GMCA GREATER MANCHESTER COMBINED AUTHORITY

2020 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

Date: June, 2021

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Executive Summary: Air Quality in Our Area

In 2020, due to the COVID-19 pandemic, Greater Manchester was subject to a series of lockdowns. The resulting lower levels of traffic during these periods has had a fundamental impact on the annual mean concentrations that are published in this year's ASR. The impact of COVID on Local Air Quality Management is detailed in Appendix F, but there is significant mention of the pandemic at all points throughout the report.

Air Quality in Greater Manchester

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 health 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].

Air pollution contributes to the equivalent of between 28,000 and 36,000 deaths each year in the UK[3], with a total estimated healthcare cost to the NHS and social care of £157 million in 2017[4].

Greater Manchester has a population of more than 2.7 million residents over an area of approximately 500 square miles. Within the conurbation there is a mix of high-density urban areas, suburbs, semi-rural and rural locations, and the area is characterised by the strong regional centre of Manchester, Salford Quays and Trafford Park. Particulate air pollution in Greater Manchester annually contributes to the equivalent of approximately 1,111 deaths.[5]

Long-term trends show that there has been a gradual improvement in air quality. In addition, the 2020 lockdown measures in place across Greater Manchester and the rest of the UK due to the COVID-19 pandemic resulted in dramatic reductions in NO_2 and PM_{10} emissions.[6]

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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

[5] Public Health England, Public Health Outcomes Framework

[6] More detail on specific lockdown measures across Greater Manchester in 2020 is provided in Appendix F.

In 2020, for the first time, no automatic monitoring sites in Greater Manchester measured an exceedance of the NO_2 annual mean objective. The Manchester Oxford Road automatic monitoring site recorded the highest annual mean concentration (36µg/m³) in the city-region, down from 59µg/m³ in 2019. Three sites out of the 17 in Greater Manchester either exceeded or measured the NO_2 annual mean objective of 40µg/m^3 in 2019. These sites were Salford M60, Manchester Oxford Road and Tameside Mottram Moor. The 1-hour mean objective for NO_2 (200µg/m³ not to be exceeded more than 18 times a year) has not been exceeded in Greater Manchester since 2016, at the Manchester Oxford Road monitoring site.

Reduced annual mean concentrations of particulate matter (PM_{10} and $PM_{2.5}$) were also recorded during the 2020 monitoring period.

This Annual Status Report (ASR) provides updates on progress of all actions included within the Greater Manchester Air Quality Action Plan (2016-2021) (AQAP). Defra has responded positively to GM's suggestion that the update of the AQAP, and any remodelling of the Air Quality Management Area (AQMA), should be postponed until the impact of the proposed GM-wide Clean Air Zone to address roadside NO_2 has been fully understood.

The Greater Manchester Air Quality Working Group, led by Transport for Greater Manchester (TfGM), represents the ten authorities that constitute the Greater Manchester Combined Authority (GMCA) – Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford, and Wigan. These are also members of the Association of Greater Manchester Authorities (AGMA). Duties under the Local Air Quality Management (LAQM) Sections 82 to 84 of the Environment Act 1995 are exercised concurrently by the GMCA.

Since 2016, a single Air Quality Management Area (AQMA) has covered Greater Manchester. More details are provided on the UK-Air website.

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 Defra Clean Air Strategy[7] sets out the case for action, with goals more ambitious than EU requirements to reduce exposure to harmful pollutants. The Road to Zero[8] 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 of NO_2 heavily influenced by transport emissions.

The AQAP was produced following a programme of consultation and workshops with key stakeholders, including the Greater Manchester local authorities, Public Health England, TfGM and Highways England, to obtain feedback on the new measures proposed in the draft plan.

Policies and actions were subsequently identified and divided into the following broad subjects, based on the area and type of effects that may be achieved:

- **Development management and planning regulation:** including standardisation of regulation and policy across the Greater Manchester region.
- **Freight and HGVs:** there are several opportunities to reduce emissions associated with the movement of freight and goods by road.
- **Buses:** Buses have a vital role to play in transporting the public and give opportunities to improve air quality. New legislative developments, the creation of the future Greater Manchester bus strategy and improvements to vehicle standards will all assist in ensuring that bus continues to play a vital role into the future, carrying the majority of public transport journeys made within the conurbation.
- **Cycling:** Existing strategies and initiatives encourage cycling.
- **Travel Choices:** Encouraging the public and businesses to make sustainable travel choices is essential in realising lasting air quality benefits.
- **Cars:** Measures to reduce emissions from cars and reduce the number of vehicle trips can deliver real improvements.

[7] Defra. Clean Air Strategy, 2019

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

- **Information and resources:** Education and the provision of information to the public, businesses and policy makers is seen as vital in bringing air quality improvements.

In 2020, progress has been made on a number of actions in the Air Quality Action Plan. Highlights include:

- A number of Bee Network schemes opened, further improving the cycling and walking network in Greater Manchester, supported by TfGM-led sustainable travel promotion schemes. The number of schemes at full delivery phase has increased to 23, with an investment from the Mayor's Challenge Fund of £43.5m. In 2020 and early 2021, two pioneering CYCLOPS (Cycle Optimised Protected Signals) junctions were opened in Manchester and Bolton. The Manchester CYCLOPS junction alone saw more than 36,000 journeys by people on bikes between its completion in July 2020 and the end of the year.
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- The development of phase 1 of a Greater Manchester (GM) Cycle Hire scheme continued. This scheme will provide self-service, 24/7 access to 1,500 bikes for more than 100,000 households, workers and visitors across the regional centre through fixed cycle hire docking stations. TfGM plans for the scheme to be fully operational across the regional centre by 2022.
- The GM publicly owned electric vehicle (EV) charging points joined the new 'Be.EV' network in summer 2020. As part of joining this brand, 118 fast chargers were

replaced with new, more reliable units. TfGM has also installed 13 double-headed rapid charging points supported by the government's Clean Air Plan Early Measures Fund.

- TfGM has been successful in securing £1.8 million from the Office of Low Emission Vehicles (OLEV) Taxi Infrastructure Fund. This has been supported with further funding from the GMCA and now totals £2.4m. This will allow the installation of up to 30 taxi and private hire vehicle (PHV) charging points across Greater Manchester by late 2021.
- Travel plans, Air quality assessments and EV charge point requirements are among the tools increasingly being used to mitigate the air quality impacts of new development. These help local planning authorities to understand the impact each application will have on local air quality, and helps to guide developers towards incorporating sustainable transport solutions into new development.

- The Clean Air GM website attracted 177,136 unique visitors in 2020, and 207,803 unique page views – an increase from 113,509 unique page views the previous year.

- A public consultation on the Greater Manchester Clean Air Plan ran in late 2020, giving residents and businesses an opportunity to give their views on proposals for a Greater Manchester-wide Clean Air Zone, which will be the largest outside London (see below). A consultation on proposed Minimum Licensing Standards for taxis and PHVs ran in parallel. The results of these consultations continue to be reviewed.
- Work continues on the INTERREG eHUB project, to develop car club and e-cargo bike shared mobility solutions.

Since the Air Quality Action Plan was agreed, a UK Plan for tackling roadside nitrogen dioxide concentrations (Defra, July 2017) has been published. It identified 29 local authorities, including seven in GM, with areas likely to exceed the statutory NO_2 annual mean EU Limit Value of 40 µg/m^3 beyond 2020. In March 2018, 33 more local authorities were defined as having 'shorter-term NO_2 problems' - including Oldham.

The UK Plan and subsequently issued Directions by Government, compels these local authorities to follow a specific process to undertake initial evidence development, detailed feasibility studies and develop plans for the implementation of appropriate measures to deliver compliance with the EU Limit Value in the 'shortest possible time'. UK government guidance identifies charging Clean Air Zones (CAZs) as the benchmark measure for achieving compliance in the shortest possible time.

After the submission of GM's Clean Air Plan Outline Business Case in March 2019, a direction was issued by the Secretary of State to all ten GM authorities, to bring about

compliance with the legal limit for NO2 in the shortest possible time and by 2024 at the latest. In March 2020, a further ministerial direction and letter was received by GM local authorities. This directed the GM authorities to implement a charging Clean Air Zone Class C with additional measures so that NO2 compliance is achieved in the shortest possible time and by 2024 at the latest and that human exposure is reduced as quickly as possible.

TfGM has been coordinating the GM feasibility study on behalf of the GMCA and the ten GM local authorities, which remain legally responsible for compliance. For the most up-to-date information and further detailed information and related technical reports can be found on the Clean Air Greater Manchester website: cleanairgm.com/clean-air-plans.

As part of the development of the GM Clean Air Plan the 10 GM Authorities continue to ask the Government to direct Highways England to tackle NO2 exceedances on the Strategic Road Network (SRN) in the same way GM Authorities are having to take action on the local road network.

In particular, Tameside MBC has highlighted to Ministers that the inconsistency in approach is leaving many residents unprotected, particularly, around the A628/A57, a strategically important trans-Pennine route that passes through the villages of Hollingworth and Mottram as a single carriageway. This route, managed by Highways England, will be left with NO2 exceedances that are not being addressed, despite the area being declared as part of GM's Air Quality Management Area.

In July 2020 a meeting was held between Rachel MacLean – Parliamentary Under Secretary of State for Transport, Councillor Brenda Warrington, Councillor Andrew Western, Jonathan Reynolds MP and Robert Largan MP. Minister MacLean listened to the concerns of GM politicians and committed to reviewing the options to deal with this issue.

On 25 August 2020, Tameside MBC were notified that Government ministers have agreed to consider extending Greater Manchester's Clean Air Zone (CAZ) charges to the sections of the A628/A57 which form part of the Strategic Road Network, within the proposed CAZ boundary. The extension of any charges to the A628/A57 will be subject to a full assessment of the potential impacts, to be led by Highways England. This will cover air quality impacts on other roads, safety impacts, carbon impacts, as well as wider issues for Highways England, such as operational and network issues. Following the assessment ministers will take the final decision on whether or not charging should be implemented on the A628/A57. Tameside officers are involved in the work to ensure that it comes to a collective conclusion

about the outcomes of the assessment. The final decision on whether or not charging should be implemented on the A628/A57 rests with Ministers. At the time of writing Tameside MBC and Greater Manchester Authorities are awaiting their decision.

Conclusions and Priorities

The 2020 ASR covers in detail progress on all actions listed in the Air Quality Action Plan and includes information on the development of the GM CAP. Table ES1 below summarises NO_2 concentrations and exceedances of the annual mean objective across all sites (automatic and non-automatic) across GM in 2020.

Table. ES1 Summary of NO_2 monitoring in GM in 2020

Authority	Automatic sites (with valid data capture 2020)	Non-automatic sites	Concentration range (all sites) (µg/m^3)	Exceedances of NO_2 Annual Mean (non-automatic sites)	
				In AQMA	Outside AQMA
Bolton MBC	0	52	38.0 – 9.0	-	-
Bury MBC	2	22	35.0 – 19.0	-	-
Manchester City Council	3	46	39.0 – 13.6	-	-
Oldham MBC	1	20	37.7 – 14.0	-	-
Rochdale MBC	0	29	33.6 – 11.6	-	-
Salford CC	3	59	36.9 – 11.0	-	-
Stockport MBC	2	34	30.5 – 6.3	-	-
Tameside MBC	2	60	**40.8** – 10.0	1 (40.8 µg/m^3 at TA55)	-
Trafford MBC	3	25	29.7 – 10.3	-	-
Wigan MBC	2	115	**41.9** – 13.2	-	1 (41.9µg/m^3 at WI180)

Trends in NO_2 concentrations in Greater Manchester in 2020 can be summarised as follows:

- The highest NO_2 annual mean concentration recorded at an automatic site in 2020 was 36µg/m^3, down from 59µg/m^3 in 2019 and 65 µg/m^3 in 2017, at Oxford Road, Manchester. This is the first time that the annual mean concentration recorded at this monitoring station has not exceeded the annual mean objective of 40 µg/m^3.[9]

- In 2020, 16 of the 16 automatic air quality monitoring sites which were operational in 2019 have recorded reductions in NO_2 annual mean concentrations of between 23 µg/m^3 and 4µg/m^3. None of the 16 automatic air quality monitoring sites recorded increases in NO_2 in 2020.[10]

- There have been no exceedances of the NO_2 1-hour mean objective in 2020, compared with three exceedances in 2019 (2 at Bury Whitefield, and 1 at Manchester Oxford Rd).

- All 136 diffusion tube (non-automatic) sites operating inside the AQMA since 2016 recorded lower concentrations in 2020 than 2019. 94 of 95 diffusion tube sites operating outside of the AQMA across the same period recorded lower concentrations in 2020 than 2019. The one exception was TA26 in Tameside (Lees Road, Ashton), which recorded an annual mean concentration of 21.7µg/m^3, up from 21.4 µg/m^3 in 2019

- Of all 446 diffusion tubes operating across Greater Manchester in 2020, the highest annual mean concentration recorded was 41.9µg/m³ at Winwick Lane in Wigan, which is outside the AQMA.

In 2020, only two exceedances of the annual mean objective (AMO) for NO_2 (40 µg/m^3) were recorded by diffusion tubes, one inside the AQMA in Tameside (TA55 – 39/41 Manchester Road, Ashton, Tameside) and one outside of the AQMA in Wigan (WI180 – 4 Winwick Lane, Wigan). When adjusted to account for distance to relevant exposure, the

[9] An annual mean concentration of 38 µg/m^3 was recorded at Bury Prestwich, although this was based on only 7.24% valid data capture and is therefore not included within these findings. These summarised results also exclude Bolton A579 Derby St and Tameside A635 Manchester Rd, which were installed part-way through the year and therefore do not have sufficient valid data capture.

[10] Not including Bury Prestwich.

annual mean concentration of TA55 falls within the legal limit, from 40.8µg/m³ to 38.8µg/m³. Exceedances at these sites are acknowledged and mitigation measures are being explored in Wigan, but in the case of any exceedances outside of the AQMA, and in agreement with Defra, the decision to declare an additional AQMA or to expand the current AQMA is being delayed until the outcome of the GM CAP is realised.

Decreases of between 1 and 8 µg/m^3 were recorded at 13 of the 15 automatic monitoring stations recording PM_{10} concentrations in GM. An increase of 3µg/m^3 at Hazel Grove between 2019 and 2020 is likely due to low data capture in 2019. An annual mean increase of 1µg/m^3 was recorded at the Bury Radcliffe monitoring site. It is worth noting that mixed results in annual mean PM_{10} and $PM_{2.5}$ concentrations in terms of trends were measured across GM in 2019 compared to 2018.

The GM CAP is projected to have the most significant impact on air quality in the city-region going forward and bring about compliance with legal limits by 2024, in addition to actions taken to meet the 2038 city-region's carbon neutral target and the decarbonisation of transport.

The GM Clean Air Plan also monitors NO2, using diffusion tubes. However, the GM Clean Air Plan monitors different sites11 to those reported in the ASR.

The GM Clean Air Plan monitors 222 diffusion tube locations. In 2020, 16 of these locations measured NO2 concentrations exceeding the legal annual average standard of 40 µg/m3. Exceedances were recorded in Manchester, Tameside, Stockport, Bolton and Rochdale. This compares to 129 locations that were measuring concentrations above 40 µg/m3 in 2019.

Both the ASR and GM Clean Air Plan monitoring results demonstrate that air pollution reduced in 2020 as a result of the travel and economic restrictions in place due to the COVID-19 pandemic. However, travel patterns and the associated pollutant emissions returned to near pre-COVID-19 levels towards the end of 2020, and therefore, it is expected these improvements in NO2 will not be sustained through 2021.

[11] The GM Clean Air Plan monitors those sites where "target determination" modelling predicted illegally high levels of NO_2 in 2021. See CleanAir Gm.com for more detail.

The significant improvement in air quality during the lockdown periods does demonstrate that traffic is the primary factor causing exceedance, and that reducing vehicle emissions will lead to improvements in NO2 levels.

Local Engagement

The Clean Air Greater Manchester website (cleanairgm.com) has been a key development in the local authorities' communication and engagement with the GM public since its launch in 2018. Dedicated Facebook (facebook.com/cleanairgm) and Twitter (@CleanAirGM) channels were also launched, with the conversation being tracked using the hashtag #cleanairgm.

cleanairgm.com contains a wealth of information and data on local air quality, the GM CAP, how individuals can play their part and tips on reducing and avoiding air pollution. A Schools section is also included on the website that includes a free air quality toolkit for schools to download.

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1 Local Air Quality Management

This report provides an overview of air quality in Greater Manchester during 2020. Transport for Greater Manchester (TfGM) represents the ten authorities that constitute the Greater Manchester Combined Authority (GMCA). The ten authorities are:

- Bolton Metropolitan Borough Council (BoMBC)
- Bury Metropolitan Borough Council (BMBC)
- Manchester City Council (MCC)
- Oldham Metropolitan Borough Council (OMBC)
- Rochdale Metropolitan Borough Council (RMBC)
- Salford City Council (SCC)
- Stockport Metropolitan Borough Council (SMBC)
- Tameside Metropolitan Borough Council (TMBC)
- Trafford Borough Council (TBC)
- Wigan Metropolitan Borough Council (WMBC)

The report 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 the 10 Local Authorities of Greater Manchester to improve air quality and any progress that has been made.

DEFRA have confirmed that the Air Quality Action Plan does not need to be updated until the outcome of the implemented Clean Air Plan to address Roadside NO_2 has been determined. Consequently, modelling of a renewed AQMA around sites of high pollution, and to closely observe the situation here has also been deferred, however areas outside the

AQMA, that have been identified as having non-compliant pollution concentrations are under investigation.

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

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

A summary of AQMAs declared by Greater Manchester can be found in Table 2.1 Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at https://uk-air.defra.gov.uk/aqma/maps. Alternatively, see Appendix D, which provides for a map of air quality monitoring locations in relation to the AQMA(s).

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
AQMA Greater Manchester	Declared 01/05/2016	NO_2 annual mean	An Area covering the 10 districts of Greater Manchester, including arterial routes, district centres, and airport.	YES	58.7[12]	41.9[13] 38.8[14]	Greater Manchester Air Quality Action Plan 2016-2021, (16.12.2016)	https://cleanairgm.com/technical-documents/

☒ **Greater Manchester confirm the information on UK-Air regarding their AQMA is up to date.**

☒ **Greater Manchester confirm that all current AQAPs have been submitted to Defra.**

[12] Oxford Road, Manchester. Distance Corrected

[13] (Not in AQMA) WI180 Diffusion Tube (Winwick Lane, Wigan). Distance Corrected.

[14] TA55 Diffusion Tube (39 Manchester Rd, Ashton Under Lyne) Distance Corrected.

Progress and Impact of Measures to address Air Quality in Greater Manchester

2.1.1 Response to ASR 2019

The main points from Defra's appraisal of last year's ASR and GM's responses are included below:

1. **The report provides a comprehensive discussion of results along with graphs and tables to establish a trend. For future reports, it would be beneficial for all authorities to have a similar format for presentation of results, discussion, graphs and tables to maintain consistency throughout the report.**
   GM: Consistent formatting has been applied in the 2020 ASR.

2. **In terms of NO_2 concentrations, the comparison between 2018 and 2019 was varied. 10 out of 17 automatic monitoring stations recorded higher concentration in 2019. For diffusion tube locations, there were more increases (222 sites) than decreases in 2019 (131 sites). The highest increase was recorded in Rochdale (Tube 22) (28.6 µg/m^3 in 2018 and 43.4 µg/m^3 in 2019). The highest decrease was also recorded in Rochdale (Tube 14) (29.2 µg/m^3 in 2018 and 12.9 µg/m^3 in 2019). To improve the increasing trend, it is advised to investigate the effectiveness of the current AQAP measures and introduce additional effective measures in the next update of AQAP which is due in 2021.**
   GM: In agreement with Defra, the update of the AQAP has been deferred due to the development of the GM CAP. The CAP and the supporting measures, to be implemented in 2022, has been designed to bring about compliance with the legal limit for NO_2 by 2024. Implementation of a comprehensive CAP monitoring regime will measure progress and the effectiveness of the CAZ in reducing roadside exposure above the legal

limit. It is envisaged that the CAP will obviate the need for a future AQMA and AQAP.

3. **There were six exceedances outside of the AQMA, of which five are in Wigan Council and one in Tameside Metropolitan Borough Council. It is noted that amendment to the AQMA to include these areas is not possible until the Clean Air Plan has been implemented. However, these areas should be closely monitored to make sure they do not establish an increasing trend.**

   GM: The relevant authorities continue to monitor the locations of the exceedances that were recorded outside of the AQMA in 2019. In Wigan, a 7.5 tonne weight limit has recently been implemented on the southbound route (A580 to M6) to try and reduce the volume of HGVs using this route. Wigan Council is continuing to liaise with a neighbouring local authority to look at further mitigation, thereby reducing exposure to levels of NO_2 pollution that are above the legal limit values.

4. **It was commented on last year's appraisal that the results for diffusion tube sites were not included in Table A.3. The issue has not been rectified in this year's report. It is important that the monitoring results be included for the past five years (where possible) for all sites in order for progress to be tracked. Nevertheless, it is acknowledged that the Council has acted on the comment regarding the absence of trend graphs for selected diffusion tube sites by providing additional graphs in this year's report.**

   GM: The councils have conformed with the new requirements for diffusion tube reporting.

5. **The AQAP is due for renewal in 2021 and the Council is encouraged to develop $PM_{2.5}$ specific measures for inclusion within the AQAP.**

GM: A campaign highlighting wood-burning as a cause of particulate air pollution was undertaken in 2020, with information provided to the public via digital means, details of which can be found on the CleanairGM website. The 10 GM authorities work collaboratively in delivering improved air quality across the region and in 2020 they collectively applied for Defra grant funding to target PM2.5 emissions from domestic burning and commercial kitchens but were unsuccessful. GM is compliant, as measured at 8 monitoring stations across the region, with the PM2.5 National Air Quality Objective of 25µg/m^3. In 2019 Greater Manchester was compliant with the WHO guideline value of 10µg/m^3 at all but one site, which recorded 12µg/m^3 and as might be expected in 2020 all sites met the WHO guideline value. However, GM authorities will continue to work collaboratively and apply for funding to reduce the emission of locally produced PM2.5 particulates, in addition to actions contained within the current AQAP. It is envisaged that, unless the government introduces more stringent air quality values for PM2.5, once the CAP has achieved its objectives to bring about compliance with the NO2 legal limit GM would seek to revoke the order for the current AQMA. In which case the reporting of actions to tackle fine particulate matter in Greater Manchester will continue in future Annual Status Reports.

GM has taken forward a number of direct measures during the current reporting year of 2020 to improve local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. 39 measures are included in Table 2.2, with the type of measure and the progress GM has made during the reporting year of 2020 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented in Table 2.2.

More detail on these measures can be found in the 2016-2021 AQAP, which is located on the cleanairgm.com technical documents page. The AQAP is complemented by the 2016 GM Low Emission Strategy, which can be downloaded from the GMCA website.

2.1.2 Progress on Actions across Greater Manchester

The following section outlines activity that has taken place to improve air quality across GM, often at a strategic scale, and is provided by TfGM. The subsequent section will look at activity that has taken place within each of the 10 local authorities, with progress updates provided by each council. For a condensed summary of progress on each of these actions, see table 2.2.

Development Management and Planning Regulation

(AQAP 1.4) Clean Air Zone Feasibility Study

As stated in the 2019 ASR, this action is now covered by the GM CAP work being led by TfGM in partnership with the 10 local authorities. For a 2021 update on the progress of the GM CAP, please see the 'Actions to Improve Air Quality' section at the beginning of this report.

