (www.coventry.gov.uk/activetravel). Officers have worked to develop a website which is an active travel information hub, under the 'Choose how you Move' branding, to publicise various travel tools such as journey planners, walking and cycling maps, the Coventry and Warwickshire Car Share scheme, as well linking to air pollution. An interactive map showing NO_2 monitoring sites across Coventry and 2016 annual mean NO_2 concentrations has been developed and is accessible through the campaign website. In addition, funding from Early Measures work has included Sustrans using the Choose How You Move branding to promote Active Travel (with a focus on the A4600 corridor, but also with a city-wide Comms campaign promoting Choose How You Move, and therefore active travel, even more. Transport is also in the early development stage of a digital travel planning platform that will provide users with a wide choice of smart, eco-friendly travel options and will also act as a ticket for major events held in Coventry. The platform will also support people flow at events and train/bus stations. Use of the platform will also support Air Quality measures in place for Coventry
27	OZEV Funding for Electric Taxi Charging Points	Promoting Low Emission Transport	Taxi emission incentives	2018	2020	CCC OZEV & ESB, BBLP	Office for Zero Emission Vehicles (OZEV)	No	Funded	£1 million-£10 million	Completed	Reduction in vehicle emissions	Uptake	Completed	£1.2 million of funding awarded to the council and 39 rapid charge points for electric taxis have been installed around the city. 25% £400K was invested by the EV charge point operator (ESB). These charge points have been provided to encourage uptake of low emissions taxis to reduce emissions and support the local taxi industry/investment in UK Automotive industry.
28	OZEV Funding for on street residential charge points scheme	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2019	2022	CCC, OZEV, char.gy & Connected Kerb Ltd BBLP	Office for Zero Emission Vehicles (OZEV)	No	Funded	£1 million - £10 million	Implementation	Reduction in vehicle emissions	Uptake	Ongoing	Phases 1 to 4 completed in 2020 and £1.42 million funding received from OZEV, installed 403 slow and fast charge points for residents that don't have off street parking facility, to encourage them to own or lease electric vehicles. Phase 5 funding received £706,320 for commencement Jan 2022 and completion by July 2022 which will see additional 260 EV charging bays made available.

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29	JAQU Funding for AQ Early Measures	Other	Other	2019	2019	CCC	Defra	Yes	Funded	£1 million - £10 million	Completed	Reduced emissions	Monitor air pollution	Ongoing	£2 million of funding was awarded to CCC to deliver projects under the Air Quality Early Measures Scheme. 12 air monitoring sensors have been installed. During high air pollution readings, a warning is sent to the Council's UTMC whereby advisory messages are displayed on the VMS signs with warnings of high air pollution and advise on alternate routes at two identified hot spots in Coventry
30	JAQU Funding for AQ Early Measures [Signal upgrade]	Traffic Management	UTC, Congestion management, traffic reduction	2019	2019	CCC, Siemens & BBLP	JAQU Defra AQ Early measures funding	Yes	Funded	£2m early measures package	Completed	Improving air quality	Upgrade of traffic signals along the A4600 [an identified AQ hotspot]	Completed	£2 million of funding was awarded to CCC to deliver projects under the Air Quality Early Measures Scheme. 7 traffic signal Junctions along A4600 have been upgraded to facilitate latest technology and bringing it current standards.
31	JAQU Funding for AQ Early Measures [4 x LEVC TX leasing]	Promoting Low Emission Transport	Taxi emission incentives	2019	2019	CCC, LEVC	JAQU Defra AQ Early measures funding	Yes	Funded-	£2m early measures package	Completed	Improving air quality	uptake of E-Taxis	Ongoing	£2 million of funding was awarded to CCC to deliver projects under the Air Quality Early Measures Scheme. A 'try before you buy' scheme has been launched allowing hackney carriage owners/drivers to try the new LEVC electric taxi with a petrol range extender before committing to purchasing the vehicle. CCC is providing financial incentives through early measures grant fund for promoting uptake of first 60 electric taxis.
32	Burn Right & Ready to Burn Campaigns	Public Information	Via the Internet	2019	2019	CCC	CCC	No	-	-	Completed	Reduction in PM2.5	Project success	Ongoing campaign	Campaigns educating the public about use of correct fuel in open fires and woodburning stoves with the aim of reducing smoke and PM2.5 emissions. Website advice on "Do's & Don'ts for Wood Burners" and Burn Right materials promoted for Autumn/Winter 2020 and 2021 via Council website, intranet, Council Twitter and Facebook. Promotion activities regularly released ongoing through the cold weather so is not a one-off promotion. Materials updated to publicise new controls around purchase of seasoned wood and correct materials for wood burners.
33	Bus Lane Suspension	Traffic Management	Other	2019	2020	CCC, BBLP, Siemens	CCC	No	-	-	Completed	Reduced Vehicle emissions	Reduced congestion on key routes	Completed	Evidence showed congestion in Coventry to be rising faster than almost anywhere else due to the growth of the city and its economy. To tackle the growing congestion issue, an evidence-based bus lane review was carried out in 2017 where several unwanted bus lanes were suspended and continued into 2019 with those suspensions now becoming permanent following evaluation.

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34	Intelligent Variable Messaging System (iVMS)	Public Information	Via other mechanisms	2019	2021	"CCC; Siemens Mobility; SGIL; Coventry University; Horiba MIRA CWLEP"	"CCC; Siemens Mobility; SGIL; Coventry University; Horiba MIRA CWLEP"	No	-	-	Completed	Reduction in vehicle emissions	Uptake	Completed, final report submitted to LEP and approved.	The analysis of the reduced travel times (congestion) at peak periods leads to some improved accessibility for city centre economic activities, especially using the Binley Rd corridor, where at peak times (assuming 6% App penetration rate) congestion is all but removed. Assuming that these savings can be realised over the year on a consistent basis there is a reduction in congestion in all corridors, with a reduced period where free flow is not possible. Further, the three test corridors represent important routes into Coventry, but only part of the total road network – around just over a fifth of average daily vehicle counts. The savings estimated above can be expected to be greater if the traffic management systems operate city-wide. It is possible to provide some indication of effects on vehicle emissions of time savings on the corridors, as calculated by Coventry University Centre for Future Transport and Cities. The most substantial achievement of the iVMS project has been to develop and extend the local test bed environment for vehicle technologies (and related smart city activity) across several dimensions. The Bluetooth technology has helped to inform the new DEFRA funded Early Measures Feasibility Project (from 2018 onwards) especially along the A4600 key route into the city.
35	Binley Business Park	Promoting Travel Alternatives	Workplace Travel Planning	2018	2018	CCC, Partners - Binley Business Park, Coventry Building Society, Tsys, St. Gobain, Keogh, Orbit Housing.	CCC, Partners -Binley Business Park, Coventry Building Society, Tsys, St. Gobain, Keogh, Orbit Housing.	No	-	-	Completed	Reduced vehicle emissions	Uptake of sustainable travel	Ongoing	Joint travel plan between several large businesses on Binley Business Park to control traffic management and encourage employees to take up sustainable travel. CCC engaged with businesses in travel planning, engaged with future mobility zones (WMCA).
36	West Midlands Air Quality Improvement Programme WM-Air	Policy Guidance and Development Control	Other policy	2019	2022	University of Birmingham	University of Birmingham	No	Funded	£1 million - £10 million	Implementation	Reduction / mitigation in NOx and PM	Uptake of tools/policy	Ongoing	Led by the University of Birmingham, and supported by £5million of funding from the Natural Environment Research Council (NERC), the project comprises three broad themes which aim to improve understanding of the region's air pollution challenges, to provide new capability to support clean air measures and policy focussed upon the region, and to support the application of these to specific policy scenarios, questions and challenges
37	WM_Air installation new sensors	Other	Other	2021	2021	University of Birmingham	University of Birmingham	No	Funded	£1 million - £10 million	Completed	PM monitoring	Monitoring	Sensors deployed in 2021	10 new $PM_{2.5}$ sensors deployed at key locations across city operated by University of Birmingham as part of WM-AIR project in collaboration with CCC

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38	Friargate Travel Plan	Promoting Travel Alternatives	Workplace Travel Planning	2018	2018	CCC	CCC	No	-	-	Completed	Reduced vehicle emissions and congestion	Uptake	Ongoing	A travel plan has been developed as part of the council's relocation to new offices in a more sustainable location adjacent to the railway station. The building includes cycle parking and changing facilities as well as a fleet of pool bikes and pool cars including electric vehicles to reduce private car use for travel to work and for business journeys. Travel to the office has reduced significantly due to Covid restrictions with home working where possible and hybrid model of working likely to become permanent.
39	UK Autodrive	Promoting Travel Alternatives	Other	2016	2016	Led by Arup managing several partners incl CCC; Axa, Milton Keynes Council, Transport Systems Catapult, Ford, JLR, TMETC, RDM	Led by Arup managing several partners incl CCC; Axa, Milton Keynes Council, Transport Systems Catapult, Ford, JLR, TMETC, RDM	No	-	-	Completed	Reduced vehicle emissions	Project success	Further development TfWM Midlands future mobility zone, link to earlier TfWM	Has two parts. One is developing the multimodal journey planner on phone. This will collect data on how people are travelling, and then provide real time information on how long a journey would really take people. The second part focuses on harvesting the data and making this available to policymakers to help plan their policy and plan their networks. CCC in partnership with TfWM – to further develop CATCH & look at possibilities of integrating with the HoPE project. After project end TfWM looking at how to utilise the app further
40	The UK Battery Industrialisation Centre (UKBIC)	Vehicle Fleet Efficiency	Other	2017	2021	Funding awarded to consortium of CCC, CWLEP, and WMG, at the University of Warwick. New Business created - UKBIC Ltd	UK Government's Faraday Battery Challenge (Innovate UK) and WMCA Loan	No	Funded-	>£10 million	Completed	Reduction in vehicle emissions and improving air quality	Uptake of electric vehicles	Facility opened 2021	The UK Battery Industrialisation Centre (UKBIC) is part of the UK Government's Faraday Battery Challenge. A £130million 18000 square metre facility to support electrification of automotive industry and battery development
41	Very Light Rail (VLR)	Transport Planning and Infrastructure	Public transport improvements-interchanges stations and services	2018		CCC, WMCA, Black Country LEP, Coventry and Warwickshire LEP, Dudley Metropolitan Council, ERDF	CCC, WMCA, Black Country LEP, Coventry and Warwickshire LEP, Dudley Metropolitan Council, ERDF	No	-	-	Planning	Reduced emissions and congestion	Uptake of service	Ongoing R&D phase	Aim is to create environmentally friendly battery driven hop on hop off mass transit transport system for use in smaller cities and towns at a fraction of the cost of traditional trams. Autonomous vehicles designed to provide reliable high frequency turn up and go service with no overhead cables and track designed to minimise need to relocate underground services. Ongoing R&D with protype vehicle and track being developed.
42	Micro-Mobility	Promoting Travel Alternatives	Workplace Travel Planning	2020		DfT, TfWM, CCC, VOI,	Self-funding	No	-	-	Implementation	Reduced emissions and congestion	Uptake	Trial ongoing	E-bikes are, currently being trialled in and around Warwick University campus as part of a national trial.

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43	Earthsense Zephyr Sensors	Traffic Management	UTC, Congestion management, traffic reduction	2018	2019	CCC, EarthSense, Siemens	JAQU Defra, air quality early measures fund	Yes	Funded	£1 million - £10 million	Completed	Improving air quality as wider package measures	Monitoring success and evaluation	Ongoing monitoring	Part of the early measures proposals submitted to JAQU, ongoing to achieve compliance with LAQAP. Linked to VMS system to provide early warning of high air pollution and allow traffic to be diverted onto other routes
44	Mobility Credits	Alternatives to private vehicle use	Other	2020	2024	CCC, TfWM	TfWM, future transport zone	No	-	-	Implementation	Reduced emissions	Numbers of vehicles scrapped, volumes of journeys by other transport modes	Pilot scheme until 2024	Vehicle scrappage scheme in specific wards, targeting older, heavily polluting vehicles. Participants receive £3,000 mobility credits upon scrappage, pre-paid allowance (smart card-based) to be spent on alternative transport methods (including bus, train, e-scooter, cycle hire, car club). To date 76 people have signed up and vehicles have been scrapped.
45	Demand Responsive Transport	Alternatives to private vehicle use	Other	2021		CCC, TfWM, Warwick Uni	TfWM, future transport zone	No	-	-	Implementation	Reduced emissions	Numbers of journeys, how many journeys have shifted from private car	Pilot scheme, ongoing	Pilot of a bus service with no fixed route or timetable. Instead customers request rides via an App with pick-ups and drop offs 'on demand'. System algorithm works out the optimum route for picking up customers travelling to different multiple using shared transport. Initial pilot scheme focused on trips to and from the University of Warwick campus, but this has recently been expanded to cover approximate half of the city. Long-term aim is to go city-wide with the scheme being self-sufficient financially.
46	Kar Share	Promoting Travel Alternatives	Other	2020		CCC & Kar Share	Self-funding	No	-	-	Completed	Improving air quality	Uptake	Ongoing	Peer-to-peer car sharing, enabling vehicles to be shared and used when not being used by the owner. Launched in December 2020 providing 15 vehicles across Coventry.
47	Electric Fleet First EV Trials	Freight and Delivery Mgt	Other	2020	2020	CCC, Transport Team Whitley Depot	Highways England	No	Funded	£1 million - £10 million	Completed	Reduction in emissions and congestion	Uptake	Trial ongoing	£1.8 million grant allowed purchase of electric vehicles to loan to local businesses and organisations. The Try before you buy scheme includes electric, vans, cars and taxis. The project aims to reduce emissions on the local and strategic road network. Scheme also includes opportunity for learner drivers to test an electric car with the hope they will go on to purchase one in the future.
48	All electric bus city	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	2020	2025	CCC and TfWM	Dept for Transport	No	Funded	>£10 million	Implementation	Reduction in emissions and congestion saving 55 tonnes of NO2 per annum	Conversion of fleet to electric buses	Ongoing	CCC and TfWM awarded £50 million of funding by DfT for Coventry to become first all-electric bus city in UK. A further £78 million investment by bus operators will see 297 new electric buses purchased plus installation of necessary charging infrastructure saving 55 tonnes of NO_2 each year. First order of 130 new buses confirmed by National Express and planned to enter service in 2023 with

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															further agreements with other bus operators set to follow.
49	Electric vehicle charging points	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2020	2023	CCC and Connected Kerb	Connected Kerb	No	-	-	Implementation	Reduction in emissions	Installation of EV charging points	Ongoing	Initial trial of 30 new charging points in Holyhead Rd area, followed by agreement to install further 400 charging points funded by Connected Kerb. Charging points host parking sensors and potentially 5G technology including air quality sensors. Coventry has the highest number of EV charging points per head of population outside London and this agreement will take the total number of charging points to 860.
50	Active travel funding	Promoting Travel Alternatives	Promotion of cycling	2021	2022	CCC/WMCA	Government Active Travel Fund/WMCA	No	Funded	£1 million - £10 million	Planning	Reduction in emissions and congestion	Uptake	Ongoing	£1.4 million funding to develop new cycle ways on Foleshill Road and Warwick University campus. Money will also fund second phase of the Binley Cycle way (existing scheme) running to the University Hospital.
51	Active travel funding	Promoting Travel Alternatives	Promotion of cycling	2021	2023	CCC/WMCA	Government Active Travel Fund/WMCA/CCC	No	-	£8.6m	Implementation	Reduction in emissions and congestion	Uptake	Under construction	£8.6 million funding for 6km segregated cycle route along Binley Rd that will form part of wider 10km East-West connection also linking to new Coundon Cycle route (see below)
52	Active travel funding	Promoting Travel Alternatives	Promotion of cycling	2018	2022	CCC	JAQU	Yes	Funded	>£10 million	Implementation	Reduction in emissions and congestion	Uptake	Under construction /Ongoing	2.75km fully segregated bi-directional cycle way along Coundon Rd/Barker Butts Rd linking these residential areas to city centre. Funded by JAQU as part of measures in Business Case primary aim is to remove traffic from Holyhead Road and reduce emissions on critical stretch of road. Sections of the cycle way completed and opened in 2021.
53	Electric Bin Lorry Trial	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	2020	2020	CCC	Dennis Eagle	No	-	-	Completed	Reduction in emissions	Success of trial	Complete	Electric bin lorry loaned by Dennis Eagle for crews to trial around Coventry to investigate feasibility of future procurement
54	Domestic garden bonfires	Public Information	Via the Internet	2019	2019	CCC	N/A	No	-	-	Completed	Reduction in particulate emissions	Public information campaign	Ongoing publicity	Regular publicity and advice to residents twice yearly feature on alternatives to garden bonfires in Spring/Autumn promoting composting and green waste collections to reduce nuisance and particulates from burning garden waste. Bonfire complaints enforced under Environmental Protection Act 1990
55	Wireless Inductive charging study	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission	2021	2022	Western Power/CCC/Coventry University/Toyota/Cenex	Ofgem/WPD	No	-	£100 – 500K	Planning	Reduced emissions through promotion of EV	Study into wireless 'on the go' charging for EV's	Ongoing	Partnering with CCC, Western Power leading research project into wireless inductive charging funded by £417,000 Ofgem/WPD grant to assess viability of this charging technology placed under