(AQAP 1.6) Encouraging Travel Planning

In 2020 the TfGM Sustainable Journeys team continued to support around 450 businesses that make up the Business Travel Network. Over the course of the year 37 new businesses joined the network.

Two Business events were supported in March with a reach of more than 100 employees; these were the Annual Benefits Roadshow 2020 in Manchester and an Oldham Social Care/CCG Staff event in Oldham.

Face-to-face support was naturally affected by COVID-19. As a result, the Sustainable Journeys team worked with partners to promote and deliver online content. Throughout 2020 this was based around supporting businesses primarily affected by lockdown measures and re-building confidence in public transport during the easing of lockdowns. Four business factsheets supporting current government messaging were shared with the Business Travel Network as well as being promoted via TfGM's social media and stakeholder channels to non-Business Travel Network businesses.

TfGM developed a range of business-specific content throughout 2020, reflecting the government's messaging around travelling to and for work, using webpage updates,

business communications and online workshops (such as Institute of Directors 'Safely Reopening' webinar in July 2020 and Growth Company webinar in August 2020) and events to ensure this messaging was circulated and up to date. The content was sector-specific where necessary to support those businesses which were still operating normally. Written materials were promoted via intermediary organisations, with a reach of approximately 1,500 businesses. In December 2020 TfGM started to plan support for businesses reopening in spring 2021.

TfGM refreshed its webpages and created business surgeries aimed at locking in positive travel behaviours from lockdown and to promote more hybrid working, i.e. remaining flexible to encourage different commute times and modes of travel. More targeted support was provided to key trip generators (e.g. Salford Royal, HMRC, Bolton College) to encourage greater hybrid/flexible working. All businesses have been supported by online one-to-one officer support where requested.

Personalised travel planning remains on hold and none was delivered during 2020.

(AQAP 1.7) Taxi and Private Hire Quality Controls to Prioritise Low Emission vehicles

A full public consultation on Minimum Licensing Standards was undertaken in parallel with the GM CAP consultation at the end of 2020 across all ten GM local authorities. Proposals would set standards for all licensed vehicles regulated by GM councils, including age and emission standards. Results of the consultation and next steps will be reported in due course. See GM taxi standards website for latest updates.

(AQAP 1.8) Green Infrastructure

A collaborative project between the Groundwork Trust, Lancaster University, Manchester City Council and TfGM is researching the use of vegetation in green barriers to trap and filter airborne pollution particles before they reach school playgrounds and classrooms. Different green barriers have been trialled at three schools. Monitoring has now ended, and research is being written up. This project has been delayed due to the pandemic.

Freight and Heavy Goods Vehicles

(AQAP 2.1) Delivery and Service Planning

New delivery and servicing plans were not progressed during 2020 due to the pandemic.

(AQAP 2.3) Urban Consolidation

The Manchester waste consolidation project in Manchester city centre has been delayed due to restrictions put in place in response to the pandemic. Current scheduling suggests this project will be relaunched in July 2021. One additional waste consolidation project is also being investigated in Stockport.

(AQAP 2.4) Access for Freight to Key Economic Centres and Sub-regional Freight

Work is ongoing in refreshing the Greater Manchester Freight Strategy, which when published will provide guidance of this at a strategic, multi-modal level (relating to both potential and progress). Details are currently being discussed with local authorities.

(AQAP 2.5) Freight Information Channels

TfGM is initiating waste procurement projects looking at reducing HGV mileage in urban areas. A Travel Demand Management (TDM) team is now well established at TfGM and, as part of recovery from the pandemic, TfGM will continue to work on the best methods for sharing information to a freight specific audience.

TfGM continues to invest in the CLOCS (Construction Logistics and Community Safety) national standard, with benefits to safety and the environment.

(AQAP 2.7) Engine Idling

Advice has been provided to local authorities on their statutory powers to enforce action against drivers of idling vehicles. This was in response to enquiries about specific complaints or ongoing issues with idling. Anti-idling information and a toolkit is included in the Clean Air GM website's resources for schools. In 2019 Executive members signed a letter requesting a public consultation into tougher penalties for drivers idling their vehicles. Further work is underway to understand how to best encourage drivers to change their behaviour towards idling their vehicle.

(AQAP 2.8) Alternative Fuels

TfGM has led local policy and is in the process of delivering programmes that will provide the infrastructure for alternative fuels. The network of publicly owned EV chargers have joined the new Be.EV network.

14 dual-headed charging points have been delivered through the Early Measures project to date, with a further two currently in construction. 24 charging points will be delivered through this project in total, including at 5 private sites. These are planned to be installed in summer/autumn 2021.

OZEV funding has been secured to deliver 30 rapid chargers for the use of the taxi trade, work has commenced in relation to location planning, engagement with the taxi trade and initial feasibility to inform site selection. Further funding from GM CAP will enable delivery of further charging points.

In addition, TfGM are exploring a range of opportunities, including the on-street residential charging bid, which allows applications for Local Authority car parks within the criteria.

The EVCI strategy, due to be approved by the GMCA in July 2021, provides a clear set of EVCI network strategic principles and delivery criteria for publicly funded EVCI to highlight the types of infrastructure and charging locations that will be supported in principle by TfGM and GM local highway authorities.

A refresh of the GM Freight Strategy is under way. This work intends to understand the potential for modal shift of freight and changes in operations that will result in more sustainable movement of freight. The refresh will also scope out a follow-on 'GM roadmap to low-emission freight' that will look at the options for the technological, operational, infrastructure and policy changes (including alternative fuels) that will be required to meet GM carbon neutrality targets.

Buses

(AQAP 3.1) Bus Priority Programmes

The introduction of bus priority at traffic signals on the A6 between Manchester city centre and Stockport was successful and has now been rolled out to the Salford to Bolton bus corridor as part of the Salford Bolton Network Improvements (SBNI)

programme. This has included upgrading on-bus equipment for operators running on this route.

Bus priority at traffic signals is currently being scoped as part of three Quality Bus Transit corridor improvements across Bolton, Oldham, Rochdale, Tameside and Wigan.

(AQAP 3.2) Bus Improvements

TfGM is engaging with stakeholders to establish solutions available to optimise zero-emission bus operation. There are currently 35 electric buses in operation in GM.

(AQAP 3.3) Hybrid Bus Improvements

TfGM is procuring a retrofit SCRT exhaust after-treatment solution for the owned Optare hybrid bus fleet to improve the tailpipe emissions from the Euro 5 to Euro 6 emission standard.

(AQAP 3.4) Trial of Low Emission Vehicles

TfGM has conducted a market sounding exercise to establish the options, considerations and lessons learned in relation to the implementation and operation of battery electric buses. Additionally, there are discussions, as part of the GM carbon neutral target of 2038, to introduce hydrogen powered vehicles within the conurbation.

Cycling

(AQAP 4.1) Cycle Programmes

Bee Network routes continue to be delivered for improved cycling and walking in GM, supported by TfGM-led sustainable travel promotion schemes. 67 of the 82 schemes which have gained ‘programme entry’ to the Mayor’s Challenge Fund have now received development cost budget approval. The number of schemes at full delivery phase has increased to 23, with an associated total committed value from the Mayor’s Challenge Fund of £43.5m. In 2020 and early 2021, two pioneering CYCLOPS (Cycle Optimised Protected Signals) junctions were opened – in Manchester and Bolton – alongside the first SPARROW crossing (Signalised Parallel Crossing) in the UK. These new forms of infrastructure enable fully protected movements for cyclists and pedestrians through challenging junctions and across busy roads. The Manchester

CYCLOPS junction saw more than 36,000 journeys by people on bikes between its completion in July 2020 and the end of the year.

(AQAP 4.2) Public Cycle Hire

In September 2018, the GM Cycling and Walking Commissioner gained approval from the GMCA, via correspondence with local authority leaders, to deliver a viable, operational model for a for a region-wide cycle share scheme. The vision is for GM to have a successful public cycle hire scheme that integrates with the wider transport network.

Phase 1 of the GM Cycle Hire scheme will provide self-service, 24/7 access to bikes and eBikes for more than 100,000 households, workers and visitors across the regional centre through fixed cycle hire docking stations. The scheme will promote cycling and contribute towards mode shift away from private motor vehicles.

TfGM is seeking to appoint a Service Provider to design, implement, operate and manage the GM Cycle Hire Share scheme for a period of five years. Procurement began in summer 2020 and is currently on-going. TfGM plans to launch the scheme in 2021 with 1,500 bikes, and for the scheme to be fully operational across the regional centre by 2022.

(AQAP 4.3) Cycle Logistics

Around 25 eCargo bikes will be provided for public hire in an INTERREG-funded ‘eHUB project. This will supply cycle logistics options for independent businesses, and eCargo bikes have also been found to be useful for parents travelling with children.

(AQAP 4.4) Cycle to 2040

The Made to Move and Bee Network agenda, and TfGM work programmes to ensure that cycling is accessible, has increased during 2020. The team has been involved in two main projects:

Activation: The communication and marketing of the Bee Network and enabling behaviour change through interventions tailored to individual audiences and developing a culture where cycling and walking is seen as the norm.

To date, TfGM has been commissioned by Tameside Metropolitan Borough Council to coordinate the activation of their Chadwick Dam and Hill Street schemes; commissioned by Bury Council to help plan the activation of their tranche one junction improvement scheme and commissioned by Rochdale Borough Council to help plan their Castleton corridor scheme. TfGM expects to provide further support to Bolton, Trafford and Salford in 2021-22.

TfGM is supporting and promoting the online platform 'Love to Ride' (L2R) that encourages people to cycle. L2R run quarterly events to incentivise and reward riding. The organisation has engaged more than 415,000 people and 25,000 workplaces worldwide, helping 73,000 people to get back on their bikes.

To September 2020:

- 174 organisations have taken part in L2R in GM, with 1,675 participants.
- 199 of these participants were 'new riders'.
- Cumulatively they cycled 242,527 miles on 18,678 trips, saving 28,927 Lbs of CO_2.

A further update on L2R in GM is due in early summer 2021.

Cycle and Stride: A new project, funded by the London Marathon Charitable Trust, to help people and groups become more active through cycling and walking, working with communities, using community understanding and the knowledge communities have of their local area.

TfGM is providing the support and means to help individuals and communities with one or more of the following:

- Grants which help communities get moving, whether it be for cycle parking, walk leader training or access to cycles.
- Guided rides and walks.
- Cycle training to support confidence and gain new skills.
- A website with engaging resources to help spread the message and inspire others to become active.

The project launched in October 2020 and has so far received more than 100 expressions of interest. 26 groups have been recruited for year one of the project.

Due to the high levels of interest received, the next phase of recruitment for the Cycle and Stride project will be in Autumn 2021.

Travel Choices

(AQAP 5.1) Car Clubs

As part of an Interreg North-West Europe funded project, Manchester is one of six partner cities, from five different countries, that will launch and promote eHUBs. In doing so, the project will develop knowledge, best practices and develop a blueprint for other cities and regions, as well as aiming to reduce of air pollution, congestion, and CO_2 emissions in the cities.

The eHUBS pilot in Greater Manchester will provide between five and ten eCar Club vehicles for public hire.

(AQAP 5.2) Dynamic Road Network Efficiency and Travel Information System

TfGM has introduced count data at four Metrolink park and ride sites to enable live capacity/spaces information to be displayed on variable message signs (VMS), and eventually on the TfGM website.

In response to the pandemic, shorter cycle waiting times were implemented at traffic signals to support walking and cycling and enable social distancing by preventing the build-up of pedestrians at crossings.

In addition, 2020 saw the further roll-out of adaptive signals; the use of mobile phone data to shape response to travel demand management initiatives; the use of video analytics to include demand from active travel in adaptive signal control at a number of junctions; and journey time analysis to identify hotspots relating to the return of education, leisure and retail trips following the easing of restriction intended to curb the spread of COVID-19. These data were also used to shape the Travel Demand Management (TDM) response and interventions for these hotspots.

Furthermore, a range of activities to support district emergency active travel plans were undertaken, including around the A56 and A635.

Cars

(AQAP 6.1) Plugged-in Places EV Charging Network

The GM publicly owned electric vehicle (EV) charging points joined the new 'Be.EV' network in summer 2020. As part of joining this brand, 118 fast chargers were replaced with new, more reliable units. Two of the existing rapid chargers were also updated to allow the latest software for a better user experience. Although slightly reduced in number, the locations removed was due to low utilisation and lack of public availability. The numbers remaining are fully publicly accessible and still account for a third of Greater Manchester's overall publicly accessible EV charging network.

As per the previous report, the Phase 1a) Early Measures Project was funded following a successful bid to Government's Clean Air Plan 'Early Measures' fund. The successful application secured £3m to expand the EV charging network; of which, £1.8m is funding 24 double-headed rapid charging points to be installed in 2020/21. TfGM has installed 14 of these units so far with the remainder to follow in Summer 2021.

TfGM has also been successful in securing £1.8 million of funding from the Office of Zero Emission Vehicles (OZEV) Taxi Infrastructure Fund. This has been supported with further funding from the GMCA and now totals £2.4m. This will allow the delivery of up to 30 taxi and PHV charging points across GM. Extensive engagement has been carried out with trade representatives and local authorities to find suitable locations for both trades. Work on installing these chargers is planned for late 2021.

EV charging points will also be installed for the eHUBS project, which consists of up to 10 electric Car Club vehicles, enabling them to have exclusive charging points to support confidence in the scheme. These are proposed for installation in Summer 2021.

(AQAP 6.4) School Travel

In 2020 the TfGM Sustainable Journeys team began delivery of the Active Travel Grant programme for schools, funded through the GM Mayor's Congestion Deal funding. The programme involves working with up to 20 secondary schools and colleges to provide funding for active travel grants and support through officer time to reduce car travel to/from school or college.

During October all secondary schools and colleges were ranked by local traffic congestion, number of students, and percentage of pupils using public transport. In November the top 100 from this list were approached to apply to the programme. More than 30 applications were received and in December inception meetings at the 20 recruited schools and colleges took place.

Ongoing meetings with students and key contacts have taken place to agree grant purpose, delivery of wrap-around support and promotion of active travel. Feedback from the 20 schools and colleges includes that:

- 12 want cycle parking.
- Three want training (for students or staff to deliver Bikeability)
- Three want to buy pool bikes
- One would like a reward scheme through training at NCC.
- One would like site improvements to provide a cycle path into school.

Of the 20 schools and colleges:

- Five have had agreement approval to progress with grant purpose.
- Six are providing match-funding for the grant to enable the creation of more ambitious active travel facilities.
- 14 are financially unable to match-fund.

Information and Resources

(AQAP 7.1) Website and Resources

The last year (1 January 2020 – 31 December 2020) has seen a significant increase in views for **cleanairgm.com.** During this time the website was viewed by 177,136 people (unique pageviews) and achieved 207,803 pageviews. This is a significant increase in unique page view on the previous year (113,509).

This highlights the success of an awareness-raising campaign surrounding a public consultation on the GM CAP proposals, which took place between 8 October and 3 December 2020.

The bulk of visits to cleanairgm.com in 2020 came between mid-September (when the campaign started) and late December, reflecting organic and paid activity to promote the consultation and drive people to cleanairgm.com.

For the consultation, significant updates were made to the GM CAP page, the four impacted vehicle webpages, and supporting document pages. A bespoke Clean Air Plan consultation page was also temporarily introduced.

The most visited page on the website in 2020 was by far the homepage, which received 61.48% of pageviews due to direct promotion around the consultation.

The second most visited page was the Clean Air Zone map with 14,629 views, closely followed by the GM CAP page with 10,392 views, reflecting high interest in the detail of the Clean Air Zone proposals. The bespoke page for the Clean Air Plan consultation received 8,249 pageviews, just over 5% of views during the calendar year.

Paid media promotion accounted for 26.6% of overall traffic (1 January – 31 December 2020). Facebook adverts have been highly successful at channelling people towards the website, seen by this format being the top four sources of traffic within the paid media category. Some 12.5% of traffic came from organic search.

A new webpage on air pollution from domestic burning went live on the site on 2 February 2021. It focuses on woodburning and solid fuel stoves and fireplaces, and garden bonfires, as sources of air pollution, specifically particulates. It has been the landing page for domestic burning social media activity by Greater Manchester's 10 local authorities and Clean Air Greater Manchester, including a campaign discouraging residents from burning garden waste, and promoting the Ready to Burn certification scheme for firewood and briquettes. The page has so far had 815 unique page views. It is intended that navigation to the page will be improved as part of a review of the 'Air pollution and you' page.

The bounce rate for the Clean Air website is currently at 65.67%, an increase on 2019.[15] Most websites will see bounce rates fall somewhere between 26% and 70%. This is likely to have happened for three key reasons. First, an increase in paid media advertising to support the GM CAP proposals had targeted very specific types of vehicle owners and drivers. However, as this is a challenging group to target accurately through paid media, it is likely that a significant number of people not affected by the GM CAP proposals had received and engaged with the adverts but had little interest in the website once they had arrived at it.

Second, some of the pages that audiences 'bounced' from were 'thank you' pages for those who had completed the consultation so there would have been little reason for most people to re-engage and stay on the site.

Third, there was a very high bounce rate from an EV page, indicating that for many audiences who were on the website during this past year, this was of less interest. A new, separate TfGM microsite for electric vehicles is being developed ready for launch in summer 2021, which should reduce any bounce rate associated with EVs.

In 2020, TfGM's new 'one-stop-shop for all things related to cycling and walking in GM' Active Travel website was launched. Included on the website is an interactive map, showing people what is completed, under construction, or out for consultation across GM. Visitors can book cycling confidence sessions, get tips and practical information, and find out the latest news about the city-region's plans.

(AQAP 7.2) Online Route Finding: TfGM is currently working on a real-time bus departure feed that will be made available to Citymapper and Transit, soon to be ready for Beta testing. This will enable those services to include GM real-time bus information. Engagement with Moovit and itoWorld (providers of data to Google Maps and Apple Maps) on potentially using this data has also begun. TfGM is also in the

[15] The bounce rate is the percentage of single-page visits on the site and tells us whether people that arrive on our website, choose to stay on the website.

early stages of an initiative to introduce a new online journey planner to tfgm.com, which would encourage customers to choose more sustainable journey choices.

(AQAP 7.3) Pollution Alert: A pollution alert service has been established, where members of the public can be sign up for alerts cleanairgm.com/air-quality-data/forecast-and-alerts. The number of registered subscribers in each district is provided in the table below.

Figure 2.2 Number of subscribers for Air Pollution Alert Service

Metropolitan Borough	Current number of subscribers
Bolton	21
Bury	5
Manchester	77
Oldham	6
Rochdale	41
Salford	21
Stockport	21
Tameside	7
Trafford	12
Wigan	47

(AQAP 7.4) Health Effects of Air Pollution in Greater Manchester:

In 2019, PHE released 'Improving outdoor air quality and health: review of interventions'. The document is a comprehensive overview of actions that national and local government and others can take to improve air quality and health. The recommendations are to be reviewed against GM actions around air quality. In 2020, PHE released two follow-up reports to the review: (i) A guide to using the review to help choose or plan interventions and (ii) Principal interventions for local authorities. These supplemented the findings of the review and provide guidance on choosing and applying air quality interventions at a local level.

The PHE air quality economics tool is a resource allowing an assessment of the health impact and costs of air quality. TfGM has been supported to run some initial analyses using this tool.

(AQAP 7.9) Awareness Raising: Due to the ongoing pandemic, activities for National Clean Air Day (CAD) in October 2020 were held remotely. In Greater Manchester CAD centred around the launch of the statutory consultation on the GM CAP.

2.1.3 Progress on Actions in Districts

2.1.3.1 Bolton Metropolitan Borough Council

(AQAP1.1&1.2) Development Management and Planning Regulation

Bolton Council continues to require air quality assessments for large planning applications. Even where the air quality impact is assessed as negligible mitigation is requested, including measures such as electric vehicle charging provision where parking is provided and Construction Environmental Management Plans to control dust and emissions during the construction phase of the development.

(AQAP2) Freight and Heavy Goods Vehicles

The Council is undergoing procurement for the purchase of 21 new refuse collection trucks, which will have lower emissions than the existing fleet.

(AQAP4) Cycling

Bolton Council have a number of schemes that are being implemented or being consulted on. Whilst many of these schemes were not completed in 2020 they were under development during this period and are schemes that will have a positive impact on air quality. These include:

- Bolton Town Centre. Works include improved links to and around Bolton Town Centre for cyclists and pedestrians. Consultation started in November 2020, with work expected to be completed by April 2022. The work includes seven new crossings, 2 subways, 2 upgraded junctions,2-way cycle track and extra cycle parking.
- Town Centre to Doffcocker. The scheme involves new cycle routes and junction improvements. Consultation started in 2020, with an estimated completion date of September 2022.

- Newport Street CYCLOPS junction. The junction improvement links the railway station to the cycling network. The work has been completed.
- Salford – Bolton Network Improvements. Work has started on improvements to cycling and walking routes into Bolton Town Centre. The work includes upgraded junctions and crossings and protected cycleways.
- Astley Bridge – Crompton Active Neighbourhoods Scheme. This scheme will be completed in April 2022 and will improve walking and cycling access to schools, shopping streets and will open up access across neighbourhoods.
- Oldham's Estate Active Neighbourhoods. This safer streets scheme for those travelling on foot or by bike is scheduled for completion by March 2020.
- Westhoughton Bee Network. This Active neighbourhood scheme will improve safe access to Westhoughton Town Centre and aims to increase cycling in the area.
- A58 Moss Bank Way. This scheme involves the provision of dedicated cycle lanes from Blackburn Road to Doffcocker Roundabout, with an estimated completion date of June 2021.
- Farnworth Town Centre to Salford Boundary. This scheme involves the provision of dedicated cycle lanes from Farnworth Town Centre to the Salford Boundary with an implementation date of October 2021.
- Bolton Town Centre to Farnworth corridor. This scheme will also increase dedicated cycling provision along this route, with an implementation date of August 2021.

More information on the schemes is available on the Safe Streets Bolton Website.

(AQAP5) Travel Choices

The schemes outlined in Section 4 (Cycling) will also encourage walking and alternative modes of transport than the car.

(AQAP6) Cars

Junction improvements are planned as outlined in Section 4 (Cycling). Electric vehicle charging provision is required for most new developments, which will encourage the uptake of electric vehicles and reduce emissions from cars. A new rapid charging point

was installed in Soho Street in the town centre during 2020 (commissioned in early 2021). The Council is working on plans for further EV charging points in the borough.

(AQAP7) Information and Resources

Bolton Council participated in the GM wide Clean Air Plan consultation, which took place at the end of 2020. This included press releases and sharing information with partner organisations.

2.1.3.2 Bury Metropolitan Borough Council

(AQAP 1.1 and 1.2) Development Management and Planning Regulation

The Environment Section at Bury Council recommended that Electric Vehicle (EV) Charging Points should be installed at 95 proposed developments, which did not require full Air Quality Assessment Reports. A total of 10 air quality assessment reports were received and reviewed in support of planning applications during 2020. In addition, three air quality reports were also received for three Greater Manchester Spatial Framework sites. Pre-planning advice was also given to developers regarding air quality issues.

(AQAP 4.1) Cycle Programmes

The following cycle projects have been undertaken during 2020:

- Cycling City Ambition Grant schemes to improve crossings at many points in the borough.
- Introduced 2 new combined pedestrian/cycling crossings on the A56 as part of the Emergency Active Travel Fund Tranche 1.
- Introduced a Low Traffic Neighbourhood scheme in Brandlesholme, using the Emergency Active Travel Fund Tranche 1.
- Progressed designs for 5 junctions to have upgraded pedestrian and cycling facilities to a value of circa £2.2m.
- Progressed design work for upgraded active travel infrastructure for the Fishpool area to be funded by the Active Travel Fund and Mayors Challenge Fund.

- Developed the Growth Deal scheme for enhanced provision for pedestrians and cyclists at the Angouleme Way/Market Street junction due to start in Spring 2021.
- Established the Bury Cycling and Walking Forum to allow residents and stakeholders to engage with the council to help improve levels of active travel in our borough.
- Funding allocated for a full time Move More Officer to promote active travel.

(AQAP 5.1) Car Clubs

Bury Council is Working with TFGM and Manchester City Council to develop an EV car club pilot scheme.

(AQAP 6.1) Plugged-in Places EV Charging Network

Bury Council has undertaken the following projects:

- Work with TfGM to develop an EV Charging Infrastructure Strategy.
- Use of “Early Measures” Funding to progress the installation of rapid EV chargers at 2 Bury town centre sites in Spring 2021.
- £10 million council budget allocated to upgrade and electrify the council vehicle fleet.
- Developing a scheme to install EV chargers throughout our communities to include a Pilot project for on-street chargepoints.
- Potential sites identified for a Taxi Rapid EV chargepoint hub

(AQAP 7) Information and Resources

In response to the COVID 19 pandemic, Bury Council officers were asked to work from home where possible. As a result, many council workers are now fully conversant in working from home and have been provided with equipment and IT systems to allow this to work effectively. This situation has lead to a proposal for a longer term Agile Working Policy where all employees will be encouraged to mainly work from home. It

is anticipated that this policy will drastically reduce commuting miles and travel to meetings etc amongst council officers.

Bury Council have now published a draft Climate Action Strategy and Plan which will include many actions that will improve air quality. Also, two new Climate Action Officers have been employed and will be heavily involved in promoting active travel, and the expansion of Bury's EV charging infrastructure.

2.1.3.3 Manchester City Council

(AQAP1) Development Management and Planning Regulation

Continued with planning development requirements, including air quality impact and exposure assessments, and mitigation such as electric vehicle charge points (EVC), boiler emissions standards and travel plans.

Summary EVC best practice recommendations produced as a working document for Planning and Environmental Protection officers: The Council is working to consolidate this with the Institute of Air Quality Management/Environmental Protection UK Development and Construction Guidance in order to publish online as a guidance document for developers.

The Council continued to submit monthly reports to TfGM for the Planning Development cumulative impact database.

(AQAP2) Freight and Heavy Goods Vehicles

Delivery and Servicing Plan work and implementation continued: deliveries during off-peak times, load consolidation, and personal deliveries not allowed.

The Council's waste contractor, Biffa, replaced almost half of the city's diesel refuse collection vehicles with emission-free electric alternatives.

Development of city centre local business consolidated waste management schemes.

(AQAP3) Buses

As part of the GM Transport Strategy 2040, Right Mix approach and development of City Centre Transport Strategy, development of bus priority corridors and infrastructure

that will increase bus transport mode share and reduce the impact from private cars on air quality across Manchester.

(AQAP4) Cycling (& Walking)

Ongoing implementation of Right Mix vision for 50% of all journeys in Greater Manchester to be made by walking, cycling and public transport by 2040.

Development of the City Centre Transport Strategy including key aim for 90% of peak morning trips into and within the city centre to be by public or active transport by 2040, reducing the impact of private cars on air quality and pollution across Manchester.

Development and delivery of over £60m of active travel and public realm improvement projects including air quality monitoring across Manchester, including key schemes such as Chorlton cycleway, Northern Quarter, Deansgate, Piccadilly Gardens, Beswick neighbourhood, Wythenshawe active travel, Levenshulme and Burnage active neighbourhood and others.

(AQAP5) Travel Choices

MCC continued to promote sustainable travel and air quality over staff communications, via community engagement and university projects, and to the public via Council web pages. Furthermore, MCC commenced development of a new Business Travel Policy for MCC.

Ongoing successful rollout of the School Streets programme, including partnering with 14 Schools and 5667 pupils to hold School Streets Road Closure sessions including 7 on Clean Air Day 2020. A further 11 schools (4237 Pupils) have expressed interest in holding Trial School Street sessions.

MCC continued the creation of Greater Manchester's first fully filtered neighbourhood (Levenshulme and Burnage active neighbourhood), pioneering an approach where the Council with the community develop schemes resulting in increased active modes of travel.

Pedestrianisation of city centre areas, supported by air quality monitoring.

Continued to promote flexible working and working from home or locations that result in reduced travel time.

Several teams have fleet EVs, and this number is increasing when vehicle lease contracts end.

Further EV charging infrastructure actions by the Council:

Working with TfGM and other GM districts to produce a GM EVCI Strategy, due to be adopted summer 2021.

Working with TfGM to identify sites for chargepoints for Hackney carriages and PHVs using the OZEV Taxi grant, which will result in the installation of three chargepoints.

Working with TfGM to provide a further four charge points through the Clean Air Plan funding, which are due to be installed in 2021.

Working with TfGM to implement the eHubs programme in Ancoats, Chorlton and Whalley Range, which co-locates electric car club vehicles with e-cargobikes in order to enable zero-carbon shared mobility services to be used as an alternative to private car travel.

Work continues with TfGM to identify funding opportunities for a more coherent approach to expanding the charging network.

Continued to work with schools where possible over sustainable travel, School/Play Street closures and green infrastructure (GI) initiatives:

IGNITION, Grow Green and Protecting Playgrounds are examples of GI projects undertaken in Manchester during 2020.

(AQAP6) Cars

City Centre Transport Strategy development, including the vision for a city centre where walking, cycling and public transport are the dominant modes – with 90% of morning peak trips by 2040.

Car Parking Strategy approved, major city centre car parks returned to the Council following termination of NCP agreement in January 2021, Car Park of the Future work underway to re-purpose the car parks to support GM2040 Right Mix approach and contribute to air quality and carbon budget targets. This includes exploring how car parking can support reducing air quality impacts from cars by managing demand and supporting sustainable travel mode shift, more effectively prioritising use of streets in

key locations for active and public transport users, encouraging uptake of electric vehicles and shared mobility.

Anti-idling actions continued, school engagement projects undertaken where possible by Council neighbourhood teams, and compliance work carried out by resolving isolated idling incidents informally in accordance with the Council's Enforcement Policy.

(AQAP7) Information and Resources

The Council actively participated in 2020's Clean Air Day/Week, which included promoting awareness of air pollution and measures the public can take to reduce their own exposure and impacts.

Additional measures taken outside of the AQAP include the launch of a domestic stoves and fireplaces campaign in autumn 2020, including social media promotion and the creation of an informative website hosted at CleanAirGM. The campaign seeks to educate Manchester residents of smoke control rules covering the district, the impact of such appliances on indoor and outdoor air quality, and how to reduce these impacts.

The Council also continues to review and update its own air quality and smoke control webpages on a regular basis.

2.1.3.4 Oldham Metropolitan Borough Council

(AQAP1.1 &1.2) Construction Management Guidance and Development Planning Guidance

In 2020 Environmental Health at Oldham were consulted on 518 Planning applications, some of which did not have an Air Quality impact, e.g. a single dwelling or a minor change of use. They used the Institute of Air Quality Management (IAQM) guidance on the assessment of dust on demolition and construction sites and the IAQM Air Quality planning guidance to review the applications and ensure that air quality is considered as part of the planning decision process. Appropriate conditions are then placed on planning applications to control the effects new developments have on Air Quality both at the construction and operational phase. In 2020 the council received and reviewed 14 Air Quality reports and 18 construction management reports. There

is a preplanning application advice scheme to help developers submit the correct information with their planning applications and to encourage them to consider Air Quality at a very early stage of the formation of a planning application. This service continued to operate in 2020 despite the problems caused by Covid-19. Environmental Health input into this process, informing Air Quality consultants what they require in an assessment of air quality. When in discussions with Air Quality consultants and developers in relation to Air Quality assessments, Environmental Health encourage them to incorporate EV charge points as mitigation for their developments. This has resulted in applications submitted in 2020 with charge points included as part of the application such as at schools and on housing developments. When responding to Air Pollution complaints in relation to the construction of new developments Environmental Health remind developers of the commitments, they have made in their construction management plans to reduce and prevent air pollution.

(AQAP 1.5) 20mph Zones

In late 2020, 20 mph zones were introduced in Uppermill and Greenfield. These were primarily introduced to improve road safety and help with social distancing, but we are monitoring the results on the Air Quality in the area. It is too early at this point to determine any effect from the reduction in speed limits.

(AQAP1.6) Encouraging Travel Planning

Travel Planning into major planning applications. Last year 10 travel plans were secured, four of them on schools. One of the objectives of The Local Development Plan will be ".to promote sustainable development in the borough by reducing the need to travel and encouraging walking, cycling and the use of public transport.". We continued to engage with the TfGM Travel Choices and Active Travel Teams to promote the active travel, travel choice programmes, carshare Greater Manchester and journey planning across Oldham.

(AQAP1.7) Taxi & Private Hire Licensing

Oldham has taken part in the Greater Manchester Minimum Licensing Standards consultation which concluded in December 2020. The responses of this are now being considered and proposals will be progressed to decision makers in the summer of

2021. This includes considerations about the ages and emission standards of licensed vehicles. In addition, the licensing team have issued numerous press releases and newsletters about the forthcoming Clean Air Plan consultation and the potential impacts on licensed vehicle operators. Taxi drivers have taken part in online presentations about the Clean Air Plan. We have also worked with Transport for Greater Manchester to advise on potential sites for Electric Vehicle charging points specifically for licenced vehicles. Finally, we have presented on webinars on EV charging on how taxi drivers can contribute to locations.

(AQA4.1) Cycle Programmes

Plans have been drawn up in 2020 to implement measures to promote cycling, walking and social distancing outside the borough's schools by restricting vehicle access at different times of day. In Royton there are plans for a modal filter at Chapel Street's junction with Sandy Lane, which will include side road crossings, pavement widening, a one-way cycle route and a zebra crossing linking to the new crossing on Rochdale Road. Another modal filter, or 'quiet route', for pedestrians and cyclists is planned on Coal Pit Lane which will involve closing part of White Bank Road towards the Ashton Road junction. A series of improvements are also planned along the cycle path which follows the disused railway linking Oldham town centre to Grotton. The council also plans to provide better cycle and pedestrian facilities leading to the Royal Oldham Hospital from the subway at Westhulme Avenue. A final modal filter is now planned on Wellington Street with points closures from Alexandra Retail Park and the existing Park Road scheme to connect with the Toucan crossing at the Rhodes Bank/Waterloo Street junction.

(AQAP5.1) Car Clubs

There are currently no car clubs in Oldham, however Oldham Council continue to promote CareShare GM.

(AQAP6.1) Plugged-in Places EV Charging Network

A new rapid charger was installed on Civic Centre car park in Oldham Town Centre at the end of 2020. The charger was financed by the government's Clean Air Plan 'Early Measures' funding. 2020 also saw an increase in the number of planning applications

for EV charge points in the borough of Oldham. This include applications for charge points at petrol filling stations, residential developments, schools and at retail premises.

(AQAP6.2) Car Use Allowance

We have continued with our car use allowances policy that regularly reviews roles to see if the allowance still required or if alternatives would be more appropriate, e.g. could the employee use a number of electric pool vehicles for business journeys. Where these vehicles are available staff must use these vehicles rather than their private car for business use. As part of the Council's travel plan to encourage the responsible use of bicycles for work as an alternative to driving, the Council pays above the approved amount for mileage allowance payments published by the HM Revenue and Customs. Car mileage is not paid for journeys from Oldham Town Centre to Manchester, Rochdale, Ashton, Failsworth or Royton unless there are special circumstances (e.g. travel at night / transporting equipment) and we expect staff to use public transport instead. A study was carried out in 2020 to examine if our Child Services team could use electric pool cars as an alternative to their own vehicles for business journeys. Unfortunately, this work was curtailed due to covid-19, but it is hoped to be trialled when possible. We continue to offer staff subsidised passes for public transport to encourage a modal shift from vehicles.

(AQAP6.4) School Travel

The council has joined the Modeshift Stars for Education. The STARS Education scheme recognises schools and other educational establishments that have shown excellence in supporting cycling, walking and other forms of sustainable and active travel. It is hoped this will a precursor to several schools in the Borough taking up the scheme in 2021.

(AQAP7.9) Awareness-Raising

2020 saw Oldham use social media campaigns to promote consultation on the Clean Air Plan. The consultation was tagged into themes such as encouraging parents and children to walk or cycle to school and how the council was using electric vehicles which reduces local air pollution. Clean Air Day 2020 was also promoted on social

media were people were encouraged to respond to the Clean Air Plan consultation and to ditch the car to improve air quality.

2.1.3.5 Rochdale Metropolitan Borough Council

(AQAP 1) Development Management and Planning Regulation

Masterplans have are being completed and are starting to be implemented to delivery of higher density development around the Boroughs Railway Stations.

Around Rochdale, Mills Hill and Castleton Stations work has started to progress individual developments to enhance the station environment and nearby land allocations for commercial or residential use.

Masterplans for Littleborough, and Smithy Bridge have been completed ready to progress individual projects. These masterplans form the Calder Valley Rail Corridor Strategy aimed at enhancing stations and promoting development opportunities within walking distance of railway stations and providing convenient and affordable alternative to access Manchester City Centre. The development opportunities will drive continued growth in rail patronage to justify the need for more modern rolling stock and more frequent rail services on the Calder Valley Line.

The Council is also has a development focus on Town Centre Regeneration where there is a choice of feasible sustainable transport access options.

(AQAP 2) Freight and Heavy Goods Vehicles

The Council is exploring the feasibility of providing a fleet of e-cargo bikes to assist small business in the borough to transport small loads for delivery of goods as an alternative to vans.

(AQAP 3) Buses

Rochdale BC submitted a response to TfGM's second consultation on Bus Reform seeking views on the proposal options in the light of the impacts on bus services of COVID-19. There is continued Council support for bus reform because the increasing fragmentation of bus services resulting in a number of ticketing regimes. Bus reform will allow the network to be reviewed and enable passengers to better understand fares and paying less for many journeys and encouraging greater public transport use.

(AQAP 4) Travel Choices

Work continues on Bee Network opening up more areas of the borough to encourage and promote cycling routes and improve safety for cyclists. The first Phase of the Castleton Bee Network scheme has funding and consultation has been carried out and design of Phase 2 of the scheme to Rochdale Town Centre which is in the GM Mayors Challenge Fund programme continues.

The Council is also progressing the design of a number other Bee Network schemes and will submit them for consideration when funding opportunities arise.

Design and consultation work also continues on two Active Travel Fund schemes, St Leonards Street, Middleton and Milnrow Town Centre which will both enhance the streetscape and reduce conflict with other traffic promoting more and safer pedestrian and cyclist use.

(AQAP 5) Travel Choices

Rochdale Council implemented a 12 month e-Scooter trial on 30th March 2021. Lime are initially operating the trial around Rochdale Town Centre which is aimed at encouraging short “first / last mile” journeys to be made by means of transport other than the car. During the period of the trial it is intended to progressively expand the trial to other parts of the borough. As part of the scheme the operational staff use e-Cargo bikes to collect and maintain the e-Scooters.

(AQAP 6) Cars

Rochdale Council has responded to and taken part in the consultation to implement both the Clean Air Plan and Taxi Minimum standards.

Reviewing the location of charging points in the borough with a view to increase the number available for public use.

The Council is working in partnership with Calderdale Council to set up a Calder Valley Railway Line Community Rail Partnership. This aims to connect communities with their railway line particularly for off- peak and leisure journeys when there is capacity on these services. In addition to increasing off- peak patronage the Partnership will seek to link the line to local visitor attractions and promote use of the line by communities

that do not necessary use it currently. In the future the CRP will be operated by volunteers with a paid officer and the support of the two local authorities.

(AQAP 7) Information and Resources

Work is ongoing to promote AQ internally with information available for staff online. Information posters have been displayed both in the public and staff areas signposting to further information.

Promotion of cycle routes and walking routes available in the borough.

Promoting walking in the borough including access to the gmwalking.com website and promotion of local green space.

Promotional work for the Clean Air Zone consultation including contacting businesses to provide details about the proposals and air quality in general. Part of this included information sharing into ways they can help improve air quality in general and signposting to the cleanairgm.com website.

Rochdale council promoted the clean air plan and the minimum standards for taxi licencing in the council offices which had over 120,000 visitors due to the display of Dippy the dinosaur. This promoted the message of the Clean Air Plan and also provided information as to how residents could have their say in the consultation and provided links to further information about air quality.

2.1.3.6 Salford City Council

(AQAP 1.1 and 1.2) Construction Management Guidance and Development Planning Guidance

Current Salford planning policies require developments that may be significantly polluting to be assessed and include mitigation measures where appropriate. Therefore, current policies are aligned to the latest EPUK/IAQM guidance on the Assessment of Dust from Demolition and Construction and Land-Use Planning & Development Control: Planning for Air Quality.

Saved Salford Unitary Development Plan Policies are available here. See Policy EN17 - Pollution Control.

Revised Draft Local Plan Policy PH1 aligns with this action. The Revised Draft Local Plan was published for consultation from 25 January 2019 to 22 March 2019. Comments received during this consultation and evidence available is being taken into account in developing the Publication Local Plan. Before it can be adopted, the Publication Local Plan will be subject to a further period of consultation and then it will be submitted to the Secretary of State for independent examination. It is anticipated that adoption will take place in 2021.

Salford City Council environmental consultant team recommend that baseline good design standards from the IAQM / EPUK guidance should be adopted for major developments.

Conditions are applied to new developments where appropriate regarding travel planning, electric vehicle charging and dust control to planning applications. IAQM guidance is being incorporated into planning decisions. For very large developments e.g. large housing estates, developers are asked to submit damage costs using the Defra damage cost calculator tool, and then to provide a costed mitigation package approved by the local authority to offset damage costs.

An online planning application Validation Checklist has been developed to replicate criteria used in the IAQM guidance as to when an air quality assessment may be necessary.

(AQAP 1.3) Cumulative Development Database

Salford City Council environmental consultant planning team are sending a monthly list of planning applications where an air quality assessment has been submitted to TFGM. Data sent includes date AQ assessment received, site location, site postcode, planning ref No, X/Y grid reference.

TFGM are populating GIS database with information.

(AQAP 1.6) Encouraging Travel Planning

Travel plans for certain developments are required to be submitted as part of the application process. An online planning application Validation Checklist has been developed to bring it up to date and in line with changes to national and local planning

policies, to show commitment to providing sustainable travel options with a view to reducing unsustainable modes of transport.

(AQAP 1.7) Taxi and Private Hite Licensing

The current Salford Taxi Licensing Policy includes vehicle age and emissions standards:

All vehicles which are submitted for licensing for the first time on or after 1 September 2013 must: meet or exceed Euro 5 emission standards AND be less than four years old from the date of first registration

Emissions tests carried out on all hackney carriage and private hire vehicles at four monthly mechanical inspection tests

Greater Manchester Clean Air Plan proposals include introduction of a class C charging Clean Air Zone across local roads across GM from Spring 2022. The most polluting commercial vehicles (including taxis/ PHVs) would pay a daily charge to travel on local roads in the Zone if they do not meet government Clean Air Zone guidance vehicle Euro Standards (Euro 5 or earlier diesel engine, Euro 3 or earlier petrol engine). Some permanent and temporary discounts and exemptions are proposed. The proposals also include funding measures to help operators upgrade to compliant vehicles.

Proposals for GM harmonised Minimum Licensing Standards for taxis and private hire vehicles have been developed. These have been driven by GM and the desire to improve public safety/protection by licensing safe vehicles and safe, fit and proper drivers and operators. There is a recognition that there is significant overlap with the GM Clean Air Plan proposals and 2038 carbon neutrality ambition, leading to an ambition for a zero-emission capable vehicle fleet. Current GM Minimum Licensing Standards proposals include:

- Zero Emission Capable (ZEC) standards to apply to all newly licensed vehicles in 2025; and
- ZEC standards to apply to all licensed vehicles in 2028.

(AQAP 1.8) Green Infrastructure

Salford is part of the GMCA led *'IGNITION' project*, that runs until October 2021 and aims to develop innovative financing solutions for investment in Greater Manchester's natural environment and help GM adapt to the forecast impacts of climate change.

(AQAP 2.1) Delivery and Servicing Plan Toolkit

A delivery/ service vehicle data collection exercise was carried out during May/ June 2018 for the Civic Centre campus (post room, catering deliveries and waste collections), Turnpike depot and Swinton Hall Road depot. Following the data collection exercise, an analysis & recommendations report was produced by TFGM in September 2018. Actions taken as recommended by the report include:

Swinton Hall Rd depot: adjusted standard delivery times to avoid peak time deliveries;

Turnpike depot: assessed whether any non-urgent, peak time deliveries could be re-scheduled so that they occur outside of peak times;

Civic Centre waste collections: Mostly occur in peak hours, but are part of a larger collection round. Therefore moving individual collections (from the Civic) would just move to a nearby location and so unlikely environmental benefit;

Civic Centre post room: Identified that there are many peak time deliveries and multiple courier drops during the day – may be potential to consolidate deliveries/ collections and courier activities.

A Greater Manchester wide stationary contract has been reviewed, part of this was to look at consolidation of orders and reduction of deliveries.

During the COVID-19 pandemic most City Council staff have been working remotely from home and communicating through online means, with an associated reduction in deliveries to Council premises.

(AQAP 2.8) Alternative Fuels

The City Council purchased 12 new electric Renault Kangoo vans in October 2020, which are being used in environmental services at Turnpike Depot for activities such as collecting fly tipping and officer site visits. They replaced diesel vans. The new vans will cut exhaust emissions - a diesel van would emit between 147 to 156 grams of carbon dioxide and up to 1.5 grams of nitrogen oxides (NO_X) per kilometre.

To support the electric vans, associated charging facilities were also installed at Turnpike Depot. 12 x 7KW charging points were installed, utilising funding from the OLEV workplace grant and match funding from Salford City Council.

An E-scooter trial has begun on University of Salford Peel Park and Fredrick Road campuses and extended to a route to Media City in November 2020. A further phase covering Ordsall and the City Centre launched in April 2021. A further expansion to connect Salford Royal Hospital is planned to begin in May 2021.

Initially 50 E-scooters were deployed, and this has grown to 150 with the expansion to Media City, Ordsall and the City Centre. Scooters will be monitored for use and up to a maximum of 300 could be rolled out depending on usage levels.

A lot of interest has been shown in E-scooters and it is hoped that this will shift more short journeys from car use to E-scooters. While the trial lasts for 12 months work will continue with DfT to look at whether E-scooters can be legalised to provide an alternative to car use and a greener mode of travel for short journeys. Further information is available *here*.

(AQAP 4.1) Cycle Programmes

Salford City Council secured approximately £1.9 million from the Cycle City Ambition Grant to deliver the second phase of Cycle City improvements. Implemented schemes include:

- Port Salford Greenway Phase 2 - a 3 kilometre long cycling and walking route between Worsley Village and Peel Green, comprising of a mix of traffic-free paths and quiet residential streets.
- Salford Cycleway Phase 1 – Improvements for cycling along the A6 corridor.
- Ordsall Quietway - Improvements for cycling along quiet streets between Irwell River Park, MediaCityUK and The Quays.
- Walkden Quietway - improved cycling links to Walkden train station.