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			Vehicles, EV recharging, Gas fuel recharging												road surfaces with aim of reducing anxiety about battery range and charging. Expected to prove beneficial to HGV and distribution operators removing barrier to uptake of electric vehicles and also reducing high demand periods on the grid such as end of day charging when people return home from work
56	Urban Air Port/Air One	Transport Planning and Infrastructure	Other	2021	2022	Urban Air Port/Air One	Funded by UK Research and Innovation	No	-	-	Implementation	Reduced emissions and congestion	Urban Air Port	Due to open spring 2022	World first airport demonstrating the capabilities of electric vertical take-off and landing aircraft for future air mobility including air taxis and drone technology. Functions could include goods distribution, passenger transport and capability of delivering medical supplies, emergency response and major events. Exhibition facility being constructed in Coventry city centre due to open Spring 2022
57	'Our Future Moves'	Public Information	Via other mechanisms	2021	2022	Various	Various	No	-	-	Implementation	Reduced emissions by promoting low emissions technology	Public exhibition	Ongoing	Year-long public exhibition at Coventry Transport Museum as part of Coventry City of Culture highlighting the region's work in transport innovation including demonstrations of latest technology including autonomous vehicles, electric and hydrogen vehicles and very light rail
58	West Midlands Gigafactory	Promoting Low Emission Transport	Other	2020	2025	CCC/Coventry Airport Ltd	CCC/Coventry Airport Ltd	No	-	-	Ongoing	Promoting low emissions vehicles	Battery manufacturing	Planning application granted	Outline planning permission granted on Coventry Airport site for UK's largest Gigafactory of 530,000 square metres producing up to 60GWh enough to power 600,000 electric vehicles per year and due to open 2025.
59	Climate Change Strategy	Promoting Low Emission Plant	Other Policy	2008		CCC	various	No	-	-	Implementation	Reduced emissions	Various measures	ongoing	Key completed measures include: overall 39% reduction in CO_2 emissions in city since 2005; Green Business Programme assisting small - medium sized business apply for energy efficiency grants; Sustainability consultants assisting businesses implementing ISO14001 environmental management system; PFI initiative installed over 28,000 new lighting columns that are dimmable achieving 38% energy reduction; Home insulation grant scheme for residents
60	West Midlands Regional Energy System Operator (RESO)	Promoting Low Emission Plant	Other Policy	2021		CCC/WMCA/ University of Birmingham/University of Warwick/ENZEN Global Ltd/Electron Ltd/Western Power Distribution/Camirus Ltd/Cadent	Innovate UK	No	-	-	Implementation	Reduced emissions	Uptake	Ongoing	RESO looks to explore new energy smarter local systems involving low carbon generation, storage and management integrating new mobility assets such as electric vehicles. Avoids need for large infrastructure upgrades by managing energy flows at a local level. Project aim is to design a sustainable RESO for Coventry.

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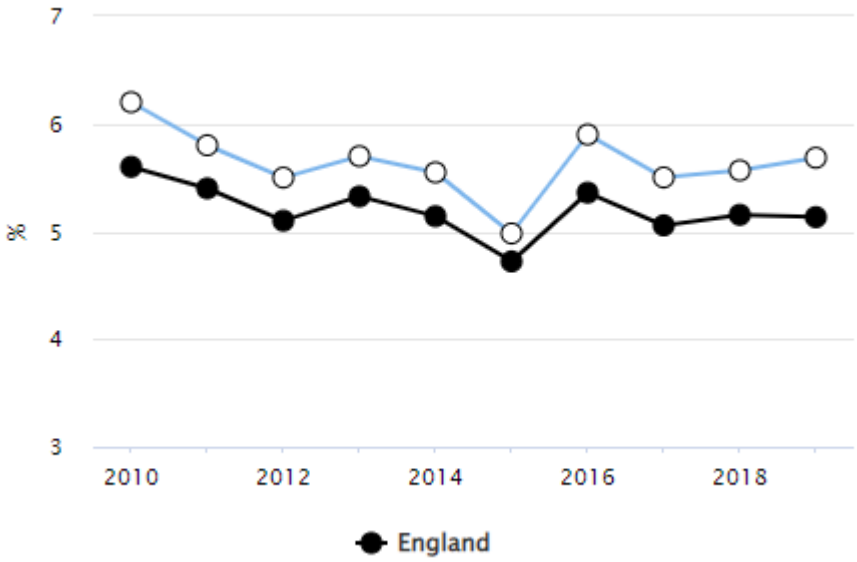
						Gas/Places in Common									
61	Business Support	Environmental Permits	Other			CCC	CCC	No	-	-	Completed	Reduced industrial emissions	Inspections completed	Ongoing	All businesses holding environmental permit inspected for compliance. Businesses also advised on contacting CCC's Business Sustain service for help in energy efficiency/environmental management
62	Business Support	Other	Other			CCC	CCC	No	-	-	Completed	Reduced emissions	Uptake	Ongoing	Business Sustain service provides energy efficiency advice, environmental audits, legal compliance registers, grants for energy efficient heating/lighting and ISO14001 environmental management system accreditation/audits

$PM_{2.5}$ – 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.

Fraction of mortality attributable to particulate air pollution for Coventry



The above shows PHE trend data for $PM_{2.5}$ mortalities. Coventry is tracking in-line with England but lies above the average values. This is similar to the trend against the West Midlands data as shown below:

Period		Coventry Count	Value	95% Lower CI	95% Upper CI	West Midlands	England
2010	○	-	6.2%	-	-	5.7%	5.6%
2011	○	-	5.8%	-	-	5.3%	5.4%
2012	○	-	5.5%	-	-	5.1%	5.1%
2013	○	-	5.7%	-	-	5.4%	5.3%
2014	○	-	5.5%	-	-	5.2%	5.1%
2015	○	-	5.0%	-	-	4.8%	4.7%
2016	○	-	5.9%	-	-	5.5%	5.4%
2017	○	-	5.5%	-	-	4.9%	5.1%
2018	○	-	5.6%	-	-	5.0%	5.2%
2019	○	-	5.7%	-	-	5.3%	5.1%

Coventry City Council does not currently generate any reliable $PM_{2.5}$ or PM_{10} data, Defra mapping has been used to indicate the background annual mean $PM_{2.5}$ concentrations within the Local Authority. The levels range from 8.33 to 12.21µg/m^3 across the Coventry area.

In response, the Coventry and Warwickshire Health Protection Strategy for the period 2017-2021(currently under review) identifies the need to tackle areas of poor air quality, with a key performance indicator being a reduction in $PM_{2.5}$.

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

Coventry City Council continues to trial different technologies that are capable of measuring $PM_{2.5}$ including AQ Mesh and Zephyr.

The city council have been working with Birmingham University on the NERC funded WMAir project (Clean Air Science for the West Midlands https://wm-air.org.uk/). Part of this work is looking at $PM_{2.5}$ emissions and have secured additional monitoring. The project is applying environmental science expertise to support the improvement of air quality, and associated health, environmental and economic benefits, across the West Midlands. As part of the project 10 new particulate matter sensors were deployed across Coventry during 2021 (delayed from 2020 due to Covid). These will support a range of air quality applications, such as understanding air quality in traffic hotspots and along busy routes, in areas of deprivation, and at construction sites and schools. These measurements will

support local initiatives such as the Coventry air quality action plan, emergency active travel use (on the back of Covid-19), and Coventry City of Culture activities. There is also potential for further work involving air quality and health modelling applications, such as case studies exploring active travel, air quality alliance knowledge transfer and planning development/mitigation measures.

Coventry City Council are concerned about particulates released by wood burning stoves with some studies estimating 38% of local particulate emissions come from wood burning. We are promoting the Defra campaign through our website to educate the public and the 'Ready to Burn' and 'Burn Right' websites, encouraging the use of the correct fuels to reduce emissions from these appliances. A campaign around wood burning stoves and particulate emissions featured on the council website and council produced newsletters in the winter of 2020/2021. The aim was to educate the public about the correct use of wood burners and fuels promoting the Woodsure and Burnright websites and emphasising concerns about $PM_{2.5}$ emissions. A second campaign was undertaken in respect of garden bonfires promoting alternatives such as home composting and kerbside green waste collections, both of which will run again in future years.

The supplementary planning document on air quality, developed with partner authorities from Warwickshire, aims to tackle particulate emissions by providing guidance to developers on reducing construction related emissions of particulate matter by requiring developers to produce construction management plans on controlling dust and dirt, use of Non-Road Mobile Machinery (NRMM) and emissions limits on new biomass plant.

Coventry City Council currently has representatives at the Coventry and Warwickshire Air Quality Alliance. The Alliance have been working in partnership to support collaborative efforts to improve air quality in Coventry and Warwickshire, which has included developing an active travel campaign: "Choose how you move" (please see website at: www.coventry.gov.uk/activetravel), developing Coventry and Warwickshire-wide planning guidance for developers regarding Air Quality, and collaboratively reviewing air quality action plans.

The majority of Coventry is covered by 31 separate smoke control orders made between 1959 and 1984

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

This section sets out the monitoring undertaken within 2020 by Coventry City Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2016 and 2020 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

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

Coventry City Council no longer undertakes any automatic (continuous) monitoring. However, it is continuing to trial different technologies that are capable of continuously measuring $PM_{2.5}$. More information on the Zephyr technology is available at:

https://www.earthsense.co.uk/zephyr?gclid=EAIaIQobChMItP_QmsTK9gIVStPtCh3_yQfyEAAYASAAEgJmg_D_BwE

And the AQ Mesh technology at:

http://www.aqmesh.com/

As part of the West Midlands Air Quality Improvement Programme (WMAQIP), led by the University of Birmingham, low cost indicative PM sensors have been designed (wm-air.org.uk). Altasense PM sensors are calibrated at the Birmingham Air Quality Supersite and corrected for the impact of humidity. Relative Humidity and Air Temperature measurements are taken from the inlet of the sensor for data correction and are only indicative of ambient values. An initial review and calibration of the sensors is available at: https://www.frontiersin.org/articles/10.3389/fenvs.2021.798485/full and guidance on using low-cost sensors is available at: https://wm-air.org.uk/low-cost-sensors-for-air-quality-monitoring/.

National monitoring results from the AURN site in the Allesley area of the city operated by Defra are available at https://uk-air.defra.gov.uk/ and results from the second AURN unit known as Coventry Binley Road are available at: https://uk-air.defra.gov.uk/

3.1.2 Non-Automatic Monitoring Sites

Coventry City Council undertook non- automatic (i.e. passive) monitoring of NO_2 at 74 sites during 2020. Table A.1 in Appendix A presents the details of the non-automatic sites.

Maps showing the location of the monitoring sites are provided in Appendix D and at https://www.coventry.gov.uk/pollution-1/air-quality/3. Further details on Quality Assurance/Quality Control (QA/QC) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g. annualisation and/or distance correction), are included in Appendix C.

3.2 Individual Pollutants

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

3.2.1 Nitrogen Dioxide (NO_2)

Error! Reference source not found. and Table A.2 in Appendix A compare the ratified and adjusted monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40µg/m^3. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the full 2020 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 includes distance corrected values, only where relevant.

The results of diffusion tube monitoring across the city during 2020 show a significant decrease increase in the tube results compared to 2019 which is attributed to the reduction in traffic levels associated with the Covid-19 lockdowns. The overall trend over

the last nine years' worth of data, shows a decline in nitrogen dioxide levels across the city. This is broadly in-line with the trend for nitrogen dioxide levels across England. Appendix A contains graphs which show the trend in nitrogen dioxide tube results for the past nine years for five main areas of the city.

In 2020, only one tube that exceeded the annual mean (40 µg/m^3) of a total of 74 tubes. This tube is located close to the road of a small stretch of a busy road on an incline and with a street canyon and is not representative of a receptor. Once distance corrected to the nearest receptor, no tubes exceeded the annual mean of 40 µg/m^3.

Coventry City Council has created an interactive map which shows the locations of the tubes with monitoring results from 2011 to 2020. This is available at:

https://www.coventry.gov.uk/pollution-1/air-quality/3

All exceedances occur in an AQMA as the whole of Coventry has been declared as one AQMA.

Appendix A: Monitoring Results

Table A.1 – Details of Non-Automatic Monitoring Sites

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In the AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
CC01/1*N	Holyhead Road, Beaumont Court	Roadside	432105	279578	NO_2	YES	4.10	3.10	NO	2.80
HR1	Holyhead Road	Roadside	432683	279240	NO_2	YES	0	5.80	NO	2.70
HR1C	73 Holyhead Road	Roadside	432712	279227	NO_2	YES	4.20	1.80	NO	2.50
HR2C	104 Holyhead Road	Roadside	432525	279345	NO_2	YES	0	6.10	NO	2.10
HR4	89 Holyhead Road	Roadside	432639	279258	NO_2	YES	0	7.80	NO	3.00
HR5	School	Roadside	432730	279238	NO_2	YES	3.20	1.80	NO	2.50
HR6	75 Holyhead Rd	Roadside	432706	279228	NO_2	YES	0	6.00	NO	3.00
HR7	opposite 378 Holyhead Road	Roadside	431434	279948	NO_2	YES	14.9	2.1	NO	2.7
UHS1	by the footbridge for ring road	Roadside	432844	279291	NO_2	YES	3.3	2	NO	3.0
CR1	outside 27 Coundon Street	Roadside	432688	279455	NO_2	YES	5.8	1.3	NO	2.5
BH1a	Walsgrave Road, Library	Roadside	434987	279209	NO_2	YES	2.90	2.93	NO	2.67
BH2b	Walsgrave Road, Outside 161	Roadside	435126	279284	NO_2	YES	2.0	3.10	NO	2.80
BH4	Walsgrave Road, 243	Roadside	435331	279358	NO_2	YES	2.20	1.30	NO	1.80
BH13	196/198 Walsgrave Road	Roadside	435507	279387	NO_2	YES	0	5.20	NO	2.50
BH14	238 Walsgrave Road	Roadside	435655	279356	NO_2	YES	8.00	9.60	NO	2.50
BH15i	Walsgrave Road, Post Office	Roadside	435184	279298	NO_2	YES	3.50	4.50	NO	2.30
FS1	Fairfax Street, Pool Meadow	Kerbside	433569	279234	NO_2	YES	3.90	1.00	NO	3.00
QV1	Lampost outside student block	Roadside	433029	278798	NO_2	YES	2.12	1.95	NO	2.57
GF1	Greyfriars Taxi rank	Kerbside	433407	278882	NO_2	YES	0	0.47	NO	2.59
GS1	Outside Gosford Books	Roadside	433899	278845	NO_2	YES	0	9.80	NO	2.80