As part of the response to the COVID-19 pandemic, the City Council has been awarded £0.5million from the Mayor's Cycling and Walking Challenge Fund programme for temporary walking and cycling improvements citywide. Implemented schemes include:

- Blackfriars Street - additional space created for pedestrians and cyclists.
- Liverpool Street - Provision of a lightly segregated cycle route, improving access to employment opportunities at MediaCityUK and connections to Salford Royal Hospital / Salford University.
- Irwell Street - Additional footway and cycle space created by extending the footways.
- Trinity and Islington Modal Filters - a number of trial modal filters have been implemented to restrict motorised access to properties and businesses.

(AQAP 5.1) Car Clubs

The Salford car club covers 13 sites across the city. Under normal circumstances, the fleet is comprised of a total of 39 vehicles incl. 8 fully electric Nissan Leafs (20% of total fleet).

Due to the COVID-19 pandemic the fleet of 23 vehicles based at the civic centre, Swinton which during working hours are reserved for staff travel have been reduced to 14 (10 petrol and 4 EV's).

The public Pay as You Go sites across the city are unchanged.

A tender exercise for a new operator was undertaken in early 2020, due to COVID-19 the incumbent operator (Co Wheels) has been retained, future arrangement will be reviewed as the situation becomes clearer.

Data for the Salford City Council car club has been collected and shared with TfGM. Data includes mileage, time of trip data, fleet make up data etc. TfGM are also represented on the tendering panel for the new scheme.

An analysis of car club usage was undertaken by a company called Electric Blue in March 2019. The data from this has been used to inform the specification of the new tender in order that the scheme works efficiently. This includes the integration of Salford's Travel Hierarchy within its vehicle booking system to reduce the need for travel but where it is still needed to nudge behaviour change to more sustainable travel methods.

(AQAP 6.1) Plugged in Places EV Charging Network

Conditions are applied to all planning applications where an air quality assessment is necessary, requiring type 2 charging facilities on all properties with dedicated off road parking, and a proportion of spaces (to be agreed) for apartments / high rise. Planning conditions are applied requiring FAST or RAPID charging for retail floorspace in accordance with IAQM/EPUK guidance.

Revised Draft Local Plan Policy A11 aligns with this action and is broadly consistent with IAQM/EPUK guidance. It is anticipated that adoption of the Local Plan will take place in 2021.

Central government consulted on proposals to alter existing residential and non-residential buildings regulations to include electric vehicle infrastructure requirements (closed 7th October 2019). Local plan EV charging point standards will be superseded by any higher standards introduced through the building regulations.

The City Council has been working closely with TfGM to identify suitable sites within Salford as part of the 'Early Measures' funding programme. A new rapid charger has recently been installed on Wellington Road, Swinton. An additional site on the A6 outside Crescent House has been progressed. All existing 7kw chargers have also been replaced with upgraded infrastructure.

(AQAP 6.2) Car Use Allowance

The City Council has introduced a travel hierarchy to encourage more sustainable forms of travel, along with an integrated manager dashboard to understand how employees are traveling and to highlight areas where more sustainable travel methods can be used.

(AQAP 6.3) Local Authority Parking Charges

A car parking permit scheme is currently in place at principal Council office/ depot locations. Under normal circumstances monthly salary deductions charged at 1% of employee annual salary enable employees to utilise any free spaces on the car park. Specific parking spaces allocated for pool vehicles, electric vehicles and car share vehicles at Salford Civic Centre to encourage their use. Car parks are regularly patrolled by Parking Wardens - £70 fixed penalty fee in place for not displaying a

permit. Due to the COVID-19 pandemic and staff working from home salary charges are currently suspended.

(AQAP 6.4) School Travel

Salford City Council has secured membership to Modeshift, which is a national organisation and software that allows users to engage with schools on a larger scale and schools can receive awards and accreditation for their Travel Plan work. Currently 7 schools in Salford have been signed up. Work is on-going to engage with these schools and contact other schools to get more signed up.

Salford City Council works with Living Streets and other organisations to promote active travel and reduce journeys by car to schools. There are currently 14 schools signed up to Living Streets' WOW Walk Once a Week.

The Clean Air Greater Manchester website includes schools toolkit to raise awareness of air pollution practical ways to involve teachers, parents and pupils to improve air quality. This is promoted using the City Council website air quality pages.

(AQAP 7.9) Awareness Raising

The City Council website air quality and smoke control pages are reviewed and updated regularly. These aim to raise awareness and provide guidance regarding the role stakeholders can play in improving air quality.

A public consultation on the Greater Manchester Clean Air Plan proposals and Minimum Licensing Standards was held between 8th October 2020 and 3rd December 2020. The City Council engaged with stakeholders using social media, other online material and a questionnaire.

Small social media campaigns were carried out as follows:

- October 2020 - raising awareness of smoke control area rules and using wood burning stoves correctly
- March 2021 - raising awareness of garden bonfire issues
- May 2021 - raising awareness of new regulations on selling solid fuel for domestic burning

Salford City Council investigated 135 complaints related to smoke nuisance in 2020. The majority of these were related to domestic burning and therefore this will have a beneficial effect on raising awareness of air pollution issues.

2.1.3.7 Stockport Metropolitan Borough Council

(AQAP1.6) Encouraging Travel Planning

Over the last year Stockport has continued to work with TfGM and businesses / developers to continue to trial the Travel Plan Toolkit. Despite ICT issues and some other teething problems the use of the toolkit in the assessment of planning applications related travel plans is growing. As a result Stockport is working with TfGM to further roll out the use of the toolkit across the Greater Manchester area.

Stockport has also continued to utilise online personalised travel planning (PTP) to enable members of the public how have recently moved house to plan to make more sustainable journeys in their locals area. Stockport Change of Address (COA) PTP had 102 plans done between March 2020 and January 2021. However, lockdown restrictions not to travel mean that no travel plans have been issued when a edict to avoid public travel are in place. This is due to the packs including tickets for public transport.

Stockport is in the process of reviewing it Local Plan and as part of this has been identify the best way to integrate new transport developments such as Electric Vehicle Charging and Car Share in to the Councils planning policies and guidance.

(AQAP 2.7) Engine Idling

Work is continuing to encourage vehicles to not be left idling when parked. With ongoing work to achieve a process for enforcement.

(AQAP 2.8) Alternative Fuels

Stockport also continues to support the work being undertaken by Transport for Greater Manchester to address the need to reduce the pollution caused by freight/ HGV such as the development of an electric vehicle charging strategy.

Stockport continues to support the work of TfGM to access funding and retrofit or replace buses in the fleet used in the borough to reduce the impact on air quality in Stockport.

(AQAP 4.1) Cycle Programmes

The Town Centre Travel Plan has continued improving cycling facilities in the town centre with a new Cycle route between the East of the Borough and the Town Centre expected to fully open in 2021.

Stockport is also continuing to deliver the improvements for walking and Cycling funded by the Mayoral Challenge Fund including:

- Gillbent Road Crossing Upgrade – Complete / in operation.
- Bramhall Park to A6 cycle route – Delivery in progress.
- Heatons Cycle Link – Delivery in progress.
- A6MARR Cycle/Walking Links - . Delivery in progress.
- Stockport to Offerton Cycle Link –Delivery in progress.

The council received funding to create a 3.3km parallel route along the A6 from Heaton Chapel to the town centre as part of the phase 1 funding of the DfT Emergency Active Travel Fund. Temporary works have also been delivered in district centres to give space to social distance from this funding.

(AQAP 5.1) Car Clubs

All casual car users are offered access to the Car Club for trips. Stockport's Staff Travel Plan and Guidance on Car Club usage are based on a hierarchy of travel types at which Single Occupancy Vehicle use is the last option. A further public car has been made available in Stockport Town Centre for public use. Data is being collated for this and it will support the extension of the scheme in the future. The staff use dipped in the lockdown periods but use by public users was seen to quickly recover.

(AQAP 6.1) Plugged in Places EV Charging Network

Stockport also continues to support the work being undertaken by Transport for Greater Manchester to address the need to reduce the pollution caused by vehicles

such as the development of an electric vehicle charging strategy. Stockport's electric vehicle charging network expanded this year with two new sites.

(AQAP 6.2) Car Use Allowance

The council offers salary sacrifice options for bus and rail season tickets. There is also a selection of pool bicycles that can be borrowed for staff use along with the necessary safety equipment.

(AQAP 6.3) Local Authority Parking Charges

Currently the Car Parks in the Town Centre are all charged for via permits and the cost of these permits increased when salary sacrifice for this stopped. Staff with less need for their car for work purpose are also moved out to less accessible parking. The Council offers permits for Low and No Emission vehicles to park more cheaply across the borough to encourage uptake of these technologies. There also now charging points for users of these vehicles at the civic complex.

(AQAP 6.4) School Travel

Stockport has continued to work with colleagues in education to develop travel plans with regards to schools and other education facilities when they are submitting planning applications. Bikeability training recommenced in the Autumn term 2020 following the disruption caused COVID-19. Between September and December 15 Stockport Primary Schools received Level 1/2 training and 1 Secondary School had Level 3 training. Supporting the promotion of sustainable mode use for school travel.

(AQAP 7.9) Awareness Raising

Stockport has continued to promote the use of sustainable modes of travel during the last year and encouraged walking and cycling via social media.

2.1.3.8 Tameside Metropolitan Borough Council

(AQAP 1) Development Management and Planning Regulation

Six air quality/dust impact assessments relating to new developments were submitted during 2020. All 6 concluded there would be a negligible impact on air quality as a result of the development.

A Greater Manchester wide consultation was undertaken regarding the introduction of Minimum Licensing Standards for all taxi's and private hire vehicles. The proposals include Vehicle emissions (diesel Euro 6 and above, petrol Euro 4 and above, with an ambition for a zero-emission capable fleet by 2029 vehicle age restrictions (under five years at first licensing, no older than 10 years). Local engagement with the trade was also undertaken as part of the consultation programme.

(AQAP 4) Cycling

Works to create a "pop up" cycle lane were completed to improve the route along the A6140 Lord Sheldon Way, Ashton up to Manchester Road, Audenshaw.

To help make walking and cycling the easier and safer option, we have developed a number of schemes to improve our walking and cycling infrastructure across the borough. The Council has successfully secured funding, from the Greater Manchester Combined Authority (GMCA) for 11 new walking and cycling infrastructure schemes as part of the Greater Manchester Bee Network. Consultation on these schemes has finished and work has commenced on the first two routes, Chadwick Dam Ashton and Stalybridge and the Hill Street to Trafalgar Square, Ashton route.

Additional walking and cycling schemes will be developed, to support improved infrastructure across Tameside, as and when further funding becomes available.

(AQAP 5) Travel Choices

Tameside Council intends to deliver a number of cycle and pedestrian only access schemes – known as Active Neighbourhoods or "modal filters". As part of the Active Neighbourhoods initiative the Council introduced a residents led Quiet Streets scheme. Two schemes are currently being trialled, one at Currier Lane in Ashton and another at Stamford Drive in Stalybridge. A third scheme in Dukinfield is currently in development in partnership with TfGM.

(AQAP 6) Cars

In addition to the four existing Council electric vehicle charging points available to the general public, early measures funding has enabled the introduction of two additional sites at Water Street, Ashton-under-Lyne and Darnton Road, Stalybridge.

Following a consultation with the taxi trade there are proposals for two sites that will be for the Taxi trade only. These proposed sites will be at Old Cross Street Car Park, Ashton-under-Lyne and Clarendon Street, Hyde.

There are now also various Private EV charging sites across the Borough, including IKEA Ashton-under-Lyne, Ashton Bus Station, Hyde Bus Station and Tesco's Stalybridge as well as a staff only facility at Morrisons in Hyde.

(AQAP 7) Information and Resources

A series of virtual workshops were conducted with members of the Tameside Partnership Engagement Network (PEN) as part of the Greater Manchester Clean Air Plan consultation. In addition to this several elected member briefing sessions have also been held.

National Clean Air day events were held at a number of primary schools across the borough although there were no face to face engagement session run because of the pandemic.

2.1.3.9 Trafford Metropolitan Borough Council

(AQAP1.1) Construction Management Guidance

In 2020 the Council's Pollution team reviewed 96 planning applications received for new developments within Trafford in relation to potential air quality impacts. Applications would include developments for small, medium and large residential, commercial and industrial installations. Planning applications are reviewed to assess potential impacts of new developments on local air quality including the Trafford Air Quality Management area but also locations that are included within the Greater Manchester Clean Air Plan (projected exceedances of national objective levels for nitrogen dioxide). Planning applications are also reviewed for impacts of bringing sensitive receptors to locations where levels of nitrogen dioxide exceed or are close to exceeding national objective levels. Planning applications are reviewed and checked utilising guidance contained within the Institute of Air Quality Management guidance note: The Council's Air Quality management area is provided on the Council's GIS system and the GM Clean Air Plan exceedance locations are available here.

(**AQAP 1.2) Development Management Guidance**

In addition to the national requirements, Trafford Council also requires the submission of additional supporting information to accompany certain types of planning applications. Details of air quality requirement as part of planning applications to the Council is provided within the Trafford Planning Validation Checklist.

Planning conditions for installation of EV charging points within new residential and commercial installations are included routinely. The criteria required for EV charging is typically as follows:

> *The provision of electric vehicle (EV) charge points in every new house (minimum 7kWh) with dedicated parking or 1 charge point (minimum 7khH) per 10 car parking spaces for unallocated car parking. For commercial developments there should be the provision for 1 charge point (minimum 7kWh) per 1000m2 of commercial floorspace*

Significant applications that have been received in 2020 in relation to air quality include:

- New leisure installations around the Trafford Centre, Trafford Park, Stretford
- Installation of pallet drying operation in Trafford.
- Major residential development within Carrington.
- Major residential development within Warburton
- Residential development adjacent to the A56, Sale.
- Mixed Commercial and residential development, Stretford.

The Pollution Team at Trafford Council have also reviewed a further 550 planning applications that have been submitted to take into account air quality and nuisance impacts from construction and demolition works. Construction and demolition works can cause short and long term impact on particulate levels in areas close to development. Suitable planning conditions in relation to construction management plans are utilised to control impacts from construction and demolition on local air quality

(AQAP4.1) Cycle Programmes

During 2020 a number of cycling and walking projects were completed within Trafford and these include:

- Lostock Road, Urmston – upgrade cycle track
- Longford Park area, Stretford – introduce 3 modal filters
- Moss Lane, Altrincham – temporary road closure
- Merwell Road, Flixton – introduce 1 modal filter
- Oldfield Lane, Altrincham – introduce 1 modal filter
- A56, Stretford – temporary pop up cycle lane

(AQAP 6.3) Local Authority Parking Charges

A car parking permit scheme is currently in place at Trafford Council Office. Monthly salary deductions are charged. Specific parking spaces allocated for electric vehicles at Trafford Town Hall are present to encourage their use. All Council staff are encouraged to join the bike to work scheme

(AQAP 6.4) School Travel

13 Trafford Schools are working with the Council on the WOW (Walk Once a Week) project. WOW is a pupil-led initiative where children self-report how they get to school every day using the interactive WOW Travel Tracker. If they travel sustainably (walk, cycle or scoot) once a week for a month, they get rewarded with a badge.

The Councils Safety Around School Gates Groups meet regularly to discuss issues and develop actions regarding school travel, air quality, road safety, parking and air quality around schools

(AQAP 7.1) Website and Online Resources

The Council website hosts an information resource around the prevention of pollution from vehicle engine idling. The Council's website hosts an information resource around LAQM, Smoke Control Area and burning of waste.

2.1.3.10 Wigan Metropolitan Borough Council

(AQAP 1) Development and Planning Regulation

Wigan Council has prepared a new Air Quality Supplementary Planning Guidance Document (SPD) that will be adopted in 2021. This document specifies which types of

development are required to submit an air quality assessment and the types of mitigation may be required. Developers must include electric vehicle smart charging points on most developments irrespective of the predicted impact of the development on air quality; for example, all new residential developments that include carparking will require electric vehicle smart charging points and those that include a dedicated or allocated parking space will require one for each property.

The number of planning applications received that had an air quality assessment is not currently recorded by Wigan Council. We are currently liaising with Planning colleagues to work on a digital solution.

(AQAP 4) Cycling

Wigan Council is progressing work on a cycle lane network. Air quality monitoring via NO_2 diffusion tubes has begun on key areas of this network.

Continued expansion of the Bee Network and walking and cycling infrastructure is ongoing. There is a specific working group that has been established to progress this.

(AQAP 6) Cars

A new link road has opened in 2020 linking the A49 south of Wigan town centre with the town centre. This road provides relief to two existing routes to the town centre that were congested and lined with residential properties.

The proposed M58/M6 link road now has planning approval and will alleviate congestion along the existing route, which is lined with residential properties.

This road will become part of the proposed east – west link road that will alleviate congestion along the existing A577 route, which is also lined with residential properties.

Work progressing with the installation of 3 EV charging points for taxis. 5 locations have been shortlisted and site reconnaissance is taking place for infrastructure assessments to find the best fit. EVCI working group set up and developing an issues paper.

Initial messaging for the working differently journey is being pushed out to staff. A Plan is in place to ensure all council fleet are compliant with the GM CAZ by spring 2022.

(AQAP 6.4) School Travel

Since January a further 2 schools have received funding for bikes, scooters, safety equipment and storage for bikes to encourage active travel on the school run. News stories have been posted on social media.

Work with schools has been highlighted in the virtual Eco-schools newsletter distributed to all schools in Wigan.

Walk to school week planned for the 17-21st May. All schools within Wigan have received an email from the Road Safety Team regarding walks to school week and supplementary educational materials.

Two school streets pilot schemes have now been established, on Pickup Street, Ince and Kershaw Street, Pemberton.

Date set to attend the youth cabinet

(AQAP 7.1) Website and Online Resources

Webpage updated with relevant new information.

(AQAP 7.9) Awareness Raising

GM Wide social media campaign to highlight the AQ impacts of bonfire and allotment burning - messages pushed out in March/April. Meeting arranged with suppliers to investigate the options for handheld air quality monitors.

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	(AQAP1.1) Construction Management Guidance;	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	May-17	2017	10 LA's	LA - BAU Activity	NO	*Funded*	*< £10k*	*Implementation*	Beneficial as a preventative measure Emissions reduction not attributable to this measure,.	Reduce Traffic; Increase Efficiency; Improve Fleet	This construction management guidance is now referred to by many of the local authority environmental management teams. Progress is described by district in the accompanying ASR report.	N/A
2	(AQAP1.2) Development Planning Guidance;	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	May-17	2017	10 LA's	LA - BAU Activity	NO	*Funded*	*< £10k*	*Implementation*	Emissions reduction not attributable to this measure, .	Reduce Traffic; Increase Efficiency; Improve Fleet	This guidance is now referred to by many of the local authority environmental management teams. Progress is described by district in the accompanying ASR report.	N/A
3	(AQAP1.3) Cumulative Development Database;	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Mar-17	May-17	TfGM	TfGM - BAU Activity	NO	*Funded*	*< £10k*	*Completed*	Emissions reduction not identified,	Reduce Traffic; Increase Efficiency; Improve Fleet	Database developed and updated continuously. Cumulative development across borders can now be acknowledged by neighbouring local authorities.	Limited Use.
4	(AQAP1.4) Clean Air Zone feasibility study;	Traffic Management	UTC, Congestion management, traffic reduction	Sep-17	2021 - 2023	TfGM, 10 LAs	JAQU	NO	Partially Funded	> £10 million	Planning	N/A	Reduce Traffic; Increase Efficiency; Improve Fleet	As stated in 2019 ASR this action is now covered by the Clean Air Plan work being conducted by TfGM in partnership with the 10 Local Authorities. A detailed update of progress on this is available at www.cleanairgm.com	N/A
5	(AQAP1.5) 20mph Zones;	Traffic Management	Reduction of speed limits, 20mph zones	2018	2022	TfGM	N/A	NO	Not Funded	< £10k	Implementation	Emissions reduction not measured.	Increase Efficiency	20mph zones operating across GM as part of COVID traffic regulation measures. OMBC are reviewing impacts on the air quality in the area.	The efficacy of 20mph on air quality is still uncertain. Covid has given an opportunity to monitor AQ where a 20mph zone was implemented as a safety precaution. Results tbd.

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
6	(AQAP1.6) Encouraging Travel Planning;	Promoting Travel Alternatives	Personalised Travel Planning	Jan-17	Ongoing	TfGM	TfGM - BAU Activity	NO	Funded	£50k - £100k	Implementation	N/A	Reduce Traffic; Increase Efficiency; Improve Fleet	Travel Planning is incorporated into major planning applications at the 10 local authorities. The TfGM Business Travel Network (BTN) is now made up of 450 businesses (+37 in 2020). BTN activity was coordinated online throughout 2020. TfGM-led personalised travel planning has been put on-hold during 2020.	N/A
7	(AQAP1.7) Taxi and Private Hire Quality Controls to Prioritise Low-Emission Vehicles	Promoting Low Emission Transport	Taxi Licensing conditions	2020	2021	LA's	LA - BAU Activity	NO	Funded	£50k - £100k	Implementation	N/A	Reduce Traffic; Increase Efficiency	Full public consultation on Minimum Licensing Standards undertaken in parallel with GM CAP at the end of 2020 across all ten GM authorities. Proposals would set standards for all licensed vehicles regulated by GM councils, including age and emission standards. Results of the consultation are now being considered.	N/A
8	(AQAP1.8) Green Infrastructure;	Transport Planning and Infrastructure	Other	2019	2021	TfGM	TfGM - BAU Activity	NO	Funded	£10k - 50k	Implementation	N/A	Increase Efficiency	Collaborative project between Groundwork Trust, Lancaster University, Manchester City Council and Transport for Greater Manchester, researching the use of vegetation in green barriers to trap and filter airborne pollution particles before they reach school playgrounds and classrooms. Different green barriers trialled at three schools. Monitoring has now ended, research is now being written up. Delayed due to COVID.	Funding barrier now resolved.
9	(AQAP2.1) Delivery and Servicing Plan Toolkit;	Freight and Delivery Management	Delivery and Service plans	Jan-17	Ongoing	TfGM	TfGM - BAU Activity	NO	Funded	£10k - 50k	Implementation	Emissions reduction not measured.	Reduce Traffic; Increase Efficiency; Improve Fleet	DSP resources established in TfGM Logistics & Environment Team. More information relating to each district's progress on this action is contained in the ASR main report.	LA resources for data-collection
10	(AQAP2.2) Urban Distribution Centres;	Freight and Delivery Management	Freight Consolidation Centre	2020	TBC	TfGM	TfGM - BAU Activity	NO	Partially Funded	£10k - 50k	Planning	N/A	Reduce Traffic; Increase Efficiency;	Early stages of looking into mobility hub and consolidation centre options in Greater Manchester	Market-dependant factors

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
													Improve Fleet		
11	(AQAP2.3) Urban Consolidation;	Freight and Delivery Management	Other	2019	TBC	TfGM	TfGM - BAU Activity	NO	Funded	£10k - 50k	Implementation	N/A	Reduce Traffic; Increase Efficiency; Improve Fleet	Manchester Waste consolidation project put on hold for Covid but is set to relaunch in July. Waste consolidation also being investigated in Stockport.	COVID.
12	(AQAP2.4) Access for Freight to Key Economic Centres and Sub-regional Freight Facilities;	Promoting Travel Alternatives	Promote use of rail and inland waterways	Jan-18	TBC	TfGM	TfGM - BAU Activity	NO	Not Funded	-	Planning	N/A	Reduce Traffic; Increase Efficiency	Refreshing the Greater Manchester Freight Strategy will provide guidance of this at a strategic, multi-modal level (relating to both potential and progress). Currently discussing details with districts.	Market-dependant factors
13	(AQAP2.5) Freight Information Channels;	Freight and Delivery Management	Other	May-17	on-going	TfGM	TfGM - BAU Activity	NO	Funded	£10k - 50k	Implementation	TBC	Reduce Traffic; Increase Efficiency	Travel Demand Team now well established at TfGM. Post-COVID lockdown, will continue to work on best methods for sharing information to a freight specific audience. Continue to invest in CLOCS and benefits to safety and environment.	N/A
14	(AQAP2.6) Diesel Transport Refrigeration Units (TRUs);	Freight and Delivery Management	Other	Mar-17	TBC	TfGM	TfGM - BAU Activity	NO	Not Funded	-	Aborted	N/A	Increase Efficiency; Improve Fleet	Issues related to vehicle types are covered within the GM Clean Air Plan. Limited influence identified in regard to this measure.	This topic is not at the forefront of current freight debates.
15	(AQAP2.7) Engine Idling;	Promoting Low Emission Transport	Other	Oct-17	on-going	TfGM & LA's	TfGM & LA's - BAU Activity	NO	Partially Funded	£10k - 50k	Planning	N/A	Increase Efficiency	Advice has been provided to Local Authorities on their statutory powers to enforce against idling vehicles (all vehicles - not just freight). This was in response to enquiries about specific scenarios where there had been complaints or ongoing issues with idling. A Task & Finish Group operates in GM looking at minimising emissions from idling.	N/A

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
16	(AQAP2.8) Alternative Fuels;	Promoting Low Emission Transport	Other	May-17	on-going	TfGM	TfGM - BAU Activity, OLEV, Early Measures	NO	Partially Funded	£1 million - £10 million	Planning	N/A	Increase Efficiency; Improve Fleet	TfGM has led local policy and is in the process of delivering programmes that will provide the infrastructure for alternative fuels. A refresh of the GM freight strategy is underway, this work intends to understand the potential for modal shift of freight and changes in operations that will result in more sustainable movement of freight. The refresh will also scope out a follow on “GM roadmap to low emission freight” that will optioneer the technological, operational, infrastructure and policy changes (including alternative fuels) that will be required to meet GM carbon targets. See more information on EV infrastructure in AQAP 6.2)	Conflicting agendas on alternative fuels within public and private sector. Manufacturer Warranties
17	(AQAP3.1) Bus Priority Programmes;	Transport Planning and Infrastructure	Bus route improvements	Jan-17	on-going	TfGM	TfGM - BAU Activity	NO	Funded	£500k - £1 million	Implementation	TBC	Reduce Traffic; Increase Efficiency	Priority at Traffic Signals – Initial introduction on A6 between Manchester City Centre and Stockport deemed successful, and has now been rolled out to the Salford to Bolton bus corridor as part of the SBNI programme. This has included upgrading on-bus equipment for operators running on this route. Bus priority at traffic signals is currently being scoped as part of three Quality Bus Transit corridor improvements across Bolton, Oldham, Rochdale, Tameside and Wigan	N/A
18	(AQAP3.2) Bus Improvements;	Vehicle Fleet Efficiency	Promoting Low Emission Public Transport	Jan-17	on-going	TfGM	Mixed	NO	Not Funded	< £10k	Implementation	TBC	Improve Fleet	TfGM is engaging with stakeholders to establish solutions available to optimise zero emission bus operation.	N/A

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19	(AQAP3.3) Hybrid Bus Improvements;	Vehicle Fleet Efficiency	Promoting Low Emission Public Transport	Jun-17	on-going	TfGM	TfGM - BAU Activity	NO	Funded	£500k - £1 million	Implementation	TBC	Increase Efficiency	TfGM are procuring a retrofit SCRT exhaust aftertreatment solution for the owned Optare hybrid bus fleet to improve the tailpipe emissions from Euro 5 to Euro 6 emission standard.	N/A
20	(AQAP3.4) Trial of Low-Emission Vehicles	Vehicle Fleet Efficiency	Promoting Low Emission Public Transport	Sep-17	On-going	TfGM	TfGM - BAU Activity	NO	Funded	< £10k	Implementation	N/A	Improve Fleet	TfGM has conducted a market sounding exercise to establish the options, considerations and lessons learned in relation to the implementation and operation of battery electric buses.	N/A
21	(AQAP4.1) Cycle Programmes;	Promoting Travel Alternatives	Promotion of cycling	Jan-17	On-going	TfGM	Mixed	NO	Partially Funded	> £10 million	Implementation	N/A	Reduce Traffic	Bee Network routes continued to open for improved cycling and walking in Greater Manchester, supported by TfGM-led sustainable travel promotion schemes. The total number of schemes at full delivery phase has increased to 20, with an investment from the Mayor's Challenge Fund of £40.8m. In 2020 and early 2021, two pioneering CYCLOPS (Cycle Optimised Protected Signals) junctions were opened – in Manchester and Bolton. The Manchester CYCLOPS junction saw over 36,000 journeys by people on bikes between its completion in July 2020 and the end of the year.	N/A

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22	(AQAP4.2)Public Cycle hire;	Transport Planning and Infrastructure	Public cycle hire scheme	2017	On-going	TfGM	Mayor's Challenge Fund	NO	Funded	> £10 million	Planning	TBC	Reduce Traffic	Phase 1 of GM Cycle Hire will provide self-service, 24/7 access to bikes and ebikes for more than 100,000 households, workers and visitors across the regional centre through fixed cycle hire docking stations. TfGM seeking to appoint Service Provider to design, implement, operate and manage the GM Cycle Hire Share scheme for a period of five years. Procurement began in summer 2020 and is currently on-going. TfGM plans for scheme to be fully operational by 2022.	N/A
23	(AQAP4.3) Cycle Logistics;	Promoting Travel Alternatives	Promotion of cycling	Jun-17	on-going	TfGM	TfGM - BAU Activity, INTERREG	NO	Funded	£500k - £1 million	Planning	TBC	Reduce Traffic	eHubs pilot in Greater Manchester provide c. 25 e-cargo bikes, supplied by project partner Cargaroo.	N/A
24	(AQAP4.4) Cycle to 2040;	Promoting Travel Alternatives	Promotion of cycling	Mar-17	on-going	TfGM	TfGM - BAU Activity	NO	Partially Funded	> £10 million	Implementation	TBC	Reduce Traffic	The Made to Move and Bee Network continue to be supported through two main projects: Activation (The communication and marketing of the Bee Network, enabling behaviour change), and Cycle and Stride (helping people become more active through cycling and walking, working with communities).	N/A
25	(AQAP5.1) Car Clubs;	Alternatives to private vehicle use	Car Clubs	Jun-17	on-going	TfGM & LA's	TfGM & LA - BAU Activity, INTERREG	NO	Partially Funded	£500k - £1 million	Implementation	TBC	Reduce Traffic; Improve Fleet	5-10 e-car-club vehicles provided for public hire in the eHubs Greater Manchester pilot. District Progress on LA car clubs is described in the accompanying ASR Report	N/A

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26	(AQAP5.2)Dynamic Road Network Efficiency and Travel Information System;	Public Information	Via other mechanisms	Jan-17	on-going	TfGM	TfGM - BAU Activity, SCOOT, MOVA	NO	Funded	£1m - £10 million	Implementation	N/A	Increase Efficiency	Introduction of count data at a number of Metrolink park and ride sites to enable live capacity/spaces information to be displayed on VMS and TfGM.com Shorter cycle waiting times were implemented at traffic signals to support walking and cycling and enable social distancing Further roll out of adaptive signals The use of mobile phone data to shape response to travel demand management initiatives. The use of video analytics to include demand from active travel in adaptive signal control at a number of junctions. Journey time analysis to identify hotspots relating to the return of education, leisure and retail trips following the easing of restriction intended to curb the spread of COVID-19. These data were also used to shape the TDM response and interventions to these hotspots. A range of activities to support district emergency active travel plans.	Activity absorbed into BAU. There will be capital budgets to pay for some things, such as Growth Deal, and DfT TDM grant.
27	(AQAP6.1) Plugged-in Places EV Charging Network;	Promoting Low Emission Transport	Other	Jan-18	on-going	TfGM	TfGM - BAU Activity, Early Measures Funding, OLEV Funding	NO	Partially Funded	£1 million - £10 million	Implementation	N/A	Improve Fleet	A new brand (Be.EV) launched in Summer 2020 118 fast chargers replaced with brand new smarter units. 13 of 24 double headed rapid charging points to be installed in 2021 from 'Early Measures'' funding. TfGM have secured £1.8m from OLEV taxi infrastructure fund. eHub project consists of 10 EV car Club vehicles.	N/A
28	(AQAP6.2) Car Use Allowances;	Alternatives to private vehicle use	Other	Mar-17	Progress is described by district in the accompanying ASR report.	LA's	District Budgets TBC	NO	Partially Funded	£10k – 50k	Planning	N/A	Reduce Traffic	Progress is described by district in the accompanying ASR Report	N/A

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29	(AQAP6.3) Local Authority Parking Charges;	Traffic Management	Workplace Parking Levy, Parking Enforcement on highway	Jun-17	Progress is described by district in the accompanying ASR report.	LA's	LA's	NO	Partially Funded	£10k – 50k	Planning	N/A	Reduce Traffic	Progress is described by district in the accompanying ASR Report	N/A
30	(AQAP6.4) School Travel;	Promoting Travel Alternatives	School Travel Plans	Mar-17	on-going	TfGM & LA's	TfGM & LA - BAU Activity	NO	Partially Funded	£10k - 50k	Implementation	N/A	Reduce Traffic; Increase Efficiency	In 2020 TfGM began delivery of the Active Travel Grant Programme for schools, funded through Congestion Deal funding. Working with up to 20 secondary schools and colleges to provide funding for active travel grants and support through officer time to reduce car travel to/from school or college. Also worked with a number of schools for Clean Air Day. More information relating to each district's progress on this action is contained in the ASR main report.	N/A
31	(AQAP7.1) Website and Online Resources	Public Information	Via the Internet	May-17	2019	TfGM	TfGM - BAU Activity	NO	Funded	£50k-£100k	Implementation	N/A	Reduce Traffic; Increase Efficiency; Improve Fleet	During 2020 the Clean Air GM website was viewed by 177,136 people (unique pageviews) and achieved 207,803 pageviews. This is a significant increase in unique page view on the previous year (113,509). This highlights the success of an awareness raising campaign surrounding a public consultation on the Greater Manchester Clean Air Plan proposals, which took place between 8 October and 3 December 2020.	N/A
32	(AQAP7.2) Online Route Finding;	Promoting Travel Alternatives	Personalised Travel Planning	N/A	on-going	TfGM	TfGM- BAU Activity	NO	Funded	£50k-£100k	Implementation	N/A	Reduce Traffic; Increase Efficiency	TfGM working on real time bus departure deed to be made available on Citymapper and Transit for Beta Testing enabling real time GM bus information. Engaging with Moovit and itoWorld about using this data. Early stages of introducing new journey planner onto TfGM.com encouraging customers to choose more sustainable journey choices.	Actions undertaken in relation to customer digital and travel information roadmaps.

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
33	(AQAP7.3) Pollution Alert;	Public Information	Via other mechanisms	Fen-18	On-going	TfGM	TfGM- BAU Activity	NO	Funded	£10k - 50k	Implementation	N/A	Reduce Traffic; Increase Efficiency; Improve Fleet	Pollution alert service has been set up and can be signed up for https://cleanairgm.com/air-quality-data/forecast-and-alerts. Registered subscribers in each district.	N/A
34	(AQAP7.4)Health Effects of Air Pollution in Greater Manchester;	Public Information	Via the Internet	Jan-17	on-going	TfGM	PHE BAU	NO	Funded	-	Implementation	N/A	Reduce Traffic; Increase Efficiency; Improve Fleet	In 2020, PHE released two follow-up reports to the 2019 Improving Outdoor Air Quality and Health review: (i) A guide to using the review to help choose or plan interventions and (ii) Principal interventions for local authorities. These supplemented the findings of the review and provides guidance on choosing and applying air quality interventions at a local level. The PHE Air Quality economics tool is a resource allowing an assessment of the health impact and costs of air quality. TfGM has been supported to run some initial analyses using this tool.	N/A
35	(AQAP7.5) Contingency Report Plan	Public Information	Other	N/A	on-going	TfGM	PHE BAU	NO	Partially Funded	-	Implementation	N/A	Reduce Traffic; Increase Efficiency; Improve Fleet	A draft project was developed in consultation with primary care practices to create Clean Air Practices that would include providing advice to targeted patients around air quality alerts. This has been paused due to the Covid-19 response.	N/A
36	(AQAP7.6) TfGM Air Quality Team;	Other	Other	Jan-17	Ongoing	TfGM	TfGM- BAU Activity	NO	Funded	£10k - 50k	Completed	N/A	Reduce Traffic; Increase Efficiency; Improve Fleet	Additional member to Air Quality team added in 2017, potential increase of headcount in Logistics & Environment in 19/20.	N/A
37	(AQAP7.7) Air Quality Monitoring Database;	Other	Other	Jun-17	on-going	TfGM & LA's	TfGM & LA's - BAU Activity	NO	Funded	< £10k	Implementation	N/A	Reduce Traffic; Increase Efficiency; Improve Fleet	TfGM are collating all AQ data and maintaining the database. This data is now being published on the cleanairgm.com website.	N/A

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
38	(AQAP7.8) Traffic Flow Data;	Other	Other	Jan-17	on-going	TfGM	TfGM- BAU Activity	NO	Funded	-	Implementation	N/A	Reduce Traffic; Increase Efficiency; Improve Fleet	Conducted as part of the National Clean Air Plan work.	N/A
39	(AQAP7.9) Awareness Raising;	Public Information	Via other mechanisms	Mar-17	on-going	TfGM & LA's	TfGM & LA's - BAU Activity	NO	Funded	£10k - 50k	Implementation	N/A	Reduce Traffic; Increase Efficiency; Improve Fleet	Clean Air Day in 2020 was held in October remotely. In Greater Manchester CAD centred around the Clean Air Plan Consultation release. No activities were held due to the pandemic.	N/A

$PM_{2.5}$ – 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.

Greater Manchester is taking the following measures to address $PM_{2.5}$:

(AQAP 7.9) Awareness Raising: Council webpages on air quality and smoke control are reviewed and updated regularly. These aim to raise awareness and provide guidance regarding the role stakeholders can play in improving air quality.

An 'Air Pollution for Domestic Burning' page was added to the Clean Air GM website, which provides more information on stove and fire smoke contribution to levels of $PM_{2.5}$, and directs visitors to Council websites where they can see if they live in a Smoke Control Area. These were linked to during small social media campaigns, which were carried out as follows:

- October 2020 - raising awareness of smoke control area rules and using wood burning stoves correctly
- March 2021 - raising awareness of garden bonfire issues
- May 2021 - raising awareness of new regulations on selling solid fuel for domestic burning

In 2008, the EU set a reduction target in urban background concentrations of $PM_{2.5}$ between 2010 and 2020, the amount of which varied on the 2010 recorded concentration.[16],[17] At the Salford Eccles Urban Background automatic monitoring sites, the annual mean concentration recorded in 2010 was 15 µg/m³, meaning a reduction of 15% was required by 2020. This target has been achieved in 2020 (8 µg/m³). In 2019, the annual mean

[16] AQ Expert Group, Fine Particulate Matter in the UK https://uk-air.defra.gov.uk/assets/documents/reports/cat11/1212141150_AQEG_Fine_Particulate_Matter_in_the_UK.pdf

[17] European Commission, Directive 2008/50/EC, EUR-Lex - 32008L0050 - EN - EUR-Lex (europa.eu)

concentration at this site was 9µg/m³. Greater Manchester currently has 8 sites that monitor $PM_{2.5}$: Manchester Piccadilly; Manchester Sharston;[18] Salford Eccles; Salford M60; Wigan Leigh 3, Wigan Centre, Tameside A635 Manchester Rd, and Bolton A579 Derby Street.[19] Monitoring sites that have been in place for a number of years have showed an overall downward trend in $PM_{2.5}$ annual mean concentrations.

In 2020, all stations across GM have shown compliance with the WHO annual standard of 10µg/m³, having shown a downward trend over the last 10 years. Therefore, actions aiming to reduce NO_2 concentrations have been prioritised. Many of the measures that will help achieve this will also be of some benefit in reducing greenhouse gases and particulates, which will be the focus over the longer-term.

Air quality impacts will need to be assessed for all major development schemes where an impact is likely, and mitigation measures implemented where necessary. IAQM's *Guidance on the Assessment of Dust from Demolition and Construction* has been adopted by GM local planning authorities in order to properly assess potential impacts from construction activity and implement appropriate mitigation controls consistently.

Designated under 1993 Clean Air Act legislation, each GM council has a Smoke Control Area in place, where only smokeless or 'authorised fuels' can be burnt unless they are being used in an 'exempt appliance'. The Councils mainly address breaches of this legislation through complaints systems and seek to resolve issues informally in accordance with local authority enforcement policies across the region. Additionally, particulate concentrations will also see reductions through many of the actions which are featured in the Clean Air Plan and the Air Quality Action Plan.

In addition, local authorities investigate complaints and take enforcement action where necessary against smoke nuisance from bonfires. Advice is provided to local residents on disposing of garden and household waste as an alternative to burning.

[18] $PM_{2.5}$ is usually monitored at Manchester Sharston, however the analyser is currently out of commission and awaiting replacement. It should be noted that $PM_{2.5}$ levels at this site have previously been well within legal limits since the site was set up and have not exhibited any significant upward trend.

[19] In 2020 Bolton A579 Derby Street did not meet the valid data capture requirements for formal reporting.

Public Health Outcomes Framework Indicator 3.01 - Fraction of mortality attributable to particulate air pollution

In 2010 the Department of Health included an air quality indicator based on annual average background concentrations of $PM_{2.5}$ in the Public Health Outcomes Framework (PHOF). Population exposure to anthropogenic (man-made) $PM_{2.5}$ is used as the basis of PHOF indicator 3.01. This indicator measures the percentage of all deaths in people aged 30 and over in a single year that is attributable to long-term exposure to current levels of $PM_{2.5}$. Concentrations of man-made (rather than total) $PM_{2.5}$ are used as the basis of this indicator because estimates based on total $PM_{2.5}$ could give a misleading impression of the extent to which potential policy interventions could have an impact on this measure. The data is presented as 'Fraction of mortality attributable to particulate air pollution' and is updated annually. The latest available dataset is for 2019.

Background annual average $PM_{2.5}$ concentrations for the year of interest are calculated using a computer dispersion model, based on a 1km x 1km grid. The dispersion model is calibrated using measured concentrations taken from background sites in Defra's Automatic Urban and Rural Network (http://uk-air.defra.gov.uk/interactive-map).

Expressing the mortality effect associated with long-term exposure to current levels of air pollution in this way allows comparisons to be made between different areas. In 2019, it is estimated that approximately 4.6% of deaths each year in Greater Manchester are attributable to exposure to man-made $PM_{2.5}$ particulate air pollution. The average figure for Greater Manchester is slightly lower than the England average (5.1%), but similar to the North West region average (4.5%).

It is important to note that these deaths are not individually attributed to air pollution, but instead it is an estimated measure of how many deaths air pollution contributes to. Individuals will have other contributory causes such as respiratory or cardiovascular disease.

By using the PHOF indicator for the percentage of deaths attributable to $PM_{2.5}$, it is possible to estimate the number of deaths attributable to air pollution in Greater Manchester, and in turn the number of life years lost to the local population (by estimating the average years these people would have lived if they had not died prematurely due to long term exposure to particulate air pollution). However, it is recognised that there is a high degree of uncertainty in making these estimates.

The percentage and number of attributable deaths due to exposure to man-made $PM_{2.5}$ for each Greater Manchester district in 2019 is shown in the following table, provided by Public Health England Northwest.

Table 2.3 - An estimate of the attributable deaths and years of life lost in Greater Manchester based on 2019 data

Greater Manchester District	Number of deaths (age 25+)	Percentage of attributable deaths due to exposure to man-made $PM_{2.5}$ (PHOF indicator 3.01)	Estimated number of attributable deaths due to exposure to man-made $PM_{2.5}$
Bolton	2607	4.8	125
Bury	1719	4.7	81
Manchester	3307	5.2	172
Oldham	2161	5	108
Rochdale	1984	4.7	93
Salford	2046	5.1	104
Stockport	2845	5.1	145
Tameside	2275	5.2	118
Trafford	2035	5	102
Wigan	3179	4.5	143
Greater Manchester	**24158**	**4.6**	**1111**

The table above shows that Manchester, Tameside, Salford and Stockport had the highest percentage fraction of mortality attributable to particulate air pollution in 2019. It is estimated

that there were approximately 1,111 attributable deaths due to exposure to man-made $PM_{2.5}$.

Further information on the PHOF indicator is available from the Public Health England website:

https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/3/gid/1000043/pat/6/par/E12000002/ati/101/are/E08000006

The Committee on the Medical Effects of Air Pollutants (COMEAP) has concluded that evidence associating NO_2 with health effects has strengthened substantially in recent years. COMEAP is currently considering how to quantify the mortality effects associated with long-term average concentrations of NO_2.

Further information on $PM_{2.5}$ in Greater Manchester can be found in Section 3.2.3, and further information on measures that Greater Manchester is taking to address $PM_{2.5}$ can be found in Section 2.2.1 'ASR Responses'.

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

This section sets out the monitoring undertaken within 2020 by Greater Manchester 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.

Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Greater Manchester undertook automatic (continuous) monitoring at 20 sites during 2020. Table A.1 in Appendix A shows the details of the automatic monitoring sites. NB. Local authorities do not have to report annually on the following pollutants: 1,3 butadiene, benzene, carbon monoxide and lead, unless local circumstances indicate there is a problem. The Clean Air GM page presents automatic monitoring results for Greater Manchester with automatic monitoring results also available through the UK-Air website .

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

3.1.2 Non-Automatic Monitoring Sites

Greater Manchester undertook non- automatic (i.e. passive) monitoring of NO_2 at 446 sites during 2020. Table A.2 in Appendix A presents the details of the non-automatic sites.

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

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.

3.1.3 Nitrogen Dioxide (NO_2)

Table A.3 and Table A.4 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.

Table A.5 in Appendix A compares the ratified continuous monitored NO_2 hourly mean concentrations for the past five years with the air quality objective of 200µg/m^3, not to be exceeded more than 18 times per year.