NU1	Outside Squirrel PH	Roadside	433410	278682	NO_2	YES	9.4	2.1	NO	2.7
SP1	Outside 33 St Patrick's Road	Roadside	433399	278470	NO_2	YES	5	5.0	NO	2.5
SBW1	Junction Sky Blue Way and Harnall Row	Roadside	434297	279023	NO_2	YES	/	0.7	NO	2.8
STL1	End of Stonehouse Lane	Roadside	436203	275841	NO_2	YES	9.00	12.00	NO	2.45
LON8	On no. 703 London Rd	Roadside	436551	275703	NO_2	YES	0	17.90	NO	2.45
LON12	Between 76 & 78 London Road	Roadside	434073	278459	NO_2	YES	2.00	2.00	NO	2.72
SE1	Spon End, 58a	Kerbside	432084	279042	NO_2	YES	2.60	0.10	NO	2.00
SE3	97 Spon End	Roadside	432303	279028	NO_2	YES	0	2.30	NO	3.10
SE4	Butts Road nr Ring Road	Roadside	432701	278716	NO_2	YES	4.50	2.00	No	2.80
SE5	Outside no 15 Spon End	Roadside	432038	279033	NO_2	YES	3.30	2.70	No	2.70
SE6	Outside 26 Spon End	Roadside	432016	279044	NO_2	YES	5.20	0.10	No	2.70
QAV01	Queensland Avenue, Fairytale Flowers	Kerbside	431595	278991	NO_2	YES	5.20	0.10	NO	2.50
QAV12	Queensland Avenue, 2	Roadside	431704	278680	NO_2	YES	0	4.30	NO	2.00
QAV13	Hearsall Lane, 181	Roadside	431763	278657	NO_2	YES	0	4.90	NO	2.50
R5	Foleshill Road, 275	Roadside	433716	280503	NO_2	YES	0	3.70	NO	2.80
R6	Foleshill Road, between 181 & 183	Roadside	433609	280246	NO_2	YES	2.20	2.05	NO	2.72
R8a	Foleshill Road, Outside 411	Roadside	433991	280998	NO_2	YES	1.11	1.65	NO	2.5
R9	Foleshill Road, 324	Roadside	434059	281105	NO_2	YES	1.83	3.07	NO	2.65
LR1	23 Longford Road	Roadside	434836	283030	NO_2	YES	0	5.60	NO	2.00
LR2	24 Longford Road	Roadside	434880	283077	NO_2	YES	0	4.20	NO	2.00
LR3	Longford Road, 139	Roadside	435016	283515	NO_2	YES	0	8.50	NO	1.50
BRN2	Burnaby Road, 19	Roadside	433605	281965	NO_2	YES	0	5.50	NO	2.75
BRN5	41 Holbrooks Lane	Roadside	433639	281995	NO_2	YES	0	6.70	NO	2.00
BA1	Beake Avenue/Radford Road	Roadside	432526	280806	NO_2	YES	0	7.50	NO	3.00

SS1	Stoney Stanton Road, 154	Roadside	434062	280082	NO_2	YES	0	3.70	NO	2.50
SS2	Stoney Stanton Road, 155	Roadside	433994	279969	NO_2	YES	0	4.50	NO	2.50
SS3	R/O 21 Torcastle Close (faces SS Rd)	Roadside	434842	281272	NO_2	YES	0	4.50	NO	2.50
SS5	Lampost L21CAC	Roadside	433852	279814	NO_2	YES	1.80	2.00	NO	2.51
BELL1	16 Hall Green Road	Roadside	435849	282211	NO_2	YES	0	5.70	NO	2.50
BELL2	314 Bell Green Road	Roadside	435826	282158	NO_2	YES	0	2.90	NO	2.70
FGS2	Select & Save, Far Gosford Street	Roadside	434450	279001	NO_2	YES	0	2.40	NO	2.70
FGS3a	Pig in the middle café	Roadside	434530	279026	NO_2	YES	0	5.50	NO	2.50
FGS4	Callice Court	Roadside	434203	278892	NO_2	YES	0	5.40	NO	2.80
GR1	217 Gulson Road	Kerbside	434679	278920	NO_2	YES	0	4.50	NO	2.50
Grange 3	161/163 Grange Road	Kerbside	435791	284285	NO_2	YES	1.44	0.30	NO	2.43
SHP1	257 Sir Henry Parkes Road	Roadside	430447	277080	NO_2	YES	0	9.93	NO	2.37
SHP2	262 Sir Henry Parkes Road	Roadside	430364	277059	NO_2	YES	0	12.47	NO	2.30
SHP3	Outside 190 Sir Henry Parkes Road	Roadside	430566	277231	NO_2	YES	4.16	4.60	NO	2.40
RR1	Opposite Chantry Place	Kerbside	433550	279478	NO_2	YES	N/A	0.10	NO	2.00
RR2	Near Junction 1	Kerbside	433525	279502	NO_2	YES	N/A	0.10	NO	2.90
RR3	Opposite to RR2	Roadside	433552	279524	NO_2	YES	N/A	1.40	NO	2.50
RR4	Ringway Queens East side	Kerbside	433026	278572	NO_2	YES	N/A	0.10	NO	2.60
RR5	Ringway Queens West side	Kerbside	432940	278620	NO_2	YES	N/A	0.10	NO	2.80
SA1	L12PIP	Roadside	427538	277397	NO_2	YES	9.70	1.60	NO	2.50
SA2	Outside 62	Roadside	427624	277863	NO_2	YES	7.70	2.50	NO	2.50
SA4	Outside 12	Roadside	427623	278116	NO_2	YES	0.50	6.00	NO	2.20
HL1	Junction with Broad Lane	Roadside	427249	279780	NO_2	YES	6.70	1.10	NO	2.75

BS1A	Outside 162 Bennetts Road South	Roadside	431927	282911	NO_2	YES	8.7	3.40	NO	3.00
KG1	Outside no 6	Roadside	431956	282113	NO_2	YES	6.70	2.70	NO	3.00
EB1	70 Aldermans Green Road	Roadside	435928	283069	NO_2	YES	0	8.60	NO	2.00
MA1	Outside 71 Moseley Avenue	Roadside	432818	275321	NO_2	YES	17.3	1.8	NO	2.6
STM1	Outside no 2	Roadside	433019	275729	NO_2	YES	5.2	1.6	NO	2.6
STM2	Corner Green Lane St Martins Road	Roadside	433158	274766	NO_2	YES	48	1.3	NO	2.7
GL1	Outside Primary School	Roadside	432818	275321	NO_2	YES	17.3	1.8	NO	2.6

Table A.2 – Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring (µg/m^3)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
CC01/1*N	432105	279578	Roadside	50.0	50.0	**41.27**	36.76	30.42	34.17	25.15
HR1	432683	279240	Façade	50.0	50.0	**60.58**	**52.77**	**47.11**	**49.44**	33.88
HR1C	432712	279227	Roadside	50.0	50.0	**90.16**	**79.21**	**71.45**	**69.66**	**46.56**
HR2C	432525	279345	Façade	50.0	50.0	35.92	26.93	27.50	28.77	17.38
HR4	432639	279258	Façade	50.0	50.0	/	/	**46.27**	**44.10**	24.50
HR5	432730	279238	Roadside	50.0	50.0	/	/	**53.88**	**48.37**	31.00
HR6	432706	279228	Façade	50.0	50.0	/	/	**55.53**	**49.60**	33.37
HR7	431434	279948	Roadside	100.0	33.3	/	/	/	/	18.45
UHS1	432844	279291	Roadside	100.0	33.3	/	/	/	/	16.83
CR1	432688	279455	Roadside	100.0	33.3	/	/	/	/	19.64
BH1a	434987	279209	Roadside	50.0	50.0	**41.61**	37.56	33.87	37.05	24.29
BH2b	435126	279284	Roadside	50.0	50.0	/	/	/	**42.96**	28.95
BH4	435331	279358	Roadside	50.0	50.0	**54.63**		**41.83**	**41.68**	27.97
BH13	435507	279387	Façade	50.0	50.0	38.02	**45.27**	30.88	33.13	22.88
BH14	435655	279356	Roadside	50.0	50.0	**47.32**	34.07	36.33	37.35	24.64
BH15i	435184	279298	Roadside	50.0	50.0	**51.76**	37.50	**40.11**	39.96	26.44
FS1	433567	279234	Roadside	50.0	50.0	**52.35**	**40.86**	**43.75**	**44.59**	25.33
QV1	433029	278798	Roadside	50.0	50.0	**44.60**	38.65	32.96	37.30	28.00
GF1	433407	278882	Façade	50.0	50.0	**42.35**	25.53	33.95	33.55	21.52
GS1	433899	278845	Façade	50.0	50.0	**40.28**	35.30	32.94	34.61	22.08
NU1	433410	278682	Roadside	33.3	33.3	/	/	/	/	21.49
SP1	433399	278470	Roadside	33.3	33.3	/	/	/	/	19.96
SBW1	434297	279023	Roadside	33.3	33.3	/	/	/	/	26.13
STL1	436203	275841	Roadside	50.0	50.0	/	35.20	31.33	33.61	21.69
LON8	436551	275703	Façade	50.0	50.0	/	29.97	25.30	25.32	18.00
LON12	434073	278459	Roadside	50.0	50.0	**49.51**	**48.82**	**43.13**	**45.77**	28.47
SE1	432084	279042	Roadside	50.0	50.0	**42.49**	35.35	34.02	36.41	23.17
SE3	432303	279028	Façade	50.0	50.0	**41.96**	36.62	31.92	34.60	21.89
SE4	432701	278716	Roadside	100.0	33.3	/	/	/	/	25.62
SE5	432038	279033	Roadside	100.0	33.3	/	/	/	/	20.29
SE6	432016	279044	Roadside	100.0	33.3	/	/	/	/	18.79
QAV01	431595	278991	Roadside	41.7	41.7	**51.56**	**41.90**	37.82	39.99	25.53
QAV12	431704	278680	Façade	50.0	50.0	33.69	31.12	32.41	33.76	23.10
QAV13	431763	278657	Façade	50.0	50.0	**42.73**	37.34	33.74	35.18	22.73
R5	433716	280503	Façade	50.0	50.0	**49.01**	**40.13**	39.48	38.58	22.52
R6	433609	280246	Roadside	50.0	50.0	**56.22**	**50.72**	**46.34**	**48.08**	32.23
R8a	433991	280998	Roadside	41.7	41.7	/	/	/	40.51	26.53
R9	434059	281105	Roadside	50.0	50.0		36.86	36.20	37.28	24.97
LR1	434836	283030	Façade	41.7	41.7	**41.71**	37.80	34.88	37.59	24.39
LR2	434880	283077	Façade	50.0	50.0	**45.07**	37.17	38.10	37.79	23.17
LR3	435016	283515	Façade	50.0	50.0	**45.32**	38.71	37.12	35.53	24.77
BRN2	433605	281965	Façade	50.0	50.0	**41.79**	35.98	34.41	34.54	23.59
BRN5	433640	281996	Façade	50.0	50.0	**41.39**	32.57	35.40	33.78	22.30
BA1	432526	280806	Façade	50.0	50.0	39.71	33.75	32.65	31.93	22.64
SS1	434062	280082	Façade	50.0	50.0	**41.19**	34.25	34.08	33.31	22.57
SS2	433994	279969	Façade	50.0	50.0	38.84	31.27	33.19	33.61	21.90

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2020 (%) (2)	2016	2017	2018	2019	2020
SS3	434842	281272	façade	50.0	50.0	**42.80**	36.09	35.29	36.72	24.23
SS5	433852	279814	Roadside	50.0	50.0	**53.18**	**45.80**	**44.86**	**45.81**	29.29
BELL1	435849	282211	Façade	50.0	50.0	**42.19**	38.15	36.26	37.49	24.38
BELL2	435826	282158	Façade	50.0	50.0	39.46	35.20	33.37	33.48	23.52
FGS2	434450	279001	Façade	50.0	50.0	39.09	32.67	32.36	32.88	20.50
FGS3A	434521	279024	Façade	50.0	50.0	**41.00**	33.78	32.87	32.83	21.23
FGS4	434203	278892	Façade	33.3	33.3	/	/	**40.75**	36.92	23.00
GR1	434679	278920	Façade	50.0	50.0	39.04	33.45	33.06	32.31	20.46
Grange3	435791	284285	Roadside	50.0	50.0	/	35.37	33.07	36.36	23.41
SHP1	430447	277080	Façade	50.0	50.0	/	/	28.04	27.54	17.14
SHP2	430364	277060	Façade	50.0	50.0	35.24	28.58	29.52	27.83	17.47
SHP3	430567	277231	Roadside	50.0	50.0	38.17	33.98	33.46	31.34	19.32
RR1	433550	279478	Roadside	50.0	50.0	/	/	39.12	39.22	22.63
RR2	433525	279502	Roadside	50.0	50.0	/	/	38.45	38.23	22.44
RR3	433552	279524	Roadside	50.0	50.0	/	/	**47.63**	**51.60**	32.74
RR4	433026	278572	Roadside	50.0	50.0	/	/	/	37.17	26.13
RR5	432940	278620	Roadside	50.0	50.0	/	/	/	**41.85**	21.36
SA1	427538	277397	Roadside	33.3	33.3	/	/	26.72	24.00	15.37
SA2	427624	277863	Roadside	50.0	50.0	/	/	30.21	27.57	17.10
SA4	427623	278116	Roadside	25.0	25.0	/	/	26.82	25.77	16.57
HL1	427249	279780	Roadside	50.0	50.0	/	/	26.41	23.60	13.83
BS1A	431927	282911	Roadside	50.0	50.0	/	/	/	26.90	18.96
KG1	431956	282113	Roadside	50.0	50.0	/	/	33.43	29.81	21.35
EB1	435928	283069	Façade	50.0	50.0	/	/	30.01	28.81	19.37
MA1	432243	279980	Roadside	100.0	33.3	/	/	/	/	23.53
STM1	433019	275729	Roadside	100.0	16.7	/	/	/	/	/
STM2	433158	274766	Roadside	100.0	16.7	/	/	/	/	/
GL1	432818	275321	Roadside	100.0	16.7	/	/	/	/	/

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16**

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

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

Notes:

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

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

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

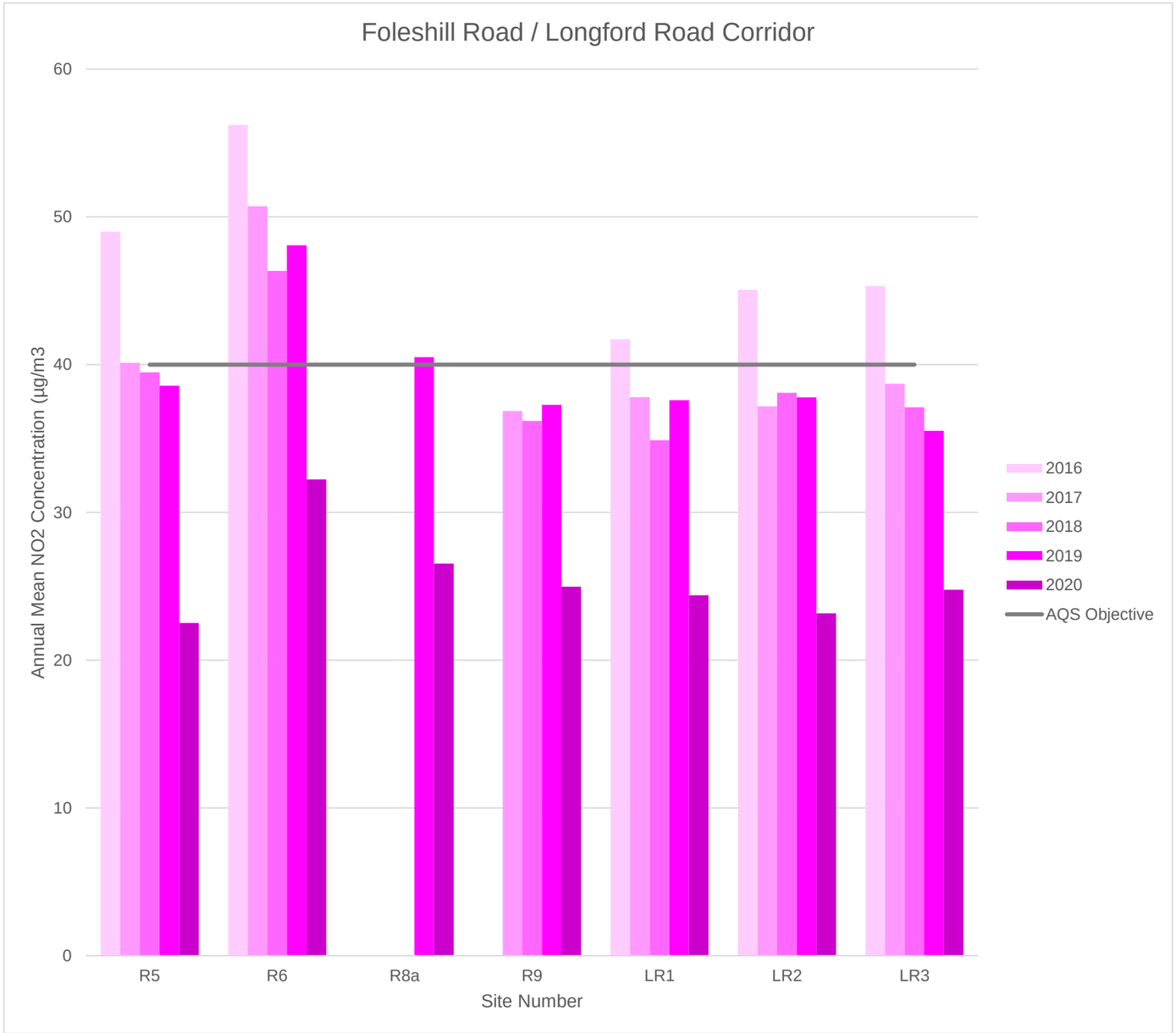
Means for diffusion tubes have been corrected for bias. All means have been "annualised" as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