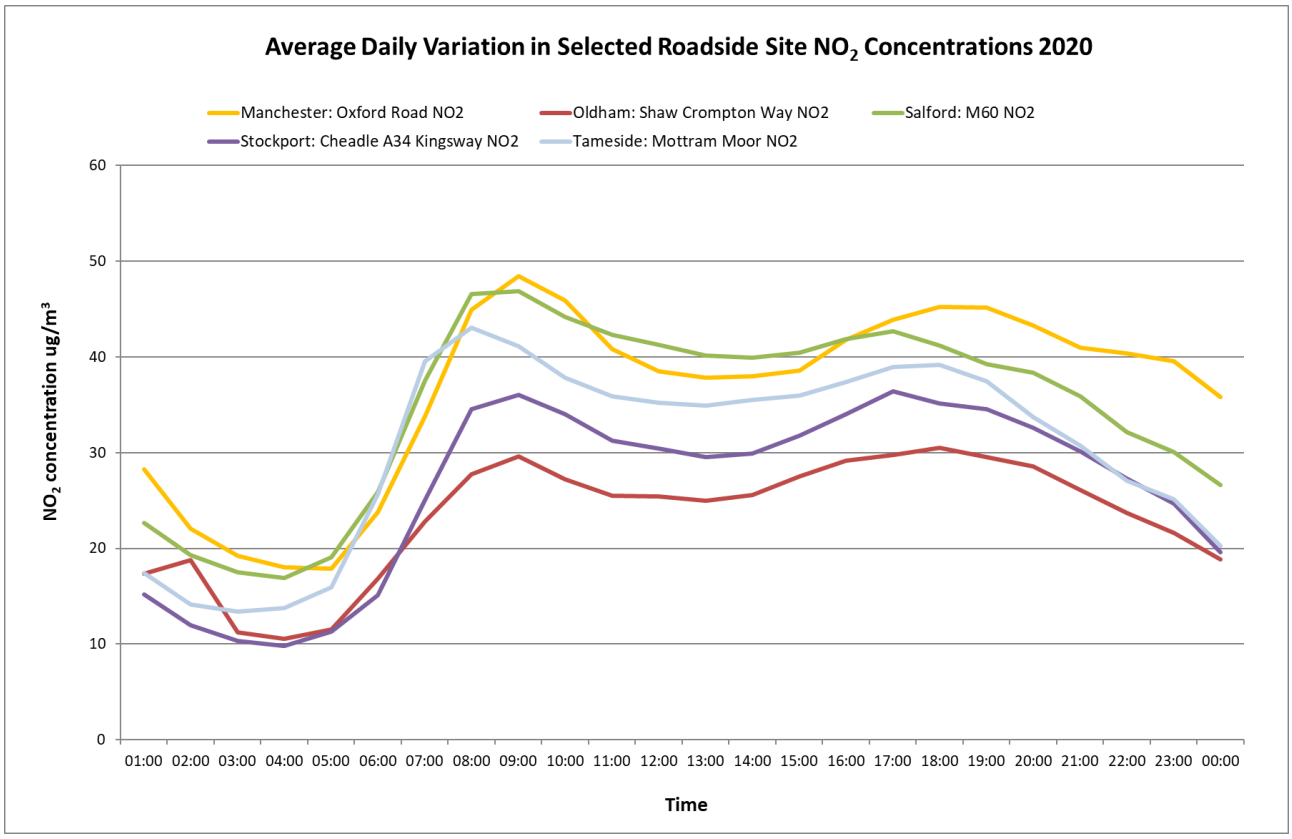
Diurnal Concentrations

A selected number of Roadside and background sites were chosen for diurnal analysis.

Roadside diurnal NO_2

Diurnal analysis of roadside sites shows a consistent trend - a peak in NO_2 concentrations occurs in the AM between 08:00 and 09:00. Another evening peak occurs from approximately 17:00 to 19:00. These peaks correspond to commuting traffic peak times. These trends are similar to 2019, however peaks occur at lower concentration levels, e.g. diurnal analysis of 2019 automatic monitoring site data showed that the Manchester Oxford Road site experienced an evening NO_2 concentration peak of ~75 µg/m^3. In 2020, this peak had reduced to ~45 µg/m^3. This is attributable to the COVID-19 pandemic and associated travel restrictions.

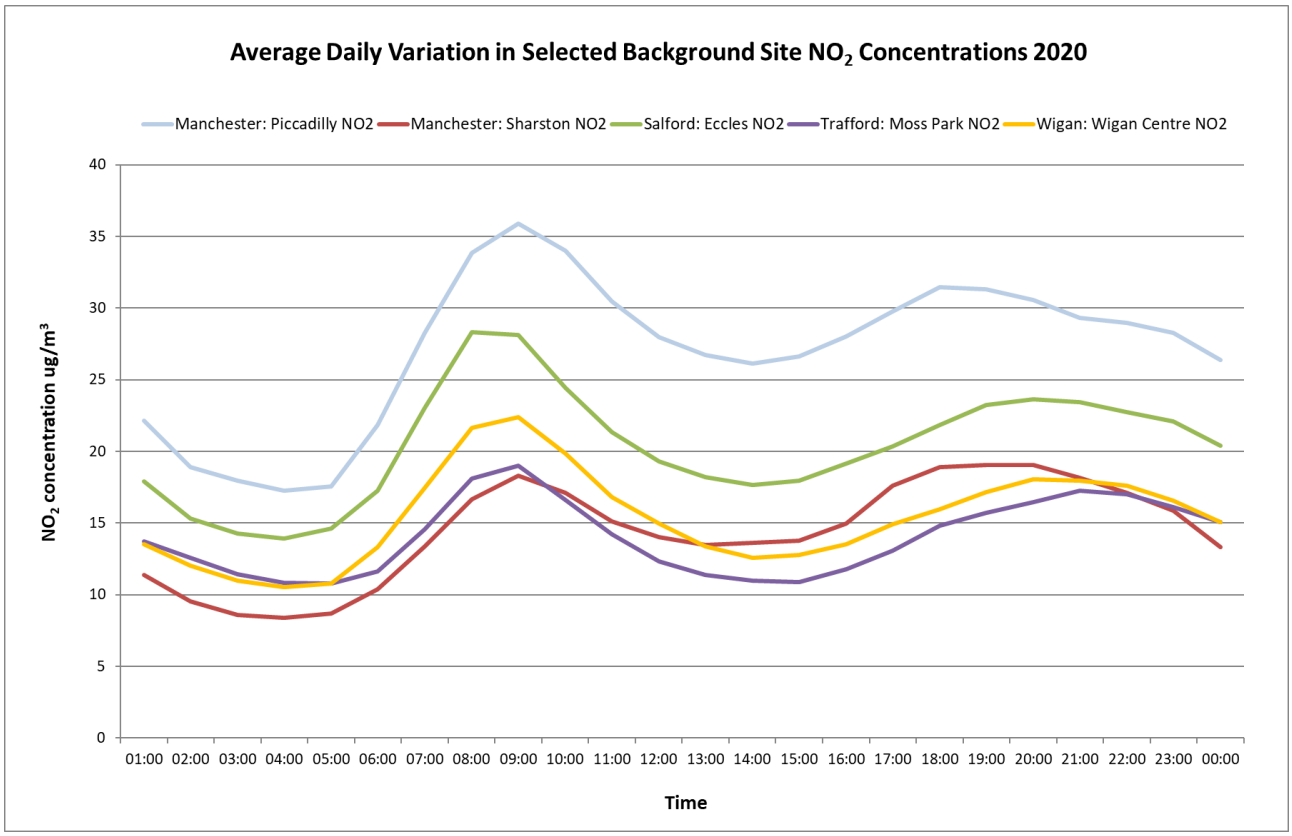
Figure 3.1 Roadside Site NO_2 Diurnal Analysis



Background diurnal NO_2

Diurnal analysis of background monitoring sites show a similar trend - a peak in NO_2 concentrations occurs in the AM at approximately 08:00. Another evening peak occurs from approximately 17:00 to 19:00. These peaks correspond to commuting traffic peak times. These trends are similar to 2019, however peaks at most sites occur at lower concentration levels,e.g. diurnal analysis of 2019 automatic monitoring site data showed that the Manchester Piccadilly site experienced a morning NO_2 concentration peak of ~45 µg/m^3. In 2020, this peak had reduced to ~36 µg/m^3.

Figure 3.2 Background Site NO_2 Diurnal Analysis



Bolton Metropolitan Borough Council

Automatic Monitoring

A new real-time monitoring station was installed on the A579, Derby Street in Bolton near to the University of Bolton. The site was commissioned in October 2020. The site is a roadside site and is located in the AQMA. The site is monitoring NO_x concentrations, PM_{10} and $PM_{2.5}$. The NO_x analyser is a NO_x model T200 chemiluminescence analyser supplied by Envirotechnology. As the analyser was only in operation for a short period of time there is insufficient data to draw any conclusions about the results from this site. The site is permanent and results will be available in the next ASR report.

Diffusion Tubes

Results are available from 50 diffusion tubes in Bolton for 2020, this is an increase of 20 tubes over 2019. A total of 39 of the sites are located with the AQMA, with 11 located outside it. During 2020 pollution levels decreased significantly at all sites, which is associated with reduced traffic flows as a result of restrictions imposed during the Covid-19 pandemic. There were no exceedances of the NO_2 annual mean objective at any of the monitoring sites in Bolton during 2020.

There were three sites with measured concentrations greater than 35 µg/m^3, BO69 - Roundabout at Junction 4 of the M61 (38 µg/m^3), BO71 - A6 Salford Road near the Red Lion Public House (36 µg/m^3) and BOA115 - Bradshawgate in Bolton Town Centre (35.6 µg/m^3). Each of these sites are roadside locations and in the case of BO69 and BO71 may be influenced by traffic on the M61 as well as local roads. BOA115 had a measured concentration of 78 µg/m^3 in May 2020, which is significantly higher than other months and results recorded for other sites during that period, which was during the first Coronavirus lockdown, this may be slightly artificially increasing the overall average concentration for this site.

The Table below shows that since 2016 pollution concentrations have been reducing at all site types (Kerbside [average of BO3, BO8, BO15, BO43, BO61], Roadside [average of BO14, BO60, BO64, BO66] and Urban Background [average of BO11, BO16, BO4, BO41, BO44, BO45, BO48, BO53, BO54, BO63, BO65, BO67, BO68]). The reduction was much more significant in 2020, but this is most likely due to reductions in road traffic and emissions as a result of restrictions imposed as a result of COVID-19 and is unlikely to be sustained once activity returns to pre-COVID levels.

Bury Metropolitan Borough Council

Automatic Monitoring

We have 3 automatic monitoring stations for NO_2 in Bury and these are located at Whitefield, Prestwich and Radcliffe. However, in early 2020 the enclosure for our site at Prestwich developed an unrepairable leak to the roof which meant the analysers had to be removed. The council then had to secure budget and approval to replace this enclosure and alongside the impacts of the pandemic this has resulted in the site being out of action for the remainder of 2020. There are therefore no useful results to report for this site for 2020. As we were replacing the Prestwich enclosure, we also decided to replace the Radcliffe enclosure which was of the same age and design. As a result, the Radcliffe enclosure was removed in December 2020 which meant we lost a small amount of data at the end of the year but still achieved 88% data capture.

Results in 2020 were well below the objective and – 30% and 40% lower than those recorded in 2019 for the Radcliffe and Whitefield sites respectively. This would appear to be demonstrating the impact of COVID 19 lockdown measures and the resulting drop in traffic flows. Although the reduction is welcome, 2020 was an anomalous year and it remains to be seen if this drastic downturn will be sustained to any significant level.

Diffusion Tubes

In 2020 we added an additional diffusion tube to our network to provide a total of 20 diffusion tube sites. The additional tube is located in Simister village which is a residential settlement adjacent to Junction 18 of the M60. This new site will give us a good indication of the levels of exposure of residents to nitrogen dioxide from the nearby motorway network.

Our diffusion tube network aims to monitor exposure close to our busier roads in relation to Local Air Quality Management responsibilities and to monitor progress towards meeting the Government directive to meet NO_2 objectives in the shortest time possible. Of our 20 sites 17 are in the AQMA.

Al levels measured in 2020 were considerably lower than 2019 and all sites were well below the NO_2 objective. The highest concentration recorded was 35µg/m^3 at Rochdale Road, Bury. This follows the pattern seen with the automatic results and appears to be demonstrating the impact of COVID 19 lockdown measures and the resulting drop in traffic flows. As mentioned above, 2020 was an anomalous year and it remains to be seen if this drastic downturn will be sustained to any significant level.

Manchester City Council

Automatic Monitoring

There are three automatic monitoring stations within Manchester's district: Piccadilly Gardens (Urban Centre), Oxford Road (Kerbside) and Manchester Sharston (Suburban Industrial).

Concentrations of NO_2 have fallen at both the Oxford Road and Piccadilly Gardens sites since 2015. During 2020 both sites met the legal annual mean limit of 40µg/m³ for this pollutant; this is the first year that this has been achieved for the Oxford Road site since monitoring commenced here in 2010. Levels at Sharston have remained relatively low and stable since monitoring commenced here in 2016, but decreased significantly during 2020.

Notwithstanding COVID-19 lockdown impacts on local air quality, which are discussed further below, long term monitoring trends indicate that there has been an improvement in air quality across the city but it is likely that, during business as usual circumstances, parts of Manchester will still remain above the annual limit for NO_2.

No technical issues were experienced at any of Manchester's automatic monitoring sites during 2020 with respect to NO_2.

Diffusion Tubes

Monitoring was carried out at 38 NO_2 diffusion tube (DT) sites in Manchester during 2020; an increase of 6 sites from 2019. Of these sites 27 are within the AQMA and 11 outside it. During 2020 there were no exceedances of the annual limit for NO_2 and all sites showed a decrease from the previous year. The highest concentration in the district was 39µg/m³ at Oxford Street (tube ref. MA29ANO).

Oldham Metropolitan Borough Council

Automatic Monitoring

OMBC has one automatic monitoring site for NO_2. The monitoring station is within a self-contained air-conditioned mobile unit along the roadside of A663 - Crompton way, in the vicinity of Shaw and Crompton town centre. The site is classified as an Urban Traffic site. The immediate area around the inlet is open with the wider area comprising of residential properties. The inlet is approximately 1 metre from the kerb of a busy road. It uses chemiluminescence to measure the NO_2. In 2020 the site captured 98% of the available data and measured an annual average of 23µg/m^3 for Nitrogen Dioxide, well below the National objective of 40µg/m^3. This is 23% lower than the previous year's level of 30µg/m^3. This is likely caused by a reduction in traffic levels due to Covid-19 lockdowns in 2020. The trend over the preceding 7 years suggests continuing reductions in levels of NO_2, which has been exacerbated in 2020 due to Covid-19.

There were no exceedances of the hourly average objective in 2020 i.e. 200µg/m^3 not to be exceeded more than 18 times a year at the site, in fact there were no incidences when the hourly mean was greater than 200µg/m^3 in 2020.

Diffusion Tubes

In 2020 OMBC had 20 diffusion tubes monitoring NO_2 across the district, the same number and in the same positions as 2019. Only 4 of the tubes were inside the Air Quality Management area designated in 2016. At the end of 2020 OMBC revaluated the locations of the tubes and installed additional tubes for 2021 (now measuring at 28 sites) based on sites predicted to have elevated levels of NO_2 from a modelling of levels of NO_2 carried out by TfGM in relation to the GM CAP.

None of the tubes annual averages exceeded the annual objective of 40µg/m^3 in 2020. The highest reading for annual average from the diffusion tubes was 38µg/m^3 at Middleton Road, Chadderton, however this result was skewed by what appears to be an erroneous result of 179µg/m^3 in December 2020. This result is nearly 5 times higher than other results for this

site. When this result is removed, the annual average for this site is 26µg/m^3. The next highest annual average was 30µg/m^3, found at the junction of Cardigan Road and Hollins Road. All tube results in 2020 were much lower than in 2019 at all locations. The biggest difference was at St Herbert's School on Broadway which was 11µg/m^3 lower in 2020 than in 2019. On average the annual average diffusion tube readings were 8µg/m^3 or 25% lower in 2020 than in 2019. This is comparable to the percentage reductions found at the automatic monitoring station for both NO_2 and PM_{10}. Again, this is likely a result of less traffic due to lockdown in 2020. None of the monthly averages for the tubes exceeded 60µg/m^3 which indicates that the hourly objective of 200µg/m^3 not to be exceeded more than 18 times a year was not exceeded at any of the locations. The highest monthly average was 40µg/m^3 measured at Hollins Road and Cardigan Road junction in February 2020, a month before lockdown began in England in 2020.

Rochdale Metropolitan Borough Council

Diffusion Tubes

Rochdale does not currently have a continuous monitoring station therefore all the pollution data is from diffusion tubes (DT) monitoring for NO_2. There are 28 DT situated around the borough, 2 new tubes were added at the beginning of 2020. The two additional tubes are located in areas within the AQMA and within areas of proposed development.

In 2020 there were no sites exceeding the maximum concentrations of 40µg/m^3, compared to 5 in 2019; and no sites exceeding 35µg/m^3 compared to 10 in 2019. The highest result monitored in Rochdale was 33.6 µg/m^3, on Manchester Old Rd.

Salford City Council

Automatic Monitoring

In 2020 there were 3 automatic air quality monitoring sites in Salford that measured NO_2 concentrations:

- Eccles – an urban background site located close to Eccles town centre, operational since 1997
- M60 – a roadside monitoring site located close to the M60 in Worsley, operational since 1999
- Glazebury – a rural background site, operational since 2004

At the Eccles monitoring site, the 2020 annual mean NO_2 concentration had decreased by 25% compared to 2019 (2020 = 20 µg/m^3, 2019 = 25 µg/m^3).

At the M60 monitoring site, the 2020 annual mean NO_2 concentration had decreased by 29% compared to 2019 (2020 = 34 µg/m^3, 2019 = 44 µg/m^3).

At the Glazebury monitoring site, the 2020 annual mean NO_2 had decreased by 36% compared to 2019 (2020 = 11 µg/m^3, 2019 = 15 µg/m^3).

These significant decreases were largely due to the COVID-19 pandemic and associated social distancing and travel restrictions. The M60 site showed the biggest decrease in terms of NO_2 annual mean concentration in 2020 compared to 2019 (a reduction of 10 µg/m^3). This is due to its roadside location, where the effect of reduced amounts of traffic emissions is likely to be most significant.

An analysis of monthly changes in pollutant concentrations has compared measured monthly average concentrations during 2020 to a predicted modelled 'business as usual' scenario. This shows that the biggest decreases in NO_2 concentrations at Salford automatic monitoring sites were observed during April 2020, during the first national lockdown. The Department for Transport (DfT) published statistics on estimated transport use during the COVID-19 pandemic. During April 2020, the estimated daily percentage of all motor vehicles with respect to the equivalent day in the first week of February 2020, across Great Britain was approximately 30%, i.e. a reduction in motor vehicles of approximately 70%. Further information is available from the report 'COVID19 lockdown effects on air quality', produced by Ricardo Energy and Environment.

The last 5 years of monitoring data has shown an overall downward trend in annual mean NO_2 concentrations at all Salford automatic monitoring sites. This downward trend has been particularly noticeable at the M60 site (2016 annual mean NO_2 concentration = 46 µg/m^3).

There were no exceedances of the annual mean or hourly national air quality objectives for NO_2 at any of the Salford automatic monitoring sites during 2020.

All three automatic monitoring sites had very high rates of NO_2 data capture during 2020 (all exceeded 95%) and there were no significant technical issues.

Diffusion Tubes

In 2020, there were 48 NO_2 diffusion tube air quality monitoring sites operated by Salford City Council, including those sites that were co-located with automatic monitoring sites for bias adjustment purposes. This is the same number of sites as in 2019.

One diffusion tube monitoring site was re-located at the beginning of 2020 (SA50 Rooke Street), due to the removal of a street furniture post it was attached to. The new location

(SA82 Rooke Street) is closer to a main road and represents a worse case exposure location for the annual mean NO_2 air quality objective.

During 2020, 33 diffusion tube sites were within the air quality management area, and 15 sites were outside the air quality management area.

45 diffusion tube monitoring sites that were not co-located with an automatic monitoring site had annual mean results available for 2020. 44 of these sites had reduced annual mean concentrations in 2020 compared to 2019, due to the COVID-19 pandemic and associated social distancing and travel restrictions. The remaining 1 site had no 2019 result available for a comparison.

Decreases in annual mean concentrations between 2019 to 2020 ranged between 15% and 35%. The biggest decreases were mainly experienced at kerbside and roadside monitoring sites, where the effect of reduced amounts of traffic emissions is likely to be most significant. The monitoring site that recorded the largest percentage decrease in annual mean concentration in 2020 compared to 2019 was SA17 Langley Road (2019 annual mean NO_2 = 38.9 µg/m^3, 2020 annual mean NO_2 = 25.3 µg/m^3).

The reduction in concentrations has meant that there were no exceedances of the NO_2 annual mean air quality objective measured by Salford City Council diffusion tubes during 2020.

The highest diffusion tube annual mean NO_2 concentration measured in Salford during 2020 was 36.9 µg/m^3 at the SA82 Rooke Street site. This is within the AQMA on the A57 Liverpool Road, which is a main throughfare and provides links to the M60 motorway.

The lowest diffusion tube annual mean NO_2 concentration measured in Salford during 2020 was 13.3 µg/m^3 at the SA02 Irlam (Princes Park) site – an urban background location.

Where longer term trends are available for roadside monitoring sites within the AQMA, there is a general downward trend in concentrations over time. This trend is also apparent for urban background monitoring sites.

Stockport Metropolitan Borough Council

Automatic Monitoring

Stockport has two automatic monitoring stations. Neither of the sites had exceedances of the annual mean objective or the hourly mean objective.

The Stockport stations NOx instruments (NO_2) had a drop off in concentrations due to COVID-19 of approx. 29% between 2019 to 2020 Primarily due to the fall in traffic numbers.

An analysis of monthly changes in pollutant concentrations has compared measured monthly average concentrations during 2020 to a predicted modelled 'business as usual' scenario. This shows that the biggest decreases in NO_2 concentrations at Stockport automatic monitoring sites were observed during April 2020, during the first national lockdown. The Department for Transport (DfT) published statistics on estimated transport use during the COVID-19 pandemic. During April 2020, the estimated daily percentage of all motor vehicles with respect to the equivalent day in the first week of February 2020, across Great Britain was approximately 30%, i.e. a reduction in motor vehicles of approximately 70%. Further information is available from the report 'COVID19 lockdown effects on air quality', produced by Ricardo Energy and Environment.

The overall trend in NO_2 in Stockport has been down and this continues in 2020 but due to the effects of COVID-19 on the pollutant sources is difficult to comment on the trend.

Diffusion Tubes

Within Stockport there are 34 Nitrogen Dioxide (NOx) diffusion tubes (5 new ones were added at the beginning of 2019) with 23 in the AQMA. Of these 23, only two showed an exceedance of the 40 µg/m3 limit. 12 of the tubes within the AQMA in 2019 showed an exceedance of 35 µg/m3 (the threshold for the declaration of the AQMA) but no tubes outside the AQMA show an exceedance of this figure.

In 2017 Stockport only had 29 diffusion tubes, 9 of which exceeded the 35µg/m3 threshold and only 7 of those still exceeded the 35 figures in 2019.

Of the 5 new tubes that were located in areas predicted to exceed 35µg/m3 in 2019, 4 do exceed with one exceeding 40 µg/m3 but obviously not enough data to see if there is any trend in these locations.

The overall trend for the Stockport data in 2019 showed a downward trend in NOx readings across the Network. In 2017 there were 8 tubes showing over 40µg/m3 and in 2019 of the 29 comparable tubes there is only 1.

The 2020 data for the 34 nitrogen dioxide tubes shows on average a 20-30% reduction in NO_2 at the majority of roadside diffusion monitoring sites within the AQMA. Only one site was below this figure and some were above 30%.

Reductions of NO_2 concentrations of between 20 and 30% were experienced at the majority of roadside diffusion tube monitoring sites within AQMA 1 between as an average over 2020. Only one site was below this figure, but some were above the 30%. This equated to a 10 to 15% reduction in annual mean concentration relative to 2019.

No tubes in Stockport exceeded the 35µg/m3 declaration threshold in 2020 with only one tube over 30µg/m3 which was tube Stockport road west, Bredbury. In 2019 this tube's annual concentration was 38µg/m3.

Overall, it is difficult to assess continuing trends for this year as it was so untypical of previous years.

Tameside Metropolitan Borough Council

Automatic Monitoring

Automatic monitoring for nitrogen dioxide was undertaken at two roadside sites during 2020, the first is on the A57 Mottram Moor, Hollingworth and a new site was commissioned in September 2020 on the A635, Manchester Road, Ashton-under-Lyne.

Concentrations at the Mottram Moor site have been falling steadily over the past 5 years. The annual average concentration fell from 40µg/m^3 in 2019 to 30 µg/m^3 in 2020. This large reduction is attributed to the reduction in road traffic during the pandemic.

Insufficient data has been collected from the Manchester Road site to date to provide any analysis.

Diffusion Tubes

The number of diffusion tube monitoring sites within the borough during 2020 was 56, unchanged from the previous year. Of these 56 sites, 29 are inside the AQMA boundary and 27 are outside.

All but one of the 56 sites monitored had an annual average below 40g/µm^3 for 2020. The exception was TA55 with an annual average of 40.9µg/m^3, although this site has shown drop of almost 15µg/m^3 this year.

Concentrations of nitrogen dioxide inside the current AQMA have, in general, been showing downward trends over the past five years, although in 2019 17 of the sites were still above the annual average objective of 40µg/m^3.

Percentage reduction in concentrations across all sites compared to last year's annual average ranged from 3.4% to 18.6%, with the highest reductions observed at sites located along the busier sections of the road network, particularly sites TA 11 and TA45 along the A57 (18.6%) and TA55 on the A635 (14.6%).

The reductions in concentrations across all sites is attributed to the reduction in traffic volumes associated with the pandemic. As restrictions are lifted it would be expected that concentrations across all sites will rise, although they may not return to previous levels.

Trafford Metropolitan Borough Council

Automatic Monitoring

Trafford Council operate 3 continuous automatic monitoring stations within the district. The monitoring stations are operated to national AURN standards and are located at:

- Stretford A56, adjacent to Stretford House, M32 9AZ
- Wellacre Academy, Irlam Rd, Urmston, Manchester M41 6AP
- Moss Park Junior School, 71 Moss Park Rd, Stretford, Manchester M32

At the Stretford A56 site, the 2020 annual mean concentration reduced by 30% to 21µg/m³ from 30µg/m³ in 2019. At Wellacre Academy, the 2020 annual mean concentration reduced by 27% to 11 µg/m³ from 15µg/m³ in 2019. At Trafford Moss Park, the 2020 annual mean concentration reduced by 26% to 14 µg/m³ from 19 µg/m³ in 2019.

Levels of nitrogen dioxide as measured at the Council's air quality monitoring stations in 2020 show a reduction in roadside and background levels of Nitrogen Dioxide when compared against 2019. The reduction in vehicle usage due to Covid restrictions is likely to have caused this reduction. However, a full conclusion will not be possible until 2021 monitoring has been completed and can be compared against other similar areas in the UK.

In 2020 there were no significant technical issues associated with the continuous monitoring stations. All stations were subject to regular servicing, calibration and data collected is subject to quality control and assurance.

Diffusion Tubes

In 2020, Trafford Council had a diffusion tube network comprising of 25 diffusion tubes, located at 17 locations. At the site of the Council's automatic monitoring stations, 3 diffusion tubes are located to assist with bias adjustment calculations. 14 diffusion tubes at 10 locations are positioned with the Councils Air Quality Management Area. 11 diffusion tubes at 7 locations are positioned outside of the Council's Air Quality Management Area.

In 2020, one additional diffusion tube was sited in a new location.

In 2020 no diffusion tube locations recorded any exceedance of national annual objective levels for Nitrogen Dioxide. The highest concentration recorded was an annual mean

concentration of 36µg/m3 at a monitoring location on the A56 in Stretford close to Junction 6 of the M60.

Wigan Metropolitan Borough Council

Automatic Monitoring

Wigan Council operated two automatic monitoring stations that monitor NO_2. These are Wigan Centre, an urban background site located at the Deanery High School on Frog Lane, close to Wigan town centre, monitoring NO_2, PM_{10}, $PM_{2.5}$ and O_3; and Wigan Leigh Three, a new roadside site located on Market Street in Leigh, close to the town centre. This monitoring station was commissioned in mid-2020, therefore data capture for 2020 is at around 50%. Wigan Leigh Three monitors NO_2, PM_{10} and $PM_{2.5}$.

The trend for NO_2 annual mean concentrations at Wigan centre show a significant decrease, having increased by 2µg/m³ between 2018 and 2019. There were no exceedances of the 1 hour mean at either site. At Wigan Leigh Three, the annual mean (recording over the second half of the year at 52.45% annual data capture) was 24µg/m³.

Diffusion Tubes

In 2020 Wigan council deployed 114 NO_2 diffusion tubes compared with 95 in 2019, an addition of 19 extra tubes. 26 NO_2 tubes were within the boundary of the 2016 AQMA.

In 2019 there were 7 NO_2 diffusion tubes that measured exceedances but in 2020 only 1 returned an annual mean result above the 40µg/m^3 legal limit value; this being WI180 at Winwick Lane which recorded an annual mean of 41.9µg/m^3 outside of the AQMA. The 2020 annual mean concentration at this site has reduced from 57.9µg/m^3 in 2019.

WI180 is located on a residential property on the A579 Winwick Lane close to the junction with the A572 Newton Road. This area is used as a short cut for traffic wishing to exit the M6 motorway at Junction 22 and reach the A580 East Lancashire Road at Lowton, and vice versa. A 7.5 tonne weight limit has recently been implemented on the southbound route (A580 to M6) to try and reduce the volume of HGVs using this route. Wigan Council is continuing to liaise with a neighbouring Local Authority to look at further mitigation, thereby reducing exposure to levels of NO_2 pollution that are above the legal limit values. A closer analysis of the monthly results at this site clearly outline traffic as the cause of this exceedance: during the April 2020 lockdown, monthly concentrations fell to below 30µg/m^3.

3.1.4 Particulate Matter (PM_{10})

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

Table A.7 in Appendix A compares the ratified continuous monitored PM_{10} daily mean concentrations for the past five years with the air quality objective of 50µg/m^3, not to be exceeded more than 35 times per year.

Diurnal Concentrations

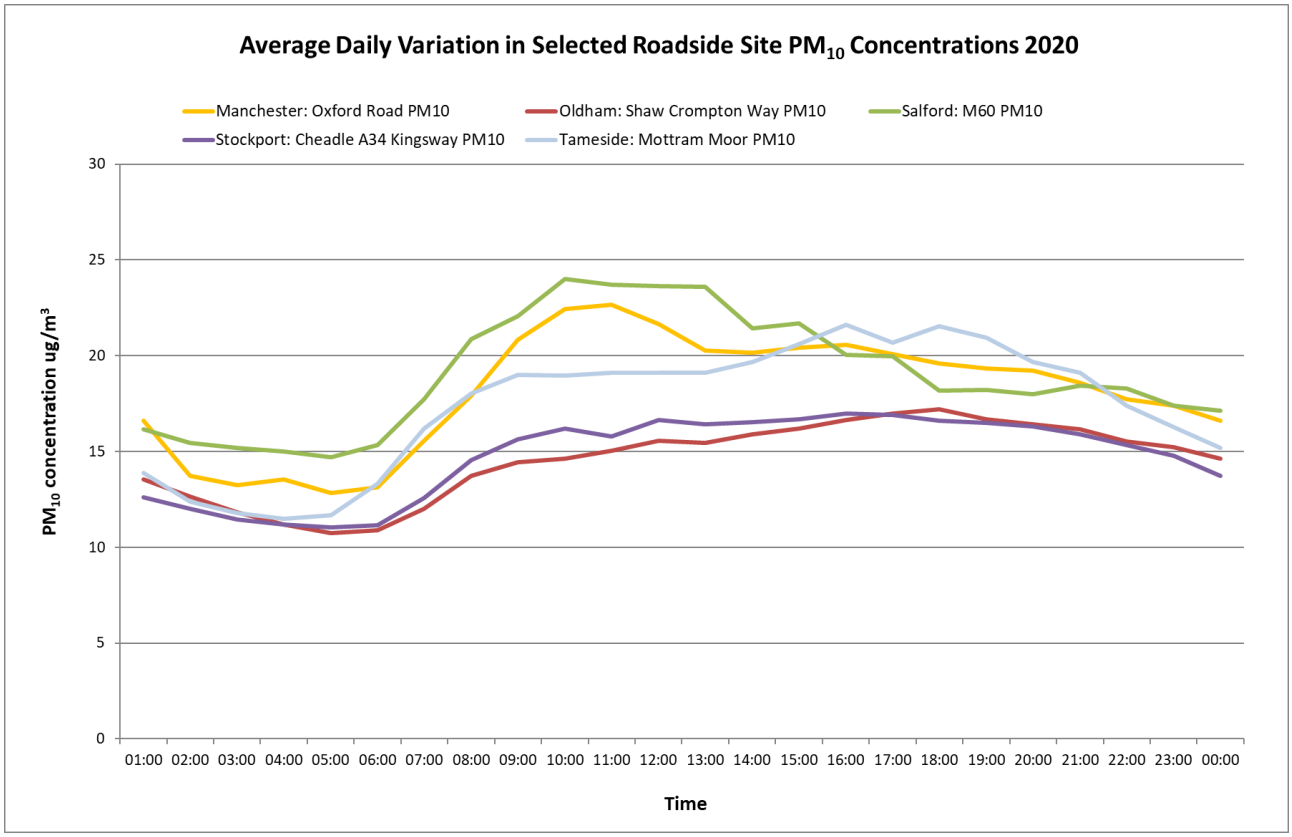
A selected number of roadside and background sites were chosen for diurnal PM_{10} analysis.

Roadside diurnal PM_{10}

Diurnal analysis of roadside sites outlines a similar trend in PM_{10} concentrations: a peak concentration occurs from approximately 08:00, then, at the Manchester Oxford Road and Salford M60 sites, this peak then gradually declines throughout the day. At the Tameside Mottram Moor site, there appears to be a second peak at around 16:00 to 19:00.

These trends are similar to 2019, however peaks at most sites occur at lower concentration levels, e.g. diurnal analysis of 2019 automatic monitoring site data showed that the Manchester Oxford Road site experienced a morning PM_{10} concentration peak of ~32 µg/m^3. In 2020, this peak had reduced to ~23 µg/m^3.

Figure 3.3 Roadside Site PM_{10} Diurnal Analysis



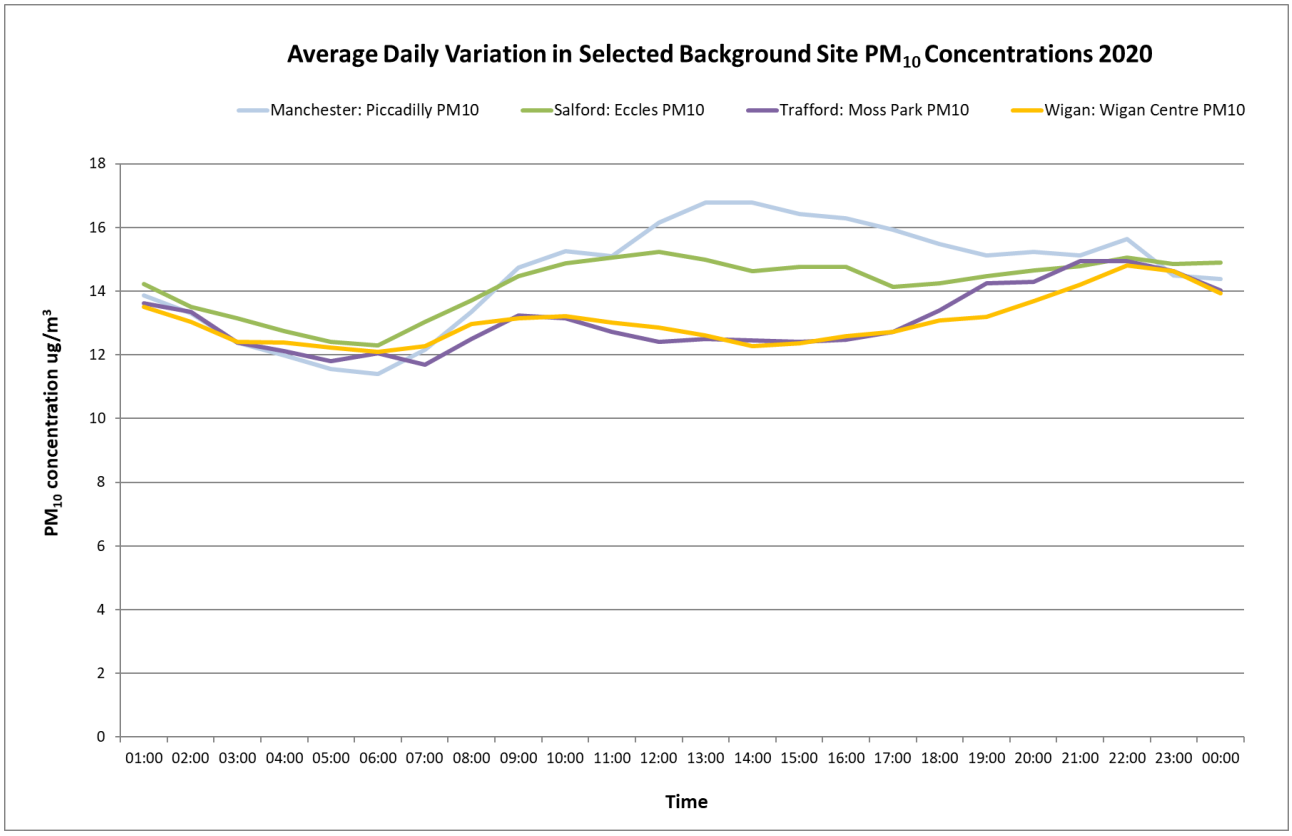
Background diurnal PM_{10}

Background monitoring sites show a similar trend for the early part of the day - a peak in PM_{10} concentrations occurs in the AM at approximately 09:00. At the Manchester Piccadilly and Salford Eccles sites, this peak continues until approximately 12:00.

At the Trafford Moss Park site, another peak in PM_{10} concentrations is observed from approximately 19:00 to 23:00.

These trends are similar to 2019, however peaks at all sites occur at lower concentration levels, e.g. diurnal analysis of 2019 automatic monitoring site data showed that the Manchester Piccadilly site experienced a midday PM_{10} concentration peak of ~23 µg/m^3. In 2020, this peak had reduced to ~17 µg/m^3.

Figure 3.4 Background Site PM_{10} Diurnal Analysis



Bolton Metropolitan Borough Council

The new real-time monitoring station installed on the A579, Derby Street in Bolton near to the University of Bolton and commissioned in October 2020 monitors PM_{10}. The site is a roadside site and is located in the AQMA. The PM_{10} analyser is a continuous Beta-attenuation particulate monitor Model BAM-1020 supplied by Enviro Technology. As the montior was only in operation for a short period of time there is insufficient data to draw any conclusions about the results from this site. The site is permanent and results will be available in the next ASR report.

The site is part of the Greater Manchester monitoring network and is operated following the national AURN guidance for Local Site Operators and relevant QA/QC procedures.

Bury Metropolitan Borough Council

We have 3 automatic monitoring stations for PM_{10} in Bury and these are located at Whitefield, Prestwich and Radcliffe. However, as mentioned above issues with the replacement of the enclosure at Prestwich meant that no useful data was collected in 2020. Also as mentioned previously the replacement of the enclosure at Radcliffe led to a small loss of data in December but this site still achieved 88% data capture.

Results in 2020 were well below the objective. Although there is a small reduction at Bury Whitefield, Bury Radcliffe shows a small increase. This increase is surprising and against the trend seen with the NO_2 results. This may be a result of significant building works that took place on the opposite side of the road (55 metres away) for a number of months in 2020. The results may also suggest that the COVID 19 lockdown measures had a greater impact on NO_2 than PM_{10} concentrations.

Manchester City Council

During 2020 PM_{10} was measured at 3 sites in Manchester. Concentrations of PM_{10} reduced at all sites during 2020, although prior to this only Piccadilly Gardens had shown a downward trend. No site has exceeded the legal limit for this pollutant since the baseline year.

Oldham Metropolitan Borough Council

PM_{10} is monitored at one site, the same site that NO_2 is monitored (see above). It uses Beta attenuation monitoring to measure hourly average PM_{10}. In 2020 the site had a 96% data capture rate. The annual mean for PM_{10} in 2020 was 15µg/m^3, well below the objective of 40µg/m^3. As with NO_2 levels this is below last year's level of 19µg/m^3 (21% lower) which again may be due a reduction in traffic due to Covid-19. In addition, the objective for the 24-hour mean of 50µg/m^3 not to be exceeded more than 35 times a year was not exceeded at this site. Indeed, the maximum 24-hour mean this year was 42 µg/m^3, significantly below last year's 24-hourly maximum of 79µg/m^3. Apart from the reduction in 2020, PM_{10} levels remained consistent over the past 6 years.

Salford City Council

In 2020 there were 2 automatic air quality monitoring sites in Salford that measured PM_{10} concentrations:

- Eccles – an urban background site located close to Eccles town centre, operational since 1997
- M60 – a roadside monitoring site located close to the M60 in Worsley, operational since 1999

At the Eccles monitoring site, the 2020 annual mean PM_{10} concentration decreased slightly compared to 2019 (2020 = 14 µg/m^3, 2019 = 15 µg/m^3).

At the M60 monitoring site, the 2020 annual mean PM_{10} concentration had also decreased slightly compared to 2019 (2020 = 19 µg/m^3, 2019 = 21 µg/m^3).

The last 5 years of monitoring data has shown an overall downward trend in annual mean PM_{10} concentrations at the Eccles monitoring site (2016 annual mean PM_{10} concentration = 17 µg/m^3). Annual mean PM_{10} concentrations at the M60 site have remained relatively stable over the last 5 years.

There were no exceedances of either the annual mean or 24-hour national air quality objectives at these monitoring sites.

Both automatic monitoring sites had very high rates of PM_{10} data capture during 2020 (both exceeded 95%) and there were no significant technical issues.

Stockport Metropolitan Borough Council

Stockport carries out automatic monitoring data at two locations, Hazel Grove A6 and Cheadle A34. Both sites monitor for PM_{10}.

The PM_{10} figure at Cheadle shows a reduction from the 2018 and 2019 figure of approximately 12%. Whilst some of this may be attributable to local actions and improvements to Vehicle fleets it is difficult to tell due to the effects of COVID-19 on sources of PM_{10}. The Hazel Grove site figure for 2020 shows an increase in PM_{10} of 5%, however this is likely due to lower data capture in 2019 due to issues with equipment. As a result comparison across years is difficult. There is also likely to have been an effect due to Covid affecting pollution sources.

Neither of the sites had more than 35 occurrences of the daily mean.

Trafford Metropolitan Borough Council

Trafford Council operates 2 continuous automatic monitoring stations within the district which monitor Particulate Matter PM_{10}. The monitoring stations are operated to national AURN standards and are located at:

- Stretford A56, adjacent to Stretford House, M32 9AZ
- Moss Park Junior School, 71 Moss Park Rd, Stretford, Manchester M32

The A56 site reduced to 14 µg/m^3 from 25 µg/m^3 in 2019, while Moss Park reduced to 13 µg/m^3 from 14 µg/m^3 in 2019.

Levels of Particulates PM_{10} as measured at the Council's roadside air quality monitoring station in 2020 shows a significant reduction in levels of when compared against 2019. The reduction in vehicle usage due to Covid restrictions is likely to have caused this reduction. There have been several incidents in 2020 which increase levels of particulates and the different number of potential sources of particulates means that it is difficult to assess the

impact of Covid Restrictions and review of national data towards the end of 2021 would be beneficial.

Tameside Metropolitan Borough Council

Currently particulates are monitored at two locations in Tameside, at the automatic monitoring station on Mottram Moor, Hollingworth and a new station commissioned in September 2020 on the A635 Manchester Road, Ashton-under-Lyne.

Results from the the station at Mottram Moor are well below both the annual average and daily objectives set out in the legislation. The annual mean has ranged between 17µg/m^3 and 19µg/m^3 between 2016 and 2019 and was recorded at 17µg/m^3 in 2020.

Insufficient data has been collected from the Manchester Road site to date to provide any analysis.

Wigan Metropolitan Borough Council

PM_{10} was monitored at two automatic stations in 2020, although one of the sites was only commissioned in mid-2020. It can be seen from the results for Wigan Centre that there was a reduction in the annual mean for PM_{10} from 16µg/m^3 in 2019 to 13µg/m^3 in 2020. At the same site, the 24-hour mean exceeded 50µg/m^3 one time, compared with three times in 2019.

3.1.5 Particulate Matter ($PM_{2.5}$)

Table A.8 in Appendix A presents the ratified and adjusted monitored $PM_{2.5}$ annual mean concentrations for the past five years.

Bolton Metropolitan Borough Council

The new real-time monitoring station installed on the A579, Derby Street in Bolton near to the University of Bolton and commissioned in October 2020 also monitors $PM_{2.5}$. The site is a roadside site and is located in the AQMA. The PM_{10} analyser is a continuous Beta-attenuation particulate monitor Model BAM-1020 supplied by Enviro Technology. As the monitor was only in operation for a short period of time there is insufficient data to draw any conclusions about the results from this site. It is a permanent site and results will be available in the next ASR report.

The site is part of the Greater Manchester monitoring network and is operated following the national AURN guidance for Local Site Operators and relevant QA/QC procedures.

Manchester City Council

$PM_{2.5}$ is normally monitored at the Piccadilly Gardens and Sharston sites, however analyser failure led to a loss of data at the latter site during 2019 and 2020. Concentrations of $PM_{2.5}$ reduced at Piccadilly Gardens during 2020. Neither site has exceeded the legal limit for this pollutant since the baseline year, and levels at Sharston have previously remained low and stable.

Salford City Council

In 2020 there were 2 automatic air quality monitoring sites in Salford that measured $PM_{2.5}$ concentrations:

- Eccles – an urban background site located close to Eccles town centre, operational since 2008
- M60 – a roadside monitoring site located close to the M60 in Worsley, operational since 2017

At the Eccles monitoring site, the 2020 annual mean $PM_{2.5}$ concentration decreased slightly compared to 2019 (2020 = 8 µg/m^3, 2019 = 9 µg/m^3).

At the M60 monitoring site, the 2020 annual mean $PM_{2.5}$ concentration was the same as in 2019 (both years = 10 µg/m^3).

Over the last 5 years, annual mean $PM_{2.5}$ concentrations have remained relatively stable at the Eccles site. Annual mean $PM_{2.5}$ concentrations are available for the last 4 years at the M60 monitoring site – again, concentrations have remained relatively stable over this period.

There were no exceedances of the annual mean national air quality objective at these monitoring sites.

Both automatic monitoring sites had very high rates of $PM_{2.5}$ data capture during 2020 (both exceeded 93%) and there were no significant technical issues.

Tameside Metropolitan Borough Council

A new station equipped to monitor for $PM_{2.5}$ was commissioned in September 2020. The site is located on the A635 Manchester Road, Ashton-under-Lyne. Insufficient data has been collected to date to provide any analysis.

Wigan Metropolitan Borough Council

At the Wigan Centre monitoring site, there was a reduction in the annual mean for $PM_{2.5}$ from 10µg/m^3 in 2019 to 8µg/m^3 in 2020.