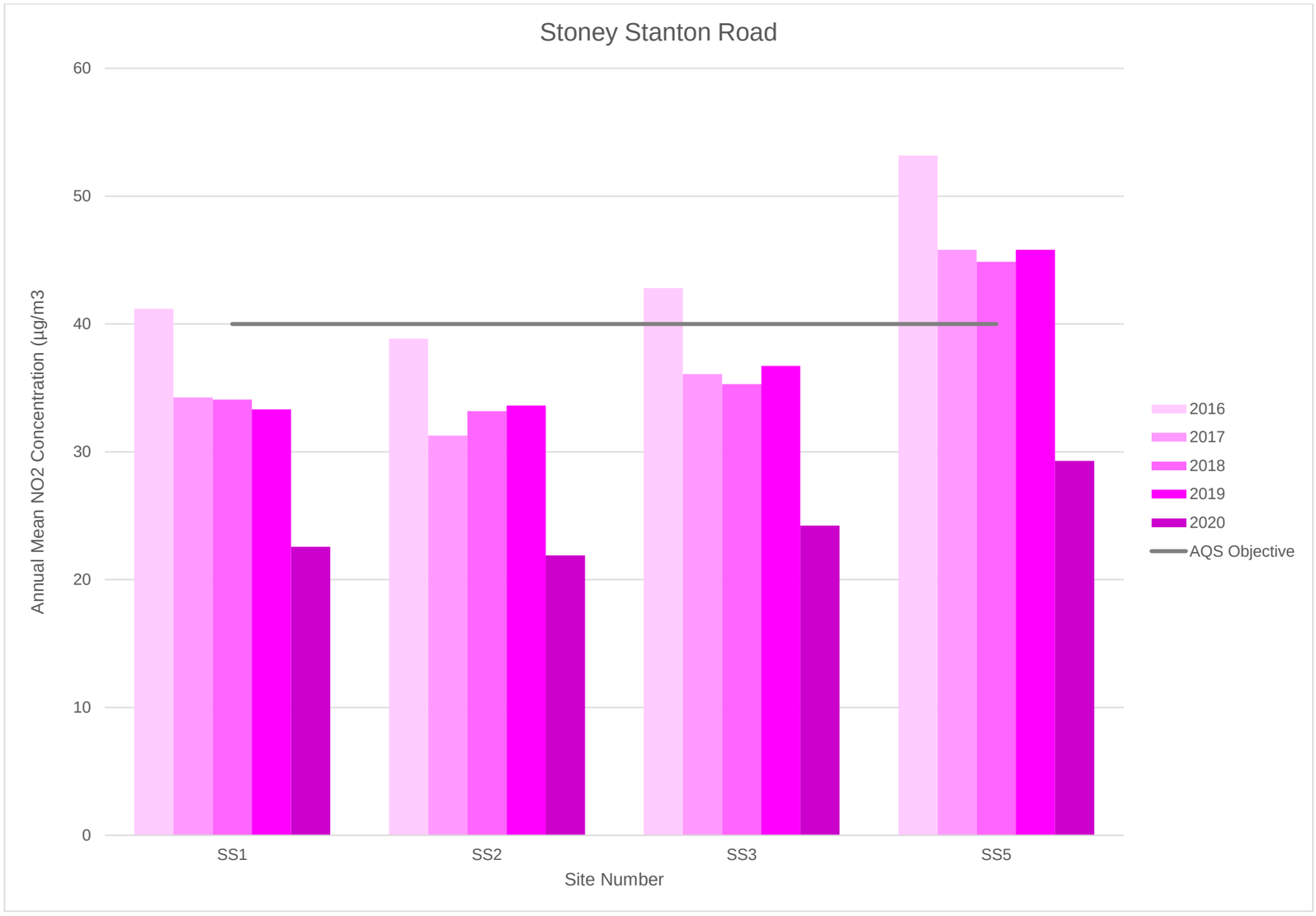
Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

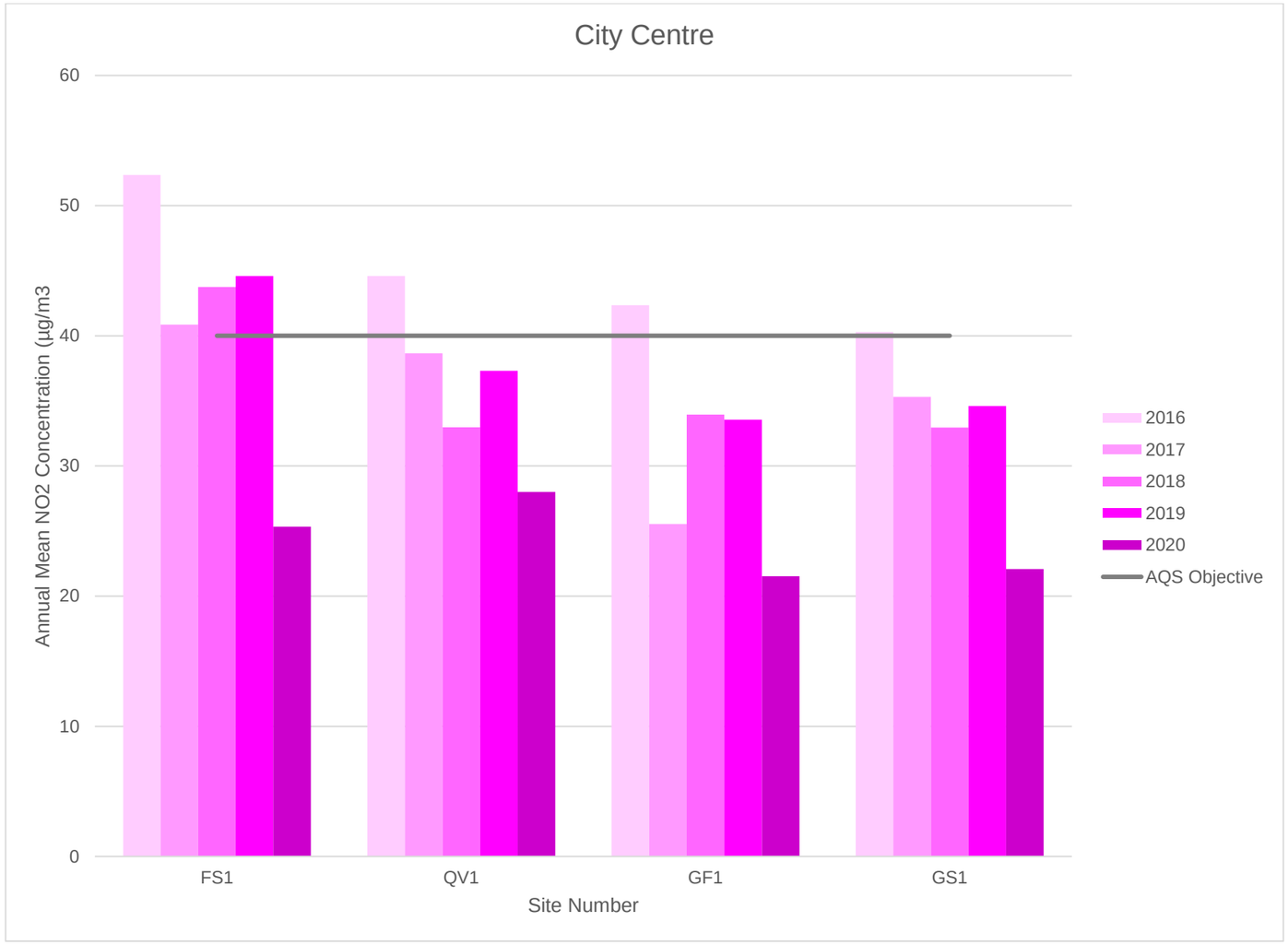
(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

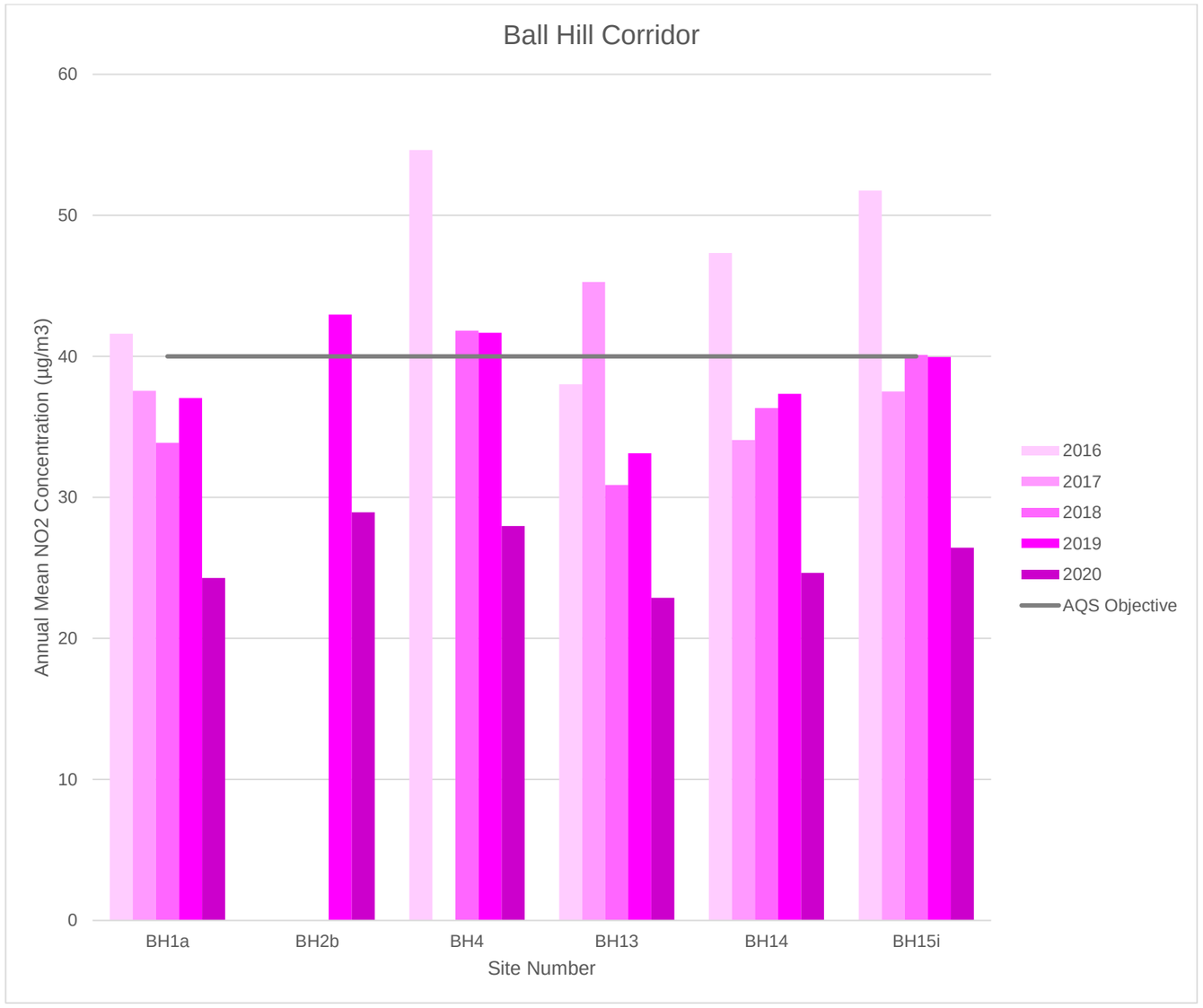
(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Figure A.1 – Trends in Annual Mean NO_2 Concentrations

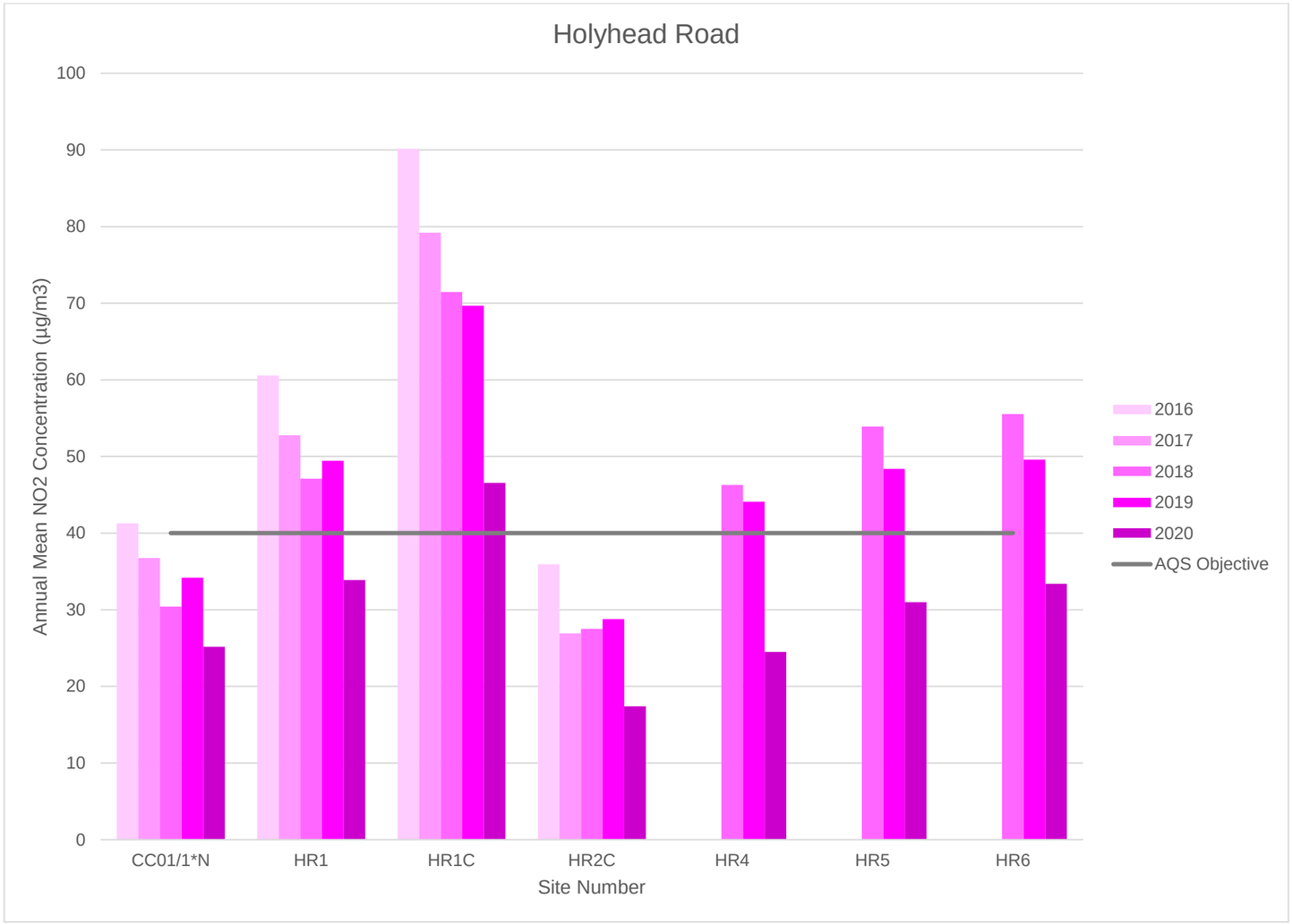



Stoney Stanton Road
Annual Mean NO2 Concentration (µg/m3
60
50
40
30
20
10
0
SS1
SS2
SS3
SS5
Site Number
2016
2017
2018
2019
2020
AQS Objective


City Centre
60
50
40
30
20
10
0
Annual Mean NO2 Concentration (µg/m3
FS1
QV1
GF1
GS1
Site Number
2016
2017
2018
2019
2020
AQS Objective


Ball Hill Corridor
60
50
40
30
20
10
0
Annual Mean NO2 Concentration (µg/m3)
BH1a
BH2b
BH4
BH13
BH14
BH15i
Site Number
2016
2017
2018
2019
2020
AQS Objective


Queensland Avenue / Spon End Corridor
60
50
40
30
20
10
0
Annual Mean NO2 Concentration (µg/m3)
SE1
SE3
SE4
SE5
SE6
QAV01
QAV12
QAV13
Site Number
2016
2017
2018
2019
2020
AQS Objective


Holyhead Road
Annual Mean NO2 Concentration (µg/m3)
100
90
80
70
60
50
40
30
20
10
0
CC01/1*N
HR1
HR1C
HR2C
HR4
HR5
HR6
Site Number
2016
2017
2018
2019
2020
AQS Objective

Appendix B: Full Monthly Diffusion Tube Results for 2020

Table B.1 – NO_2 2020 Diffusion Tube Results ($\mu g/m^3$)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.81)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
CC01/1* N	432105	279578	**46.47**	38.11							35.19	35.50	**42.37**	38.22	39.31	25.15	24.3	
HR1	432683	279240	**61.00**	**48.94**							**53.21**	**51.63**	**55.77**	**47.11**	**52.94**	33.88	33.9	
HR1C	432712	279227	**90.08**	**69.36**							**73.05**	**78.25**	**64.06**	**61.77**	**72.76**	**46.56**	39.6	
HR2C	432525	279345	28.38	23.37							28.43	25.53	29.65	27.64	27.17	17.38	17.4	
HR4	432639	279258	**53.58**	33.19							34.26	36.93	37.38	34.34	38.28	24.50	24.5	
HR5	432730	279238	**55.52**	**44.48**							**51.33**	**48.59**	**46.29**	**44.49**	**48.45**	31.00	28.7	
HR6	432706	279228	**57.82**	**52.22**							**53.23**	**50.67**	**50.17**	**48.75**	**52.14**	33.37	33.4	
HR7	431434	279948									21.78	25.12	33.40	33.55	28.46	18.45	17.1	
UHS1	432844	279291									23.56	24.46	27.87	28.02	25.98	16.83	16.83	
CR1	432688	279455									28.60	26.96	34.69	31.02	30.32	19.64	19.64	
BH1a	434987	279209	**43.04**	38.20							34.60	37.19	38.47	36.25	37.96	24.29	23.6	
BH2b	435126	279284	**53.97**	39.15							**45.17**	**43.20**	**46.40**	**43.55**	**45.24**	28.95	27.4	
BH4	435331	279358	**48.91**	37.14							**48.50**	**44.14**	**46.54**	37.00	**43.71**	27.97	25.7	
BH13	435507	279387	**43.82**	36.19							29.40	31.75	39.09	34.30	35.76	22.88	22.9	
BH14	435655	279356	**40.94**	**43.50**							33.40	33.95	**41.75**	37.50	38.51	24.64	21.7	
BH15i	435184	279298	**45.89**	**47.01**							39.59	38.40	**40.48**	36.55	**41.32**	26.44	23.7	
FS1	433567	279234	**43.50**	**41.39**							**43.72**	**41.65**	23.55	**43.67**	39.58	25.33	24.5	
QV1	433029	278798	**50.15**	**41.55**							37.08	**42.32**	**42.81**	**48.66**	**43.76**	28.00	25.8	
GF1	433407	278882	39.69	30.60							30.76	32.35	33.61	34.76	33.63	21.52	21.5	
GS1	433899	278845	**44.30**	34.86							31.89	31.34	32.92	31.76	34.51	22.08	22.1	
NU1	433410	278682									32.24	32.91	34.40	33.11	33.16	21.49	21.49	
SP1	433399	278470									27.58	29.86	32.78	33.02	30.81	19.96	19.96	
SBW1	434297	279023									**45.34**	36.78	**45.87**	33.29	**40.32**	26.13	/	Tube for modelling purposes only
STL1	436203	275841	**42.47**	35.36							30.42	30.79	32.23	32.12	33.90	21.69	20.5	
LON8	436551	275703	34.40	31.58							25.32	26.20	27.10	24.16	28.13	18.00	18.0	
LON12	434073	278459	**57.84**	**48.56**							**42.14**	**41.13**	**40.21**	37.07	**44.49**	28.47	27.0	
SE1	432084	279042	**41.49**	31.01							34.19	34.78	39.76	36.05	36.21	23.17	22.3	
SE3	432303	279028	**42.82**	33.73							30.76	28.24	35.18	34.50	34.21	21.89	21.9	
SE4	432701	278716									39.79	36.12	**41.79**	**40.44**	39.54	25.62	/	Tube for modelling purposes only
SE5	432038	279033									29.26	27.48	33.78	34.73	31.31	20.29	20.29	
SE6	432016	279044									28.64	27.67	32.00	27.66	28.99	18.79	18.79	
QAV01	431595	278991	**44.25**	34.40							37.85	37.04		41.02	38.91	25.53	20.0	
QAV12	431704	278680	38.43	36.35							32.82	35.08	38.31	35.63	36.10	23.10	23.1	
QAV13	431763	278657	37.54	39.32							36.48	31.10	33.50	35.21	35.52	22.73	22.7	
R5	433716	280503	**40.63**	34.47							**41.51**	23.23	**45.07**	26.21	35.19	22.52	22.5	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.81)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
R6	433609	280246	**60.83**	**44.47**							**42.91**	**48.57**	**53.45**	**51.96**	**50.36**	32.23	30.0	
R8a	433991	280998	**47.14**	36.29								39.68	**46.95**	**42.62**	**42.54**	26.53	25.7	
R9	434059	281105	**44.78**	36.48							36.21	38.07	**44.00**	**40.62**	**40.03**	24.97	24.1	
LR1	434836	283030	39.68	37.01								35.85	**43.08**	39.92	39.11	24.39	24.4	
LR2	434880	283077	**44.32**	29.40							35.97	30.43	39.29	37.79	36.20	23.17	23.2	
LR3	435016	283515	34.70	38.73							37.90	**40.10**	**41.30**	39.53	38.71	24.77	24.8	
BRN2	433605	281965	**43.59**	34.73							33.39	31.51	38.82	39.11	36.86	23.59	23.6	
BRN5	433640	281996	**40.30**	30.32							32.56	31.95	37.56	36.35	34.84	22.30	22.3	
BA1	432526	280806	**40.63**	33.22							33.73	32.47	35.64	36.56	35.37	22.64	22.6	
SS1	434062	280082	**40.45**	31.66							35.04	30.45	35.83	38.20	35.27	22.57	22.6	
SS2	433994	279969	**42.37**	32.15							33.43	26.83	37.21	33.36	34.23	21.90	21.9	
SS3	434842	281272	**42.54**	36.04							36.91	34.96	38.22	38.54	37.87	24.23	24.2	
SS5	433852	279814	**54.86**	**41.56**							**46.22**	**41.27**	**45.01**	**45.69**	**45.77**	29.29	28.3	
BELL1	435849	282211	**46.81**	35.96							33.18	33.48	**40.24**	38.91	38.09	24.38	24.4	
BELL2	435826	282158	**42.72**	36.08							32.90	29.80	**40.71**	38.32	36.76	23.52	23.5	
FGS2	434450	279001	31.90	30.26							33.00	30.11	34.54	32.37	32.03	20.50	20.5	
FGS3A	434521	279024	36.26	32.04							34.79	31.00	33.95	31.00	33.17	21.23	21.2	
FGS4	434203	278892	**41.33**								34.75	31.28		36.43	35.95	23.00	23.0	
GR1	434679	278920	35.06	30.65							31.72	29.87	32.74	31.78	31.97	20.46	20.5	
Grange3	435791	284285	**42.01**	33.71							32.18	31.41	**42.71**	37.44	36.58	23.41	23.3	
SHP1	430447	277080	29.96	26.74							25.96	24.86	26.25	26.95	26.79	17.14	17.1	
SHP2	430364	277060	32.40	24.65							24.50	24.14	29.68	28.41	27.30	17.47	17.5	
SHP3	430567	277231	34.75	32.42							27.38	25.54	30.81	30.28	30.20	19.32	18.9	
RR1	433550	279478	38.64	29.89							34.67	32.71	38.17	38.07	35.36	22.63	/	Tube for modelling purposes only
RR2	433525	279502	39.29	28.60							35.87	29.72	36.23	**40.73**	35.07	22.44	/	Tube for modelling purposes only
RR3	433552	279524	**63.42**	**51.01**							**44.40**	**43.10**	**53.35**	**51.72**	**51.17**	32.74	/	Tube for modelling purposes only
RR4	433026	278572	**52.13**	**41.88**							32.12	35.76	**42.62**	**40.54**	**40.84**	26.13	/	Tube for modelling purposes only
RR5	432940	278620	32.37	31.95							34.22	30.37	29.24	42.16	33.39	21.36	/	Tube for modelling purposes only
SA1	427538	277397	27.57	20.97									25.54	28.50	25.65	15.37	13.5	
SA2	427624	277863	31.91	24.45							22.91	22.61	28.81	29.63	26.72	17.10	15.0	
SA4	427623	278116	31.74								21.09	21.09			24.64	16.57	16.4	
HL1	427249	279780	25.71	20.68							20.45	18.92	22.70	21.16	21.61	13.83	12.6	
BS1A	431927	282911	35.46	29.41							23.96	25.05	34.37	29.57	29.64	18.96	16.6	
KG1	431956	282113	**40.27**	30.53							27.04	28.70	37.83	35.85	33.37	21.35	18.4	
EB1	435928	283069	37.58	29.37							25.89	26.89	31.97	29.88	30.26	19.37	19.4	
MA1	432243	279980									34.47	32.78	39.16	38.85	36.32	23.53	22.7	
STM1	433019	275729											22.75	22.69	22.72	/		New tubes for new housing development
STM2	433158	274766											26.32	23.74	25.03	/		
GL1	432818	275321											20.07	5.49	12.78	/		

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

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16**

☒ **National bias adjustment factor used**

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

☒ **Coventry City Council confirms that all 2020 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System**

Notes:

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

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

See Appendix C for details on bias adjustment and annualisation.

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

New or Changed Sources Identified Within Coventry During 2020

10 additional tubes were located around the City to facilitate with the air quality modelling programme on-going as part of the work with JAQU.

3 additional tubes were located in the South of Coventry along the border with Warwick District Council in order to monitor levels of NO_2 for a housing development with planning permission.

Additional Air Quality Works Undertaken by Coventry City Council During 2020

Coventry City Council has not completed any additional works within the reporting year of 2020.

QA/QC of Diffusion Tube Monitoring

The test laboratory currently used by Coventry City Council is Gradko International Ltd. using the 20% TEA in water method of preparation. Gradko participates in the independent AIR-PT scheme operated by LGC Standards.

For the period January 2019 to October 2020 Gradko laboratory has had results which were determined to be 100% satisfactory:

AIR PT Round	AIR PT AR030	AIR PT AR031	AIR PT AR033	AIR PT AR034	AIR PT AR036	AIR PT AR037	AIR PT AR039	AIR PT AR040
Round conducted in the period	January – February 2019	April – May 2019	July – August 2019	September – November 2019	January – February 2020	May – June 2020	July – August 2020	September – October 2020
Aberdeen Scientific Services	75 %	100 %	100 %	100 %	100 %	NR [4]	NR [4]	100 %
Cardiff Scientific Services	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [4]	NR [4]	NR [3]
Edinburgh Scientific Services	100 %	NR [2]	100 %	25 %	50 %	NR [4]	NR [4]	100 %
SOCOTEC	87.5 % [1]	100 % [1]	100 % [1]	100 % [1]	100 % [1]	NR [4]	NR [4]	100 % [1]
Exova (formerly Clyde Analytical)	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [4]	NR [4]	NR [3]
Glasgow Scientific Services	100 %	100 %	100 %	50 %	100 %	NR [4]	NR [4]	100 %
Gradko International	75 %	100 %	100 %	100 %	75 %	NR [4]	NR [4]	75 %
Kent Scientific Services	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [4]	NR [4]	NR [3]
Kirklees MBC	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [4]	NR [4]	NR [3]
Lambeth Scientific Services	50 %	100 %	50 %	100 %	100 %	NR [4]	NR [4]	100 %
Milton Keynes Council	100 %	100 %	50 %	100 %	100 %	NR [4]	NR [4]	25 %
Northampton Borough Council	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [4]	NR [4]	NR [3]
Somerset Scientific Services	100 %	100 %	100 %	100 %	100 %	NR [4]	NR [4]	100 %
South Yorkshire Air Quality Samplers	100 %	100 %	100 %	75 %	100 %	NR [4]	NR [4]	100 %
Staffordshire County Council	100 %	75 %	75 %	75 %	100 %	NR [4]	NR [4]	50 %
Tayside Scientific Services (formerly Dundee CC)	100 %	NR [2]	100 %	NR [2]	100 %	NR [4]	NR [4]	100 %
West Yorkshire Analytical Services	100 %	100 %	100 %	50 %	100 %	NR [4]	NR [4]	NR [2]

The monitoring has been completed in adherence with the 2020 Diffusion Tube Monitoring Calendar.

Diffusion Tube Annualisation

Diffusion tube results which have a capture rate of less than 75% but greater than 25% have been annualised following the guidance in LAQM TG16. Results from diffusion tubes with less than 25% capture rate have been recorded in table B1 as raw data but have been excluded from further processing or analysis.

An example of the calculation for tube Grange 3 is given below:

												Raw Ave
Grange 3												33.60951
	April	May	July	Aug	Sept	Oct	Nov	Dec	Period Mean	Annual Mean	Ratio (AM/PM)	
Coventry Allesley	16	16	14	14	16	21	27	26	17	20	1.176471	
Coventry Binley Rd	30	28	25	24	28	31	36	34	27.66666667	31	1.120482	
nottingham Centre	25	23	19	19	24	28	35	34	23.66666667	28	1.183099	
Birmingham Acocks Green	21	15	11	12	14	20	26	19	15.33333333	18	1.173913	Annualised
										AVERAGE	1.163491	39.10436

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2020 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under

or over-read relative to the reference chemiluminescence analyser. LAQM.TG16 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Coventry City Council have applied a national bias adjustment factor of 0.81 to the 2020 monitoring data. A summary of bias adjustment factors used by Coventry City Council over the past five years is presented in Table C.1.

The bias adjustment figure for 2020 was taken from the October 2021 version of the National Diffusion Tube Bias Adjustment Factor spreadsheet, as Coventry no longer has any automatic monitoring data. There were a total of 27 studies that contributed and therefore the adjustment factor of 0.81 is thought to be representative.

National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 09/21

Follow the steps below in the correct order to show the results of relevant co-location studies
Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods
Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet
This spreadsheet will be updated every few months: the factors may therefore be subject to change. This should not discourage their immediate use.

This spreadsheet will be updated at the end of March 2022
LAQM Helpdesk Website

The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.

Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.

Step 1: Select the Laboratory that Analyses Your Tubes from the Drop-Down List. If a laboratory is not shown, we have no data for this laboratory.

Step 2: Select a Preparation Method from the Drop-Down List. If a preparation method is not shown, we have no data for this method at this laboratory.

Step 3: Select a Year from the Drop-Down List. If a year is not shown, we have no data.

Step 4: Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor shown in blue at the foot of the final column.

If you have your own co-location study then see footnote. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953

Analysed By	Method (To undo your selection, choose (All) from the pop-up list)	Year (To undo your selection, choose (All))	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m³)	Automatic Monitor Mean Conc. (Cm) (µg/m³)	Bias (B)	Tube Precision	Bias Adjustment Factor (A) (Cm/Dm)
Gradko	20% TEA in water	2020	R	Gedling Borough Council	10	31	25	24.1%	G	**0.81**
Gradko	20% TEA in water	2020	R	SOUTHAMPTON CITY COUNCIL	12	37	27	37.1%	G	**0.73**
Gradko	20% TEA in water	2020	R	Fareham Borough Council	10	25	14	77.4%	G	**0.56**
Gradko	20% TEA in water	2020	R	Fareham Borough Council	12	30	22	35.1%	G	**0.74**
Gradko	20% TEA in water	2020	R	Fareham Borough Council	10	22	17	26.5%	G	**0.79**
Gradko	20% TEA in water	2020	R	SOUTHAMPTON CITY COUNCIL	11	32	31	4.9%	G	**0.95**
Gradko	20% TEA in water	2020	KS	Marylebone Road Intercomparison	12	57	43	33.3%	G	**0.75**
Gradko	20% TEA in water	2020	R	Bath & North East Somerset	11	32	29	13.0%	G	**0.89**
Gradko	20% TEA in water	2020	R	Gateshead Council	12	22	17	28.1%	G	**0.78**
Gradko	20% TEA in water	2020	R	Gateshead Council	12	23	21	11.6%	G	**0.90**
Gradko	20% TEA in water	2020	R	Gateshead Council	10	26	25	6.5%	G	**0.94**
Gradko	20% TEA in water	2020	R	Gateshead Council	12	28	21	30.5%	G	**0.77**
Gradko	20% TEA in water	2020	R	Gateshead Council	12	31	32	-3.4%	G	**1.03**
Gradko	20% TEA in water	2020	R	Luton Borough Council	9	38	28	33.8%	G	**0.75**
Gradko	20% TEA in water	2020	R	Nottingham City Council	12	31	34	-8.5%	G	**1.09**
Gradko	20% TEA in water	2020	R	Dudley MBC	13	33	28	19.9%	G	**0.83**
Gradko	20% TEA in water	2020	UB	Dudley MBC	13	23	14	61.2%	G	**0.62**
Gradko	20% TEA in water	2020	R	Dudley MBC	13	44	34	30.6%	G	**0.77**
Gradko	20% TEA in water	2020	R	Ards and North Down Borough Council	10	27	20	34.0%	G	**0.75**
Gradko	20% TEA in water	2020	R	Belfast City Council	10	26	21	22.8%	G	**0.81**
Gradko	20% TEA in water	2020	R	Belfast City Council	10	41	36	12.6%	G	**0.89**
Gradko	20% TEA in water	2020	R	Belfast City Council	10	36	25	43.9%	G	**0.69**
Gradko	20% TEA in water	2020	R	Lancaster City Council	11	27	23	19.9%	G	**0.83**
Gradko	20% TEA in water	2020	R	Lancaster City Council	10	32	28	13.0%	G	**0.89**
Gradko	20% TEA in water	2020	R	Eastleigh Borough Council	9	23	20	13.6%	G	**0.88**
Gradko	20% TEA in water	2020	UB	Eastleigh Borough Council	9	22	19	17.9%	G	**0.85**
Gradko	20% TEA in water	2020	R	Lisburn & Castlereagh City Council	10	23	18	32.5%	G	**0.75**
Gradko	20% TEA in water	2020		**Overall Factor (27 studies)**				**Use**		**0.81**

Figure C1: A screenshot of the National Diffusion Tube Bias Adjustment Factor spreadsheet, showing the laboratory, preparation method and factor used

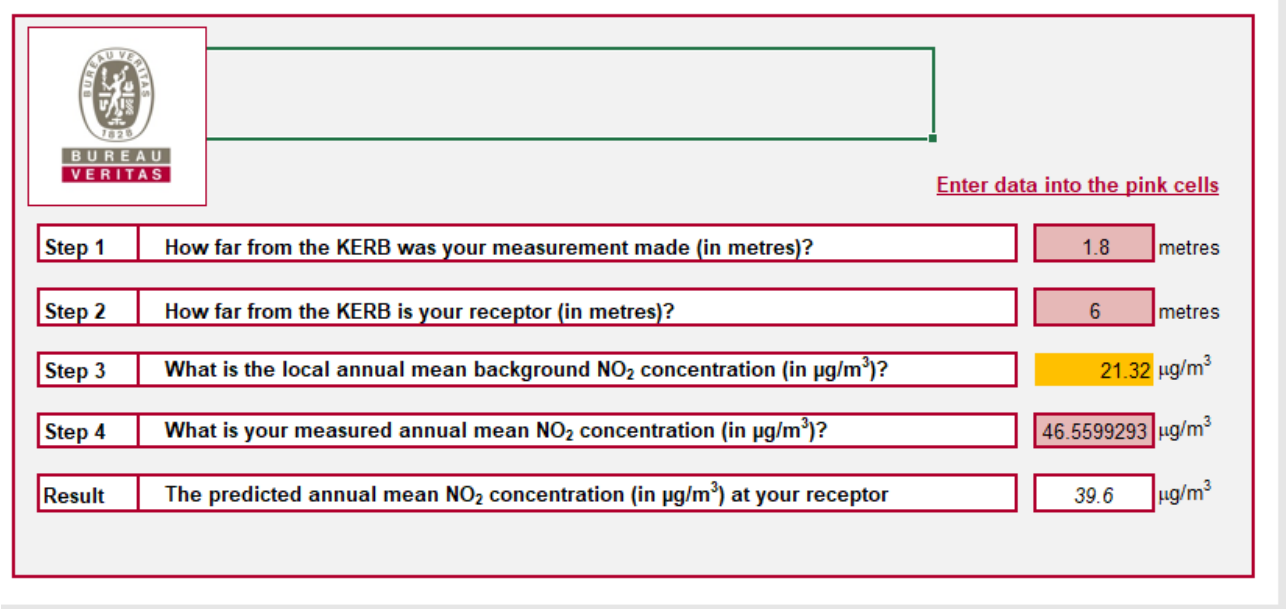
Table C.1 – Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2020	National	09/21	0.81
2019	National	03/20	0.92
2018	National	06/19	0.92
2017	National	06/18	0.87
2016	National	03/17	0.94

NO_2 Fall-off with Distance from the Road

Diffusion tubes that are not representative of a relevant exposure have been distance corrected using the NO_2 fall-off with distance calculator available on the LAQM website in-line with the guidance in LAQM TG16.

For example, for the tube HR1c, the following calculation was undertaken:



The 2020 background value for each km grid square was obtained from the Estimated Background Air Pollution Maps (base year 2017), downloaded from https://uk-air.defra.gov.uk/data/laqm-background-home

Table C.2 – Annualisation Summary (concentrations presented in µg/m^3)

Site ID	Annualisation Factor Coventry Allesley	Annualisation Factor Coventry Binley Rd	Annualisation Factor Nottingham Centre	Annualisation Factor Birmingham Acocks Green	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
CC01*/1N	0.78	0.83	0.78	0.78	0.79	39.31	31.06	Months missed due to Covid-19 lockdown
HR1	0.78	0.83	0.78	0.78	0.79	**52.94**	**41.82**	
HR1c	0.78	0.83	0.78	0.78	0.79	**72.76**	**57.48**	
HR2c	0.78	0.83	0.78	0.78	0.79	27.17	21.46	
HR4	0.78	0.83	0.78	0.78	0.79	38.28	30.24	
HR5	0.78	0.83	0.78	0.78	0.79	**48.45**	38.28	
HR6	0.78	0.83	0.78	0.78	0.79	**52.14**	**41.19**	
HR7	0.81	0.84	0.82	0.74	0.80	28.46	22.77	New tube added September
UHS1	0.81	0.84	0.82	0.74	0.80	25.98	20.78	New tube added September
CR1	0.81	0.84	0.82	0.74	0.80	30.32	24.25	New tube added September
BH1a	0.78	0.83	0.78	0.78	0.79	37.96	29.99	
BH2b	0.78	0.83	0.78	0.78	0.79	**45.24**	35.74	
BH4	0.78	0.83	0.78	0.78	0.79	**43.71**	34.53	
BH13	0.78	0.83	0.78	0.78	0.79	35.76	28.25	
BH14	0.78	0.83	0.78	0.78	0.79	38.51	30.42	
BH15i	0.78	0.83	0.78	0.78	0.79	**41.32**	32.64	
FS1	0.78	0.83	0.78	0.78	0.79	39.58	31.27	
QV1	0.78	0.83	0.78	0.78	0.79	**43.76**	34.57	
GF1	0.78	0.83	0.78	0.78	0.79	33.63	26.57	
GS1	0.78	0.83	0.78	0.78	0.79	34.51	27.26	
NU1	0.81	0.84	0.82	0.74	0.80	33.16	26.53	New tube added September
SP1	0.81	0.84	0.82	0.74	0.80	30.81	24.65	New tube added September
SBW1	0.81	0.84	0.82	0.74	0.80	**40.32**	32.25	New tube added September
STL1	0.78	0.83	0.78	0.78	0.79	33.90	26.78	
LON8	0.78	0.83	0.78	0.78	0.79	28.13	22.22	
LON12	0.78	0.83	0.78	0.78	0.79	**44.49**	35.15	
SE1	0.78	0.83	0.78	0.78	0.79	36.21	28.61	
SE3	0.78	0.83	0.78	0.78	0.79	34.21	27.02	
SE4	0.81	0.84	0.82	0.74	0.80	39.54	31.63	New tube added September
SE5	0.81	0.84	0.82	0.74	0.80	31.31	25.05	New tube added September
SE6	0.81	0.84	0.82	0.74	0.80	28.99	23.19	New tube added September
QAV01	0.80	0.84	0.79	0.82	0.81	38.91	31.52	
QAV12	0.78	0.83	0.78	0.78	0.79	36.10	28.52	

Site ID	Annualisation Factor Coventry Allesley	Annualisation Factor Coventry Binley Rd	Annualisation Factor Nottingham Centre	Annualisation Factor Birmingham Acocks Green	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
QAV13	0.78	0.83	0.78	0.78	0.79	35.52	28.06	
R5	0.78	0.83	0.78	0.78	0.79	35.19	27.80	
R6	0.78	0.83	0.78	0.78	0.79	**50.36**	39.79	
R8a	0.75	0.82	0.75	0.77	0.77	**42.54**	32.75	
R9	0.78	0.83	0.78	0.78	0.79	**40.03**	31.62	
LR1	0.75	0.82	0.75	0.77	0.77	39.11	30.11	
LR2	0.78	0.83	0.78	0.78	0.79	36.20	28.60	
LR3	0.78	0.83	0.78	0.78	0.79	38.71	30.58	
BRN2	0.78	0.83	0.78	0.78	0.79	36.86	29.12	
BRN5	0.78	0.83	0.78	0.78	0.79	34.84	27.52	
BA1	0.78	0.83	0.78	0.78	0.79	35.37	27.95	
SS1	0.78	0.83	0.78	0.78	0.79	35.27	27.87	
SS2	0.78	0.83	0.78	0.78	0.79	34.23	27.04	
SS3	0.78	0.83	0.78	0.78	0.79	37.87	29.92	
SS5	0.78	0.83	0.78	0.78	0.79	**45.77**	36.16	
BELL1	0.78	0.83	0.78	0.78	0.79	38.09	30.09	
BELL2	0.78	0.83	0.78	0.78	0.79	36.76	29.04	
FGS2	0.78	0.83	0.78	0.78	0.79	32.03	25.30	
FGS3A	0.78	0.83	0.78	0.78	0.79	33.17	26.20	
FGS4	0.78	0.83	0.78	0.77	0.79	35.95	28.40	
GR1	0.78	0.83	0.78	0.78	0.79	31.97	25.26	
Grange3	0.78	0.83	0.78	0.78	0.79	36.58	28.90	
SHP1	0.78	0.83	0.78	0.78	0.79	26.79	21.16	
SHP2	0.78	0.83	0.78	0.78	0.79	27.30	21.56	
SHP3	0.78	0.83	0.78	0.78	0.79	30.20	23.85	
RR1	0.78	0.83	0.78	0.78	0.79	35.36	27.93	
RR2	0.78	0.83	0.78	0.78	0.79	35.07	27.71	
RR3	0.78	0.83	0.78	0.78	0.79	**51.17**	**40.42**	
RR4	0.78	0.83	0.78	0.78	0.79	**40.84**	32.26	
RR5	0.78	0.83	0.78	0.78	0.79	33.39	26.37	
SA1	0.71	0.92	0.69	0.64	0.74	25.65	18.98	
SA2	0.78	0.83	0.78	0.78	0.79	26.72	21.11	
SA4	0.83	0.84	0.81	0.83	0.83	24.64	20.45	
HL1	0.78	0.83	0.78	0.78	0.79	21.61	17.07	
BS1A	0.78	0.83	0.78	0.78	0.79	29.64	23.41	

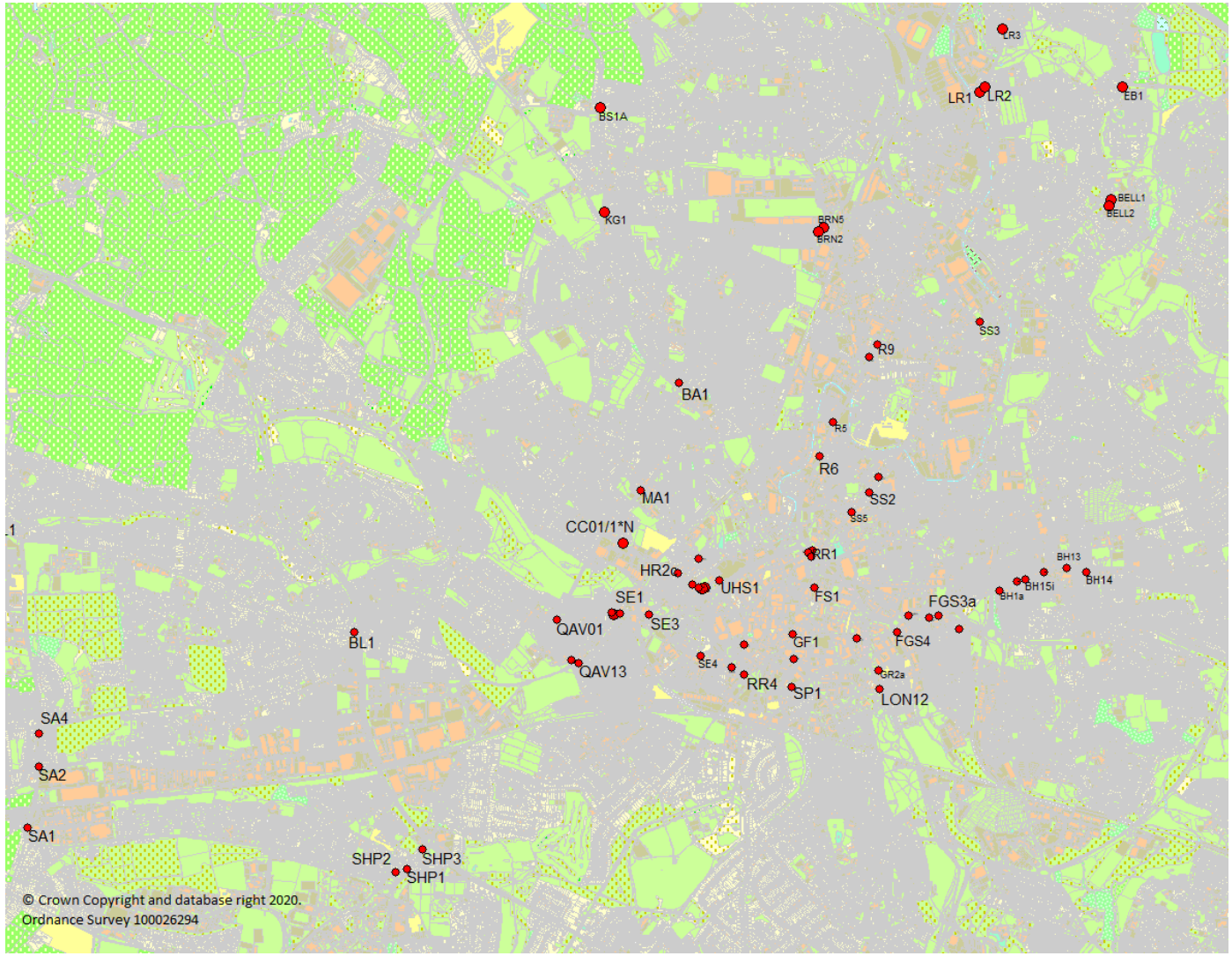
Site ID	Annualisation Factor Coventry Allesley	Annualisation Factor Coventry Binley Rd	Annualisation Factor Nottingham Centre	Annualisation Factor Birmingham Acocks Green	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
KG1	0.78	0.83	0.78	0.78	0.79	33.37	26.36	
EB1	0.78	0.83	0.78	0.78	0.79	30.26	23.91	
MA1	0.81	0.84	0.82	0.74	0.80	36.32	29.05	New tube added September

Table C.3 – NO_2 Fall off With Distance Calculations (concentrations presented in µg/m^3)

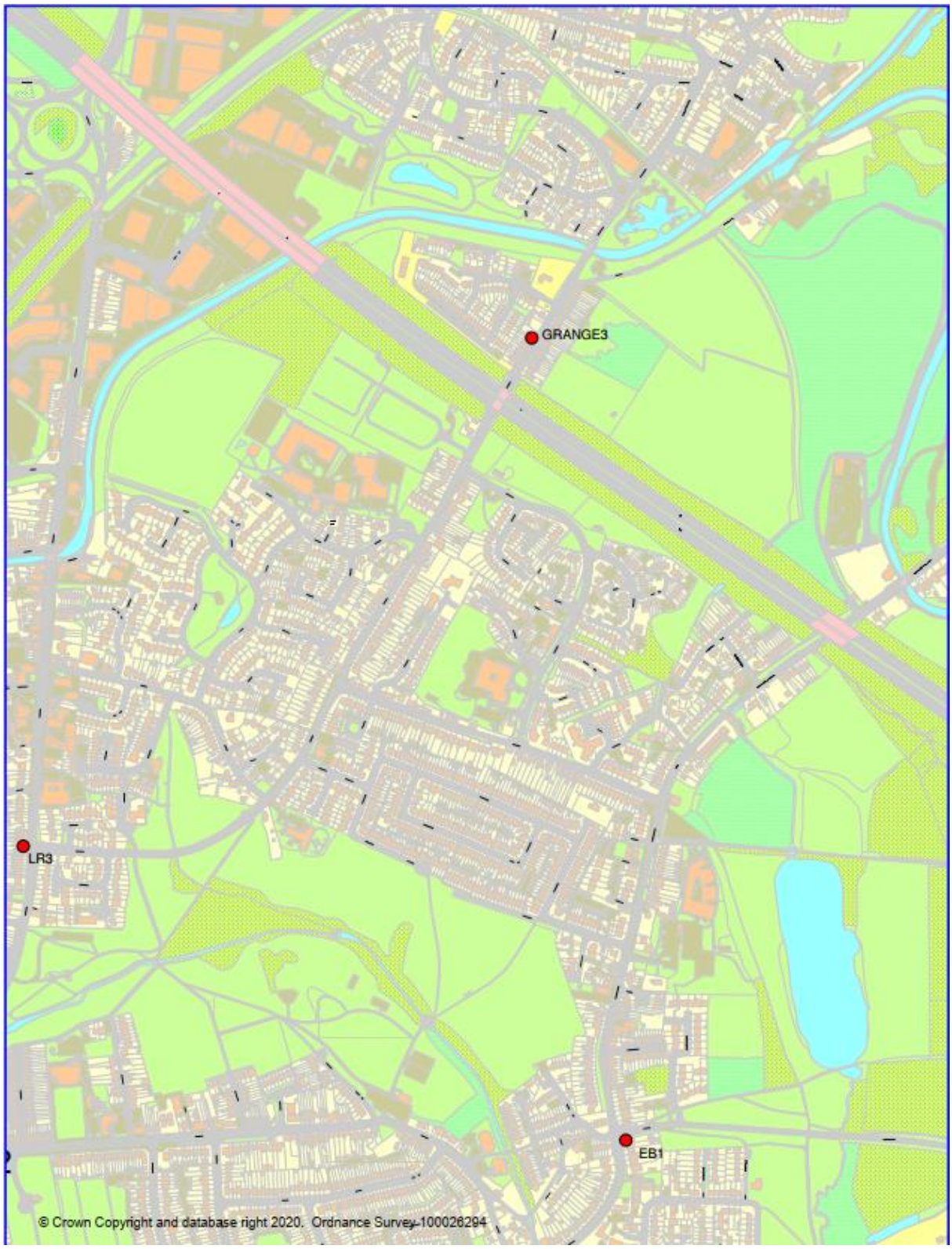
Site ID	Distance (m): Monitoring Site to Kerb	Distance (m): Receptor to Kerb	Monitored Concentration (Annualised and Bias Adjusted	Background Concentration	Concentration Predicted at Receptor	Comments
CC01*/1N	3.1	7.2	25.15	21.32	24.3	Tubes with less than 36 µg/m^3 NO_2 have been distance corrected in order to facilitate on-going trend analysis
HR1c	1.8	6.0	**46.56**	21.32	39.6	
HR5	1.8	5.0	31.00	21.32	28.7	
HR7	2.1	17.0	18.45	15.82	17.1	
BH1a	2.93	5.83	24.29	20.26	23.6	
BH2b	3.1	5.1	28.95	17.37	27.4	
BH4	1.3	3.5	27.97	17.37	25.7	
BH14	1.6	9.6	24.64	17.37	21.7	
BH15i	1.0	4.5	26.44	17.37	23.7	
FS1	1.0	4.9	25.33	22.67	24.5	
QV1	1.95	4.07	28.00	15.37	25.8	
STL1	12.0	21.0	21.69	16.52	20.5	
LON12	2.0	4.0	28.47	19.31	27.0	
SE1	0.1	2.7	23.17	21.32	22.3	
QAV01	0.1	5.3	25.53	15.37	20.0	
R6	2.05	4.25	32.23	19.00	30.0	
R8a	1.65	2.76	26.53	19.00	25.7	
R9	3.07	4.9	24.97	18.26	24.1	
SS5	2.0	3.8	29.29	22.67	28.3	
Grange3	0.3	1.74	23.41	22.91	23.3	
SHP3	4.6	8.76	19.32	16.88	18.9	
SA1	1.6	11.3	15.37	11.11	13.5	
SA2	2.5	10.2	17.10	11.11	15.0	
SA4	6.0	6.5	16.57	11.33	16.4	
HL1	1.1	7.8	13.83	10.74	12.6	
BS1A	3.4	12.1	18.96	12.02	16.6	
KG1	2.7	9.4	21.35	12.02	18.4	
MA1	1.6	9.0	23.53	21.32	22.7	

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

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

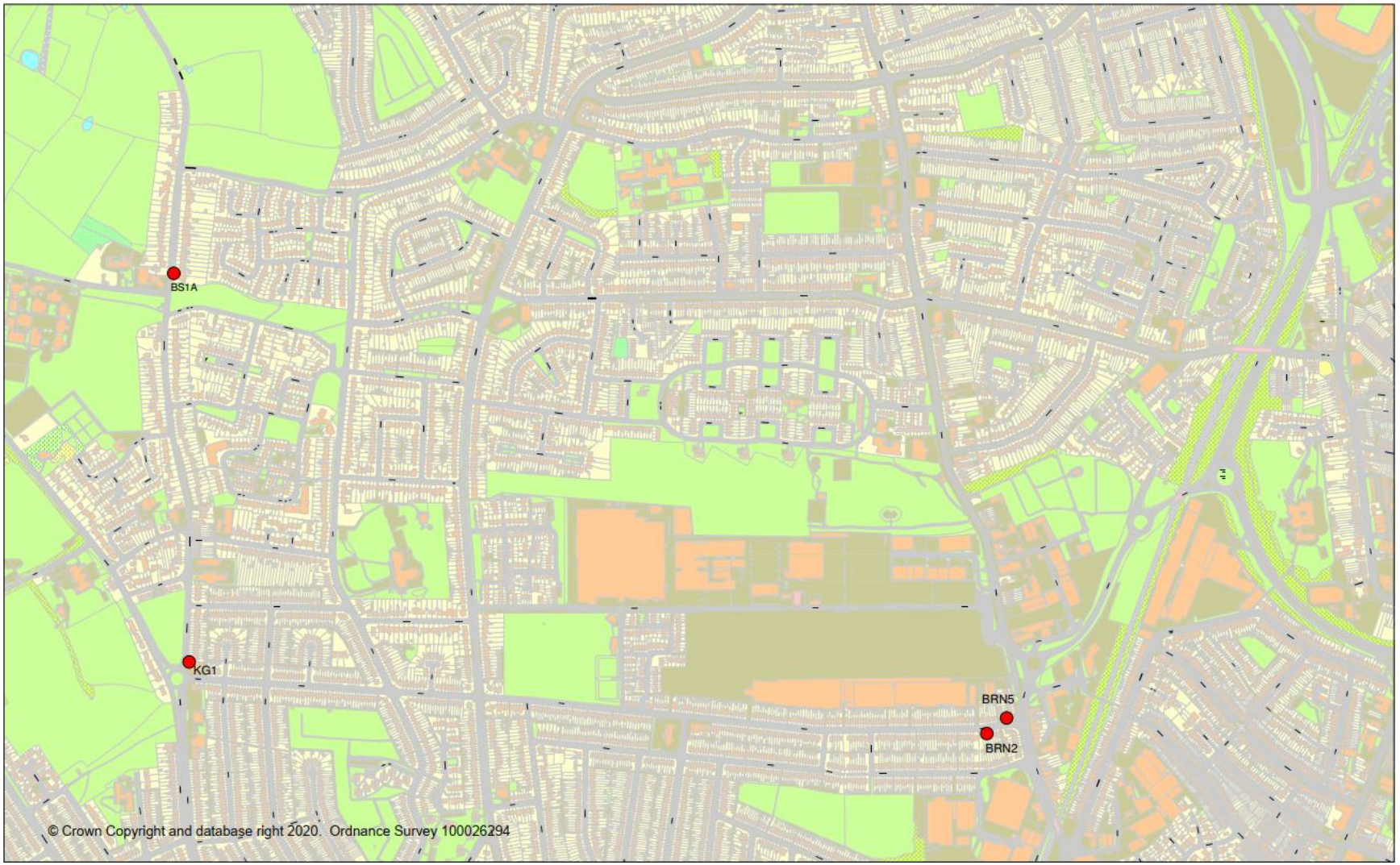


Tubes Grange3, EB1 and LR3



Tubes EB1, BELL1 and BELL2

Tubes BS1A, KG1 and BRN

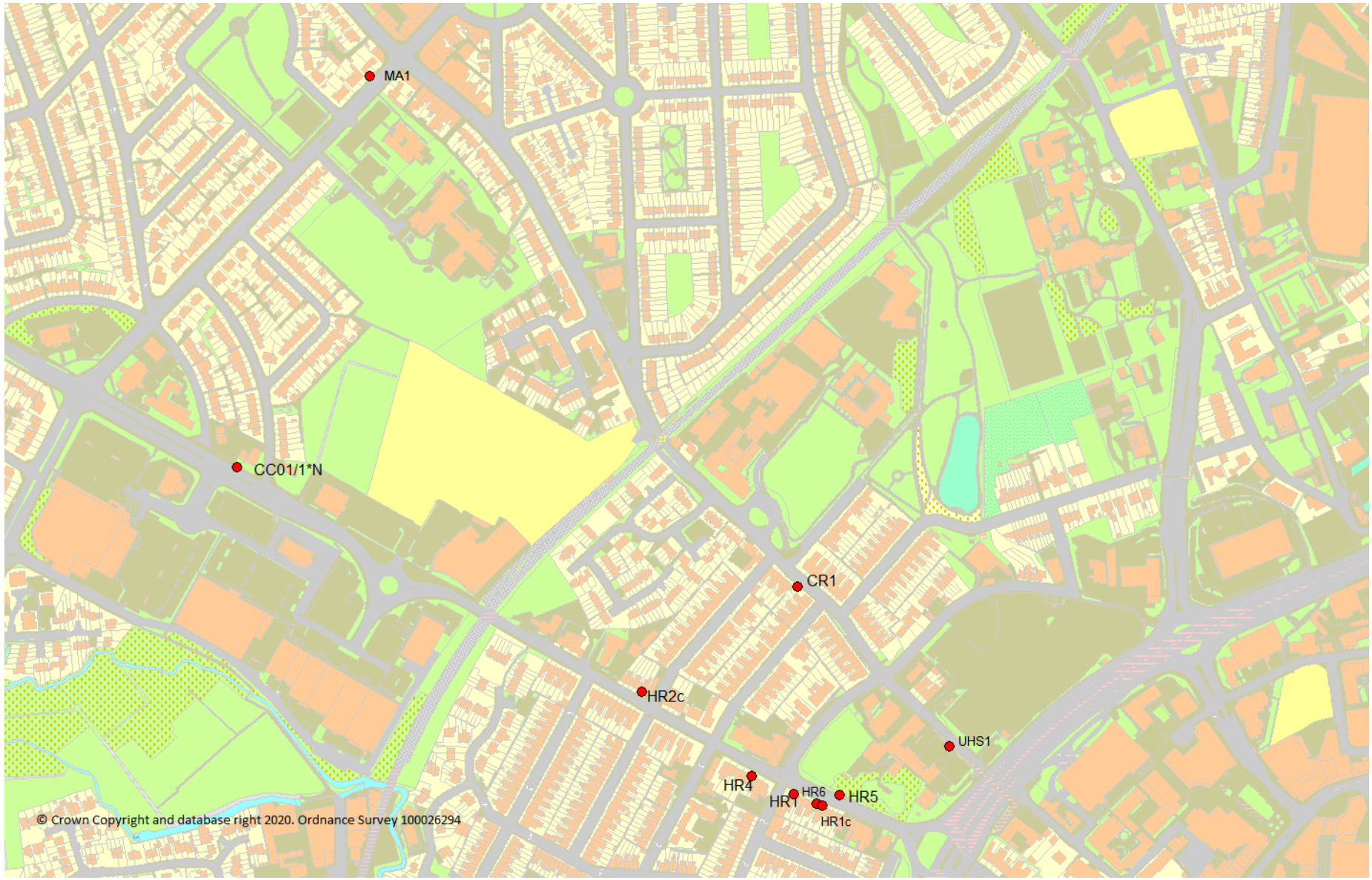


Foleshill Road / Longford Road Tubes

Stoney Stanton Road Tubes

Burnaby Road and Beake Avenue Tubes

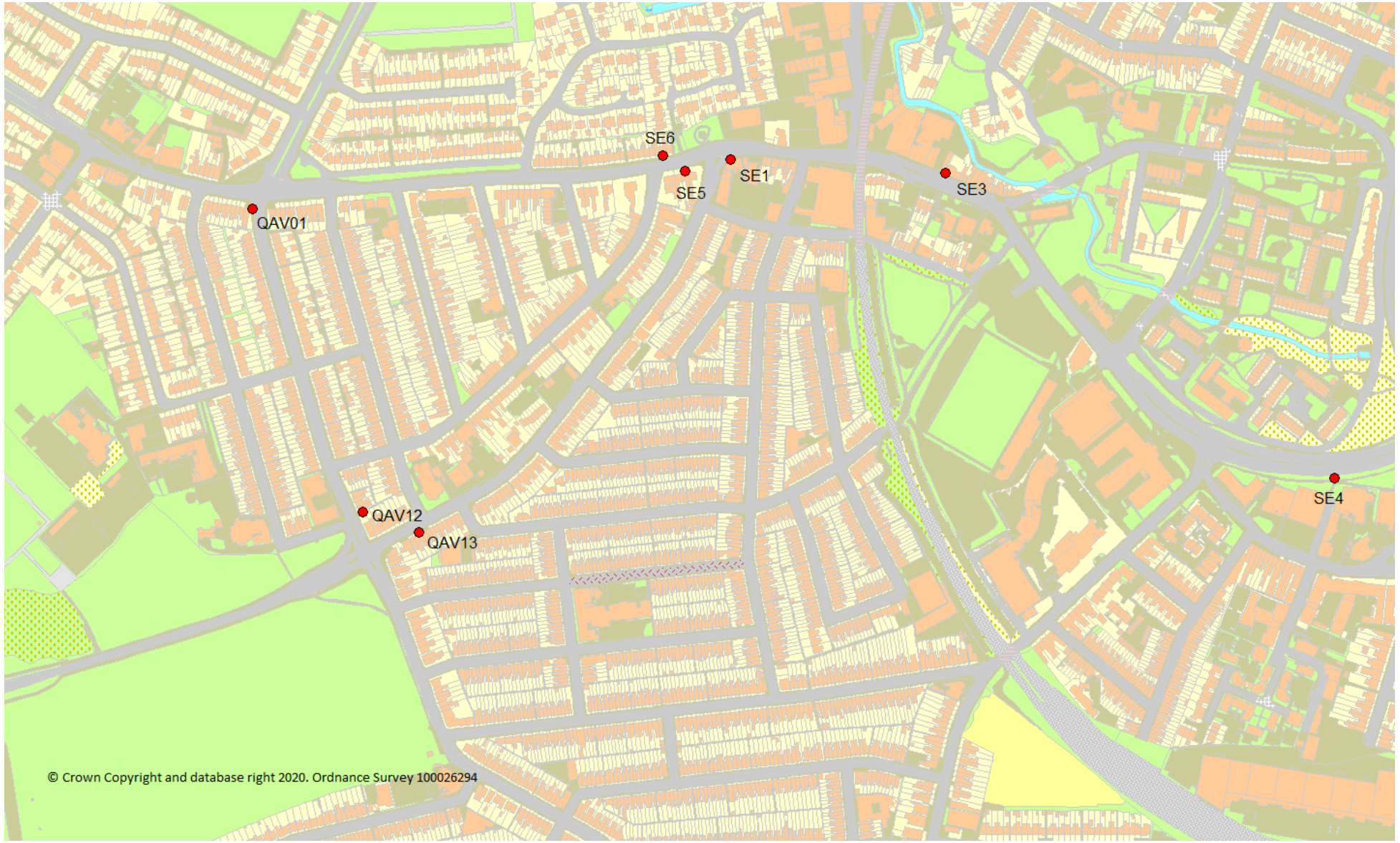
Holyhead Road and Moseley Avenue tubes



City Centre and RR4 & RR5

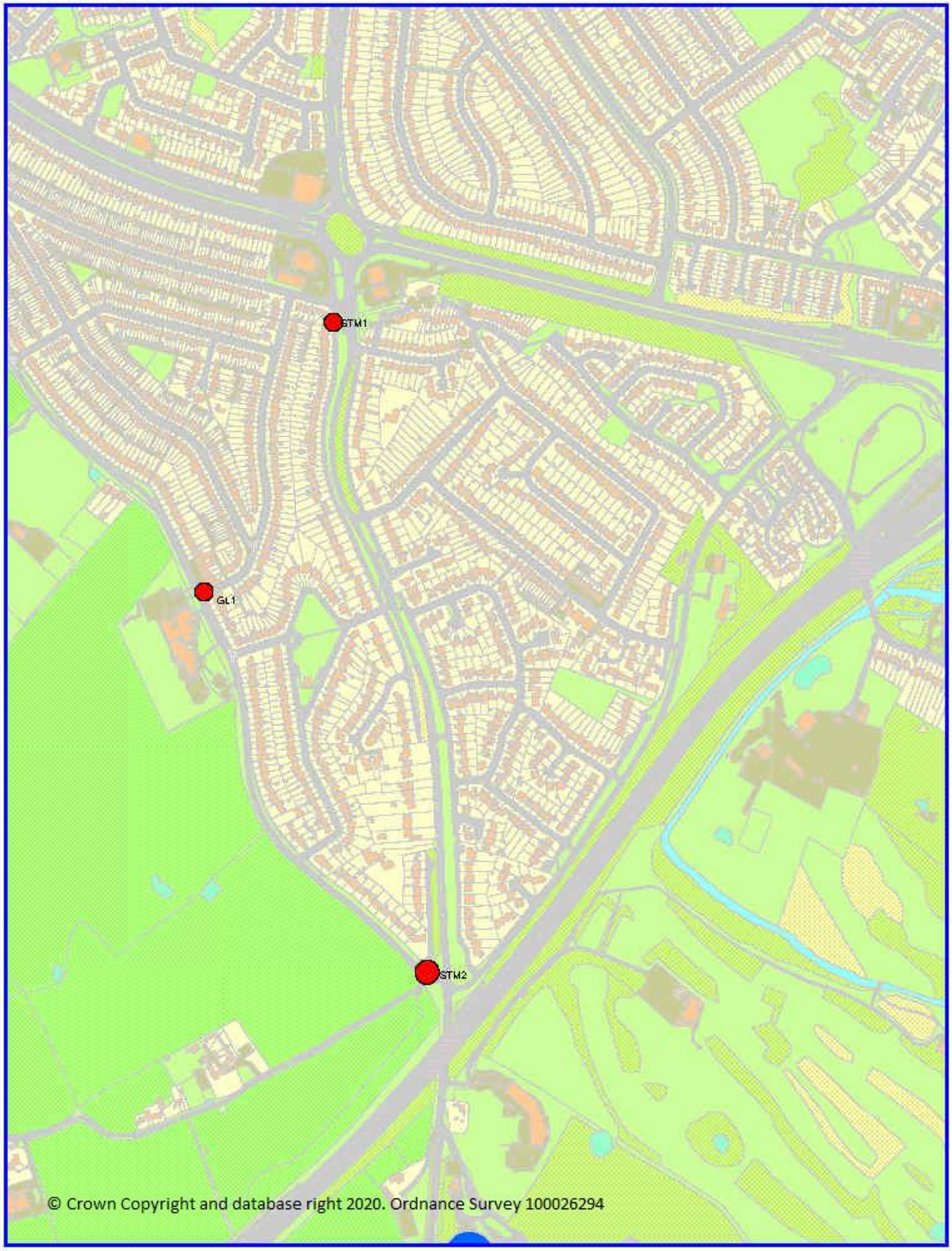
Far Gosford Street and City Centre Tubes

Queensland Avenue / Spon End tubes



Sir Henry Parkes Road Tubes

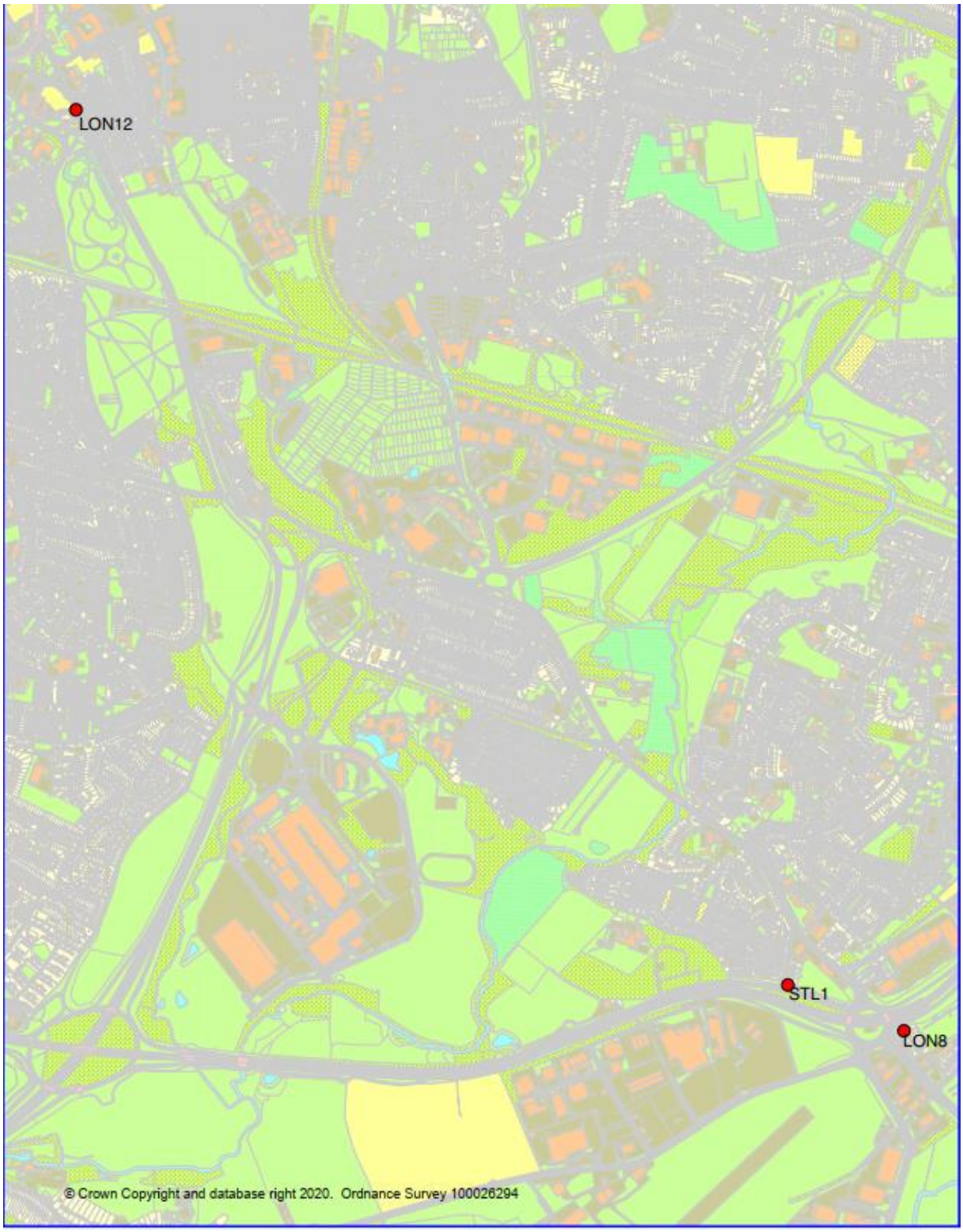
St. Martin’s Road and Green Lane Tubes



Station Avenue Tubes

Ball Hill Tubes

London Road Tubes



Hockley Lane Tube

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[7]

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

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

Appendix F: Impact of COVID-19 upon LAQM

COVID-19 has had a significant impact on society. Inevitably, COVID-19 has also had an impact on the environment, with implications to air quality at local, regional and national scales.

COVID-19 has presented various challenges for Local Authorities with respect to undertaking their statutory LAQM duties in the 2021 reporting year. Recognising this, Defra provided various advice updates throughout 2020 to English authorities, particularly concerning the potential disruption to air quality monitoring programmes, implementation of Air Quality Action Plans (AQAPs) and LAQM statutory reporting requirements. Defra has also issued supplementary guidance for LAQM reporting in 2021 to assist local authorities in preparing their 2021 ASR. Where applicable, this advice has been followed.

Despite the challenges that the pandemic has given rise to, the events of 2020 have also provided Local Authorities with an opportunity to quantify the air quality impacts associated with wide-scale and extreme intervention, most notably in relation to emissions of air pollutants arising from road traffic. The vast majority (>95%) of AQMAs declared within the UK are related to road traffic emissions, where attainment of the annual mean objective for nitrogen dioxide (NO_2) is considered unlikely. On 23rd March 2020, the UK Government released official guidance advising all members of public to stay at home, with work-related travel only permitted when absolutely necessary. During this initial national lockdown (and to a lesser extent other national and regional lockdowns that followed), marked reductions in vehicle traffic were observed; Department for Transport (DfT) data[8] suggests reductions in vehicle traffic of up to 70% were experienced across the UK by mid-April, relative to pre COVID-19 levels.

This reduction in travel in turn gave rise to a change of air pollutant emissions associated with road traffic, i.e. nitrous oxides (NO_x), and exhaust and non-exhaust particulates (PM). The Air Quality Expert Group (AQEG)[9] has estimated that during the initial lockdown period in 2020, within urbanised areas of the UK reductions in NO_2 annual mean concentrations were between 20 and 30% relative to pre-pandemic levels, which

[8] Prime Minister's Office, COVID-19 briefing on the 31st of May 2020

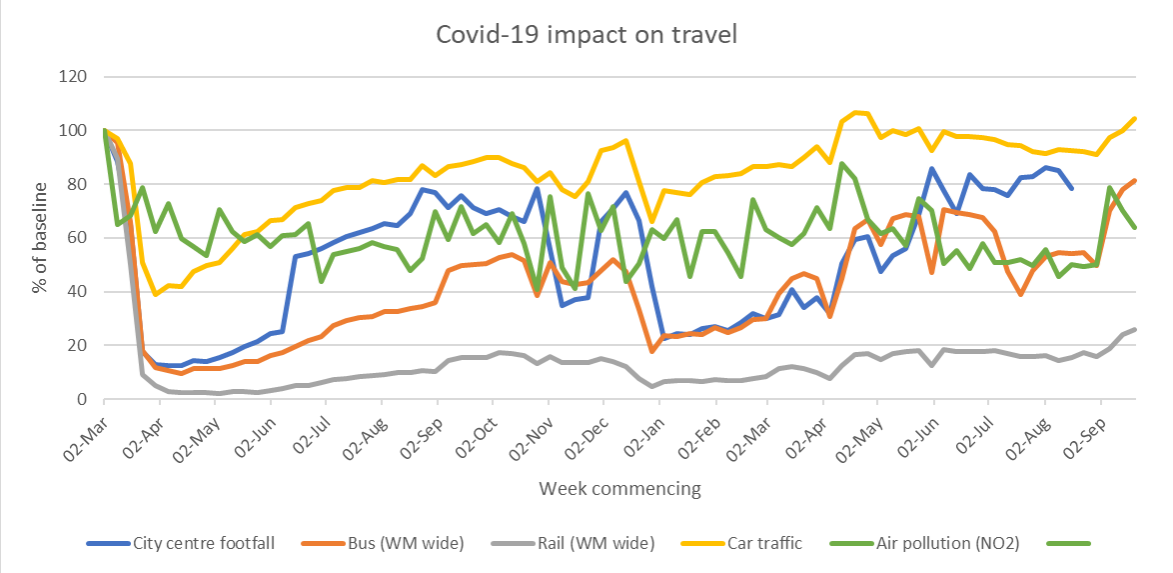
[9] Air Quality Expert Group, Estimation of changes in air pollution emissions, concentrations and exposure during the COVID-19 outbreak in the UK, June 2020

represents an absolute reduction of between 10 to 20µg/m^3 if expressed relative to annual mean averages. During this period, changes in $PM_{2.5}$ concentrations were less marked than those of NO_2. $PM_{2.5}$ concentrations are affected by both local sources and the transport of pollution from wider regions, often from well beyond the UK. Through analysis of AURN monitoring data for 2018-2020, AQEG have detailed that $PM_{2.5}$ concentrations during the initial lockdown period are of the order 2 to 5µg/m^3 lower relative to those that would be expected under business-as-usual conditions.

As restrictions are gradually lifted, the challenge is to understand how these air quality improvements can benefit the long-term health of the population.

Impacts of COVID-19 on Air Quality within Coventry

- If early March 2020 is considered a typical traffic scenario (100%), traffic steadily dropped at the end of March and into April to approx. 40-45% of typical levels. It then steadily increased throughout the year, with another slight drop in November 2020, but not quite making it back to a 'typical' pre-Covid level. Subsequently, NO_2 levels dropped accordingly. This can be clearly seen in the graph below:



Opportunities Presented by COVID-19 upon LAQM within Coventry

- Council employees have been working from home since the pandemic. The development of suitable technology to facilitate this means that this can continue

permanently, thereby reducing vehicle trips into the centre of Coventry. **Small impact**

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

- During 2020, access to a number of diffusion tube monitoring sites was restricted due to their locations on residential buildings. Therefore, it was not possible to maintain diffusion tube exposure periods for March to July in line with the national monitoring calendar for a number of sites. This has affected data capture within 2020, resulting in monitoring sites having to be annualised. **Medium Impact**
- Gradko laboratory was closed during lockdown and therefore no analysis of diffusion tubes was possible. **Medium impact**.
- Work continued developing and partially implementing the LAQAP throughout Covid. Public consultation on the measures was due to commence in March 2020, which was significantly impacted by Covid, and resulted in an extended online consultation. Detailed survey and design work commenced in 2020 once restrictions were lifted, and construction of part of the plan (Coundon Cycleway) commenced at the end of November 2020. The LAQAP was finally signed off by the SoS / JAQU May 2021. Medium impact.

The impacts as presented above are aligned with the criteria as defined in Table F 1, with professional judgement considered as part of their application.

Table F 1 – Impact Matrix

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

Glossary of Terms

Abbreviation	Description
µg/m^3	Micrograms per cubic metre
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Annual Status Report
AURN	Automatic Urban and Rural Network
CCC	Coventry City Council
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
JAQU	(Defra) Joint Air Quality Unit
LAQAP	Local Air Quality Action Plan
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM	Particulate Matter
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
SPD	Supplementary Planning Document
TfWM	Transport for West Midlands
TG16/PG16	Defra Technical Guidance/Policy Guidance 2016
QA/QC	Quality Assurance and Quality Control
SO_2	Sulphur Dioxide
WMCA	West Midlands Combined Authority

References

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