3.1.6 Sulphur Dioxide (SO_2)

Table A.9 in Appendix A compares the ratified continuous monitored SO_2 concentrations for 2020 with the air quality objectives for SO_2. There were 0 exceedances of any of the SO_2 objectives in 2020.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
BOL03	Bolton A579 Derby Street	Roadside	371280	408577	NO_2; PM_{10}; $PM_{2.5}$	YES	NOx – chemiluminescence, PM_{10} and $PM_{2.5}$ - BAM	30	2.5	2
BURW	Bury Whitefield	Roadside	380637	406974	NO_2; PM_{10}	YES	Chemiluminescent & FDMS	24	7	3
BUR2	Bury Prestwich	Roadside	381650	403222	NO_2 PM_{10}	YES	Chemiluminescent & TEOM/BAM	15	2.5	1.5
BUR1	Bury Radcliffe	Roadside	378190	407480	NO_2 PM_{10}	YES	Chemiluminescent & TEOM/BAM	10	2.5	1.5
GLAZ	Glazebury	Rural	368759	396027	NO_2 O_3	NO	Chemiluminescent & UV absorption	132	1370	3
MAN1	Manchester Oxford Rd	Kerbside	384233	397287	NO_2 PM_{10}	YES	Chemiluminescent & BAM	1	1	2
MAN3	Manchester Piccadilly	Urban Centre	384310	398337	NO_2 O_3 PM_{10} $PM_{2.5}$ SO_2	YES	Chemiluminescent & UV absorption & BAM & FDMS & UV fluorescence	2	30	4
MAHG	Manchester Sharston	Suburban	384179	386086	NO_2 O_3 SO_2, PM_{10}	NO	Chemiluminescent & UV absorption & UV fluorescence & Partisol	35	6	2.7
CW	Oldham Crompton Way	Roadside	393887	409191	NO_2 PM_{10}	YES	Chemiluminescent & BAM	10	1	1.5
ECCL	Salford Eccles	Industrial	377926	398727	NO_2 PM_{10} $PM_{2.5}$	NO	Chemiluminescent, Palas Fidas	6	5	3.5

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
M60	Salford M60	Roadside	374811	400857	NO_2 PM_{10} $PM_{2.5}$ O_3	YES	Chemiluminescent, BAM & UV absorption	82	22.5	3
STK5	Stockport Hazel Grv	Roadside	391481	387637	NO_2 PM_{10}	YES	Chemiluminescent & TEOM/BAM	33	4	2
TAM1	Tameside Mottram M'r	Roadside	399719	395804	NO_2 PM_{10}	YES	Chemiluminescent & TEOM	4	5	4
TRF3	Trafford Wellacre Academy	Urban Background	373758	394473	NO_2	NO	Chemiluminescent	79	160	2.5
TRAF	Trafford	Urban Background	378783	394726	NO_2 PM_{10} SO_2	NO	Chemiluminescent & TEOM/BAM	60	98	2.5
TRF2	Trafford A56	Urban Traffic	379413	394014	NO_2 PM_{10}	YES	Chemiluminescent & TEOM/BAM	40	2	2.5
WIG5	Wigan Centre	Urban Background	357816	406024	NO_2 O_3 PM_{10}, $PM_{2.5}$	NO	Chemiluminescent & FIDAS	0	175	2.5
STK7	Stockport Cheadle A34	Roadside	385047	388339	NO_2 PM_{10}	YES	Chemiluminescent & TEOM/BAM	18	2	2
TS001	Tameside A635 Manchester Road	Roadside	392538	398419	NO_2; PM_{10}; $PM_{2.5}$	YES	Chemiluminescent, BAM	10	1	2
WIG07	Wigan Leigh 3	Roadside	365686	400243	NO_2; PM_{10}; $PM_{2.5}$	NO	Chemiluminescent, BAM	23	3.6	2.6

Notes:

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

(2) N/A if not applicable

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

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
BO11NO	Horwich Allotments 11	Urban Background	363712	412396	NO2	NO	40.0	138.0	NO	1.0
BO14NO	Farnworth Town Hall 14	Roadside	373839	406130	NO2	NO	3.0	2.5	NO	2.4
BO15NO	Astley Bridge t/lights 15	Kerbside	371435	411690	NO2	YES	15.0	0.5	NO	2.4
BO16NO	Drummond St 16	Urban Background	371304	411748	NO2	NO	6.0	2.0	NO	2.4
BO3NO	Quintins 3	Kerbside	370763	407929	NO2	YES	2.0	0.5	NO	2.4
BO41NO	Bolton Road 41	Urban Background	366286	406561	NO2	NO	5.0	1.5	NO	2.4
BO43NO	Bee Hive Pub kerb 43	Kerbside	365501	409887	NO2	YES	20.0	1.0	NO	2.4
BO44NO, BO45NO	1007 Chorley new 45	Urban Background	365599	409845	NO2	YES	0.0	19.0	NO	2.0
BO48NO	Ainsworth Rd L/L 48	Urban Background	375397	407457	NO2	YES	3.0	1.5	NO	2.2
BO4NO	Manley terr 4	Urban Background	371394	411718	NO2	YES	0.0	2.5	NO	2.4
BO53NO	3 Turton Road yard 53	Urban Background	373236	411968	NO2	YES	0.0	4.0	NO	2.2
BO54NO	20 Laburnham Park 54	Urban Background	372908	412120	NO2	NO	0.0	4.0	NO	2.2

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
BO60NO	134 Buckley Lane 60	Roadside	373287	405061	NO2	YES	3.0	1.5	NO	2.4
BO61NO	Primrose Street 61	Kerbside	374450	405207	NO2	YES	22.0	0.5	NO	1.0
BO62NO	13 Higher Market Street 62	Urban Background	374194	405460	NO2	YES	0.0	1.5	NO	2.4
BO63NO	Fern Street 63	Urban Background	374282	406257	NO2	YES	5.0	1.5	NO	2.4
BO64NO	Bolton Gate Retail 64	Roadside	371965	409907	NO2	YES	30.0	2.0	NO	2.4
BO65NO	Pheonix Street 65	Urban Background	372059	409877	NO2	YES	7.0	1.5	NO	2.4
BO66NO	Blackburn Road 66	Roadside	371442	411599	NO2	YES	20.0	3.0	NO	2.4
BO67NO	The Welland 67	Urban Background	365163	405640	NO2	NO	8.0	1.5	NO	2.4
BO68NO	26 Winslow Road 68	Urban Background	367672	406910	NO2	YES	13.0	1.5	NO	2.4
BO69NO	Red Lion Salford Road 69 Lamp Post No2	Roadside	369030	405809	NO2	YES	4.0	1.5	NO	2.4
BO70NO	Cornwall Avenue Lamp Post No. 4 70	Roadside	368757	405701	NO2	YES	8.0	1.5	NO	2.4
BO71NO	Junct 4 traffic Lights - northbound exit 71	Roadside	370362	405400	NO2	YES	76.0	1.5	NO	2.4

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
BO72NO	Watergate Drive 72	Roadside	370115	405372	NO2	YES	75.0	9.5	NO	2.4
BO73NO	Turton Street 73	Roadside	371805	409820	NO2	YES	3.0	2.0	NO	2.4
BO74NO	Kay Street 74	Roadside	371805	409832	NO2	YES	100.0	2.0	NO	2.4
BO75NO	Oxford St. (post near costa coffee) 75	Roadside	371623	409235	NO2	YES	50.0	3.0	NO	2.4
BO76NO, BO77NO, BO78NO	Westland Avenue 78	Roadside	373491	404836	NO2	NO	1.0	3.0	No	2.0
BO8NO	Le Mans Crescent 8	Kerbside	371352	409094	NO2	NO	5.0	0.5	NO	2.4
BOA101	Outside 26 Ivy Grove, Kearsley, Bolton, BL4 8DE (lampost 2)	Roadside	374561	405364	NO2	YES	0.5	0.5	NO	2.4
BOA102	Outside 44 Grosvenor Street, Kearsley, Bolton BL4 8DW (Lampost 4)	Roadside	374584	405525	NO2	YES	0.5	0.5	NO	2.4
BOA103	Opposite 22 Bridge Street, Kearsley, BL4 8BQ (Lampost 1)	Roadside	374526	405906	NO2	NO	7.0	1.0	NO	2.4

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
BOA104	Adjacent to 1 All Saints, Devon Street, Farnworth, BL4 7PY (Lampost 3)	Roadside	373795	406600	NO2	NO	3.0	0.5	NO	2.4
BOA105	Outside 37 Starcliffe Street, Bolton, BL3 2PT (Lampost 1)	Roadside	373604	406882	NO2	YES	1.0	0.5	NO	2.4
BOA106	Opposite 4 Sharman Street (near Asda, Manchester Rd), Bolton, BL3 2RA (lampost 1)	Roadside	372643	408070	NO2	NO	7.0	1.0	NO	2.4
BOA107	Bradford Street near traffic lights, adjacent to Haulgh Hall, Hilden Street, BL2 1JA (Lampost 10)	Roadside	372643	408070	NO2	YES	3.0	1.0	NO	2.4
BOA108	Side 52 Hilden Street, Bolton, BL2 1JD (Lampost 4)	Roadside	372430	408765	NO2	NO	0.5	1.0	NO	2.4
BOA109	Corner of Bury Road / Oakenbottom Road (Lampost	Roadside	373818	409401	NO2	YES	7.0	1.5	NO	2.4

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
	1), Bolton, BL2 6DG									
BOA110	Topp Way, near footpath to Davenport Street, Bolton, BL1 2LT	Roadside	371501	409694	NO2	YES	10.0	0.5	NO	2.4
BOA111	Corner of Ruth Street and 180-198 St. Georges Road, Bolton, BL1 2PG	Roadside	371102	409575	NO2	YES	0.5	0.5	NO	2.4
BOA112	Adjacent to Sweet Green Tavern, Derby Street (Adjacent to Crook Street), BL3 6DD	Roadside	371715	408681	NO2	YES	5.0	0.5	NO	2.4
BOA113	Outside 16 Grosvenor Street, Kearsley, Bolton, BL4 8BH	Roadside	374510	405522	NO2	YES	0.5	0.5	NO	2.4
BOA114	Near Parish Church, Church Bank, Bolton, BL1 1HX	Roadside	372122	409347	NO2	YES	100.0	0.5	NO	2.4
BOA115	Outside 93 Bradshawgate, Bolton, BL1 1QP	Roadside	371903	409026	NO2	YES	3.0	0.5	NO	2.4

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
BOA116	Outside St Patrick's Presbetary, Great Moor Street, Bolton, BL1 1NJ	Roadside	371803	408976	NO2	YES	5.0	0.5	NO	2.4
BOA117	Opposite 53 Derby Street (near university), Bolton, BL3 6HS	Roadside	371288	408592	NO2	YES	5.0	1.0	NO	2.4
BOA118	Outside The Renaissance Flats, St Georges Street, Bolton, BL1 2HB	Roadside	371832	409625	NO2	YES	0.5	1.0	NO	2.4
BOA119	Outside Marsden House (pharmacy), Marsden Street, Bolton, BL1 2JT	Roadside	371328	409251	NO2	YES	1.0	0.5	NO	2.4
BU10NO	BU10	Roadside	379854	410978	NO2	YES	NA	4.4	NO	2.5
BU11NO	BU11	Roadside	380977	411193	NO2	YES	NA	1.5	NO	2.5
BU12NO	BU12	Kerbside	381378	410741	NO2	YES	1.9	0.5	NO	2.2
BU13NO	BU13	Kerbside	381802	410639	NO2	YES	11.0	0.5	NO	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
BU14NO	BU14	Roadside	380398	410455	NO2	YES	NA	3.0	NO	2.2
BU15NO	BU15	Kerbside	380852	405204	NO2	YES	NA	0.5	NO	2.3
BU16NO	BU16	Roadside	380916	404891	NO2	YES	5.0	2.2	NO	2.6
BU17NO	BU17	Roadside	381105	404279	NO2	YES	13.0	3.0	NO	2.3
BU18NO	BU18	Roadside	382071	411362	NO2	YES	3.0	2.0	NO	2.3
BU19NO	BU19	Roadside	381321	405115	NO2	YES	7.0	12.0	NO	2.5
BU1NO	BU1 Baguley Crescent	Roadside	384372	404917	NO2	YES	7.0	1.2	NO	2.6
BU20NO	BU20	Urban Background	382974	405930	NO2	YES	6.0	25.0	NO	2.5
BU2NO	Ramsbottom Lane	Roadside	379103	417141	NO2	NO	6.0	2.0	NO	2.6
BU3ANO, BU3BNO, BU3CNO	BU3c Bury Roadside (AURN)	Roadside	380636	406969	NO2	NO	19.0	7.0	YES	3.0
BU4NO	BU4 10 Hardmans Rd Whitefield	Roadside	380964	404831	NO2	YES	8.2	18.2	NO	2.3
BU5NO	BU5 Radcliffe New Rd. Whitefield	Roadside	380501	405413	NO2	NO	6.5	2.8	NO	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
BU6NO	BU6 5 Bolton RdBury	Roadside	379658	410888	NO2	YES	0.0	5.0	NO	2.0
BU7NO	BU7Energy Show HouseWillow St Bury	Roadside	381984	411866	NO2	YES	5.0	6.0	NO	2.7
BU8NO	BU8Walmersley RdBury	Kerbside	380754	412615	NO2	NO	6.0	0.3	NO	2.6
BU9NO	BU9	Roadside	379630	411031	NO2	YES	NA	3.5	NO	2.5
MA100NO	Middleton Road	Roadside	383605	402293	NO2	YES	11.0	2.0	NO	3.0
MA101NO	Rochdale Rd, Harpurhey	Roadside	385999	402026	NO2	YES	3.0	2.0	NO	3.0
MA102NO	1133 Rochdale Rd, Charlestown	Roadside	385792	402952	NO2	YES	3.0	2.0	NO	3.0
MA103NO	Queens Rd, Harpurhey	Roadside	385431	400653	NO2	YES	2.0	2.0	NO	3.0
MA104NO	Cheetwood Primary School, Waterloo Road	Roadside	383511	399906	NO2	YES	0.5	2.0	NO	3.0
MA112NO	Epping Street	Urban Background	383988.551	396735.36	NO2	YES	2.0	2.0	NO	3.0
MA113NO	Brunswick Street	Roadside	385087	396891	NO2	YES	2.0	2.0	NO	3.0
MA24NO	Princess Street	Kerbside	383968	398070	NO2	YES	150.0	0.5	NO	3.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
MA26ANO	Chethams School	Urban Background	383973	398874	NO2	YES	5.0	59.0	NO	3.0
MA28NO	Ashton Old Road	Roadside	387951	397430	NO2	YES	3.0	1.0	NO	3.0
MA29ANO	Oxford Street	Roadside	384119	397503	NO2	YES	2.0	2.5	NO	3.0
MA36NO	Rochdale Road	Roadside	385203	399750	NO2	YES	7.0	3.0	NO	3.0
MA37NO	Princess Road	Roadside	382829	391493	NO2	YES	10.0	4.0	NO	3.0
MA59NO, MA60NO, MA61NO	Piccadilly Gardens	Urban Background	384310	398337	NO2	YES	45.0	56.0	YES	4.0
MA71NO	Great Ancoats Street	Roadside	385161	398290	NO2	YES	10.0	3.0	NO	3.0
MA72NO	Lockton Close	Urban Background	384761	397384	NO2	YES	7.0	46.0	NO	3.0
MA73NO	Hyde Road	Roadside	388604	396042	NO2	YES	12.0	3.0	NO	3.0
MA74NO	Kingsway	Roadside	385400	390095	NO2	YES	7.0	3.0	NO	3.0
MA75NO	Stockport Road	Kerbside	387363	394617	NO2	YES	3.0	0.5	NO	3.0
MA77NO	Hewitt Street	Urban Background	383576	397489	NO2	YES	2.0	8.0	NO	3.0
MA78NO	Rostron Avenue	Urban Background	386289	396828	NO2	YES	7.5	23.0	NO	3.0

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MA79NO	Victoria Terrace	Urban Background	386875	395861	NO2	NO	3.0	5.0	NO	3.0
MA80NO	Alma Road	Roadside	387358	393990	NO2	NO	3.0	7.0	NO	3.0
MA81NO	Peaceville Road	Urban Background	386589	394083	NO2	NO	10.0	18.0	NO	3.0
MA82NO, MA83NO, MA84NO	Manchester Oxford Road	Roadside	384239	397276	NO2	YES	35.0	3.0	YES	2.0
MA86ANO	Pottery Lane	Roadside	387150	396808	NO2	YES	30.0	4.0	NO	3.0
MA87ANO	Hyde Road/Pottery Ln	Roadside	386992	396569	NO2	YES	10.0	3.0	NO	3.0
MA88ANO	Hyde Rd/Clowes St	Roadside	386536	396699	NO2	YES	25.0	3.0	NO	3.0
MA88NO	Angel St	Kerbside	384469	398981	NO2	YES	5.0	1.0	NO	3.0
MA89ANO	Wenlock Way	Roadside	386710	396824	NO2	YES	20.0	2.5	NO	3.0
MA8ANO	St Pauls School	Urban Background	381398	387501	NO2	NO	10.0	1.5	NO	3.0
MA90NO, MA91NO, MA92NO	Manchester Sharston	Suburban	384202	386121	NO2	NO	35.0	44.0	YES	3.0
MA93NO	Palatine Road	Roadside	382419	390010	NO2	YES	22.0	3.0	NO	3.0

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MA94NO	Greenwood Road	Roadside	382072	388388	NO2	YES	7.0	6.0	NO	3.0
MA95NO	Ashton Old Road	Roadside	386668	397566	NO2	YES	9.0	2.5	NO	3.0
MA96NO	Ardwick Green	Roadside	385189	397167	NO2	YES	2.0	3.0	NO	3.0
MA97NO	Chester Road	Roadside	382886	397215	NO2	YES	11.0	7.5	NO	3.0
MA98NO	Greengate East	Kerbside	388460	403313	NO2	NO	10.0	35.0	NO	3.0
MA99NO	Oldham Road (rear of 6 Airton Close)	Roadside	385400	399245	NO2	YES	8.0	3.0	NO	3.0
MA9ANO	Newton Street	Kerbside	384601	398303	NO2	YES	43.0	0.5	NO	3.0
OL136RDNO	Opposite 136 Rochdale Rd	Roadside	391863	407968	NO2	NO	3.0	2.0	NO	2.0
OLARNO	Ashton Road	Roadside	392771	402951	NO2	NO	3.0	3.0	NO	2.0
OLBWNO	Broadway (Milton Drive)	Urban Background	390125	404833	NO2	NO	16.0	21.0	NO	2.0
OLCVNO	65 Chew Valley Rd	Roadside	399533	404454	NO2	NO	2.5	2.0	NO	2.0
OLCW1NO, OLCW2NO	Crompton Way 2	Roadside	393884	409183	NO2	NO	3.0	2.0	YES	1.5

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OLDLNO	Denton Lane (opp 1 Gorton St)	Roadside	390770	404695	NO2	NO	13.0	4.0	NO	2.0
OLHRNO	Hollins Road	Roadside	390756	402571	NO2	YES	5.0	3.0	NO	2.0
OLHSNO	18 High St Uppermill	Roadside	399589	405511	NO2	NO	2.0	2.0	NO	2.0
OLHURNO	617 Huddersfield Rd	Roadside	395561	405751	NO2	NO	4.0	2.0	NO	2.0
OLMRNO	Middleton Rd (Chadd Precinct)	Roadside	390746	405397	NO2	NO	3.5	2.0	NO	2.0
OLMSNO	Mellor St	Urban Background	388871	400997	NO2	NO	1.6	1.6	NO	2.0
OLNSLNO	New Street, Lees	Urban Background	395225	404648	NO2	NO	2.0	1.5	NO	2.0
OLNSNO	Norfolk St	Urban Background	391217	403860	NO2	NO	10.0	20.0	NO	2.0
OLOBNO	Outside 409 Broadway	Roadside	389715	403625	NO2	YES	10.0	8.0	NO	2.0
OLRDNO	Rochdale Road	Roadside	392111	406432	NO2	NO	3.0	3.0	NO	2.0
OLRRNO	45 Ripponden Rd	Roadside	394210	405752	NO2	NO	1.0	1.5	NO	2.0
OLSHSNO	St Herberts School	Roadside	390394	405454	NO2	YES	11.0	2.3	NO	2.0

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OLSMWNO	St Marys Way	Urban Background	392748	405294	NO2	NO	8.0	21.0	NO	2.0
OLTSNO	Terrace St	Roadside	393782	405093	NO2	YES	26.0	12.0	NO	2.0
RO10ANO	Holmes Street Rochdale	Urban Background	388800	413603	NO2	YES	0.0	4.0	NO	2.0
RO12ANO	Halifax Road Wardle	Roadside	392072	415687	NO2	YES	20.0	2.0	NO	2.0
RO13ANO	725 Halifax Road Wardle	Urban Background	392042	415707	NO2	NO	30.0	15.0	NO	2.0
RO14ANO	Hey Bottom Calderbrook	Rural	393665	417816	NO2	NO	100.0	50.0	NO	2.0
RO15ANO	M62 Depot Milnrow	Roadside	392976	411906	NO2	YES	30.0	10.0	NO	2.0
RO16ANO	Ashfield Road Milnrow	Urban Background	392542	411709	NO2	YES	40.0	2.0	NO	2.0
RO17ANO	Kingsway Rochdale	Urban Background	391214	412609	NO2	YES	50.0	12.0	NO	2.0
RO18ANO	Penn Street	Urban Background	389877	413590	NO2	NO	150.0	1.0	NO	2.0
RO19ANO	John street	Roadside	389971	413646	NO2	NO	100.0	2.0	NO	2.0
RO20ANO	Manchester Road / Bader Drive	Roadside	385748	408931	NO2	YES	50.0	1.0	NO	2.0
RO21ANO	York Street, Heywood	Roadside	385820	410776	NO2	NO	50.0	2.0	NO	2.0

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RO22ANO	19 Kingsway Rochdale	Roadside	390464	411976	NO2	YES	20.0	2.0	NO	2.0
RO23ANO	174 Oldham Road	Roadside	390377	412030	NO2	NO	5.0	2.0	NO	2.5
RO24ANO	Ogden Street, castleton	Urban Background	388089	410822	NO2	NO	13.0	3.0	NO	2.5
RO25ANO	Oldham Road, Middleton	Roadside	387792	406013	NO2	NO	1.0	1.5	NO	3.0
RO26ANO	Whitworth Road	Roadside	389782	414241	NO2	YES	20.0	1.5	NO	3.0
RO27ANO	156 Halifax Road Rochdale	Roadside	390710	414563	NO2	YES	1.0	1.5	NO	2.5
RO28ANO	Smithy Bridge Road	Urban Background	392871	415127	NO2	NO	1.0	2.0	NO	3.0
RO2ANO	Trows Lane Caslteton	Urban Background	388537	409942	NO2	YES	0.0	20.0	NO	2.0
RO29ANO, RO30ANO, RO31ANO	Rochdale Monitoring Station 3	Roadside	389326	411411	NO2	YES	18.0	4.0	YES	1.5
RO3ANO	52 Cherrington Drive Caslteton	Urban Background	388581	409797	NO2	YES	100.0	15.0	NO	2.0
RO4ANO	Middleton Library	Urban Background	387080	406278	NO2	YES	0.0	5.0	NO	2.0
RO5ANO	Mossway Middleton	Roadside	386870	404044	NO2	YES	100.0	10.0	NO	2.0
RO6ANO	Heywood Old Rd Birch	Kerbside	385413	408320	NO2	YES	15.0	1.0	NO	2.0

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RO7ANO	Edinburgh Way Rochdale	Urban Background	388603	411925	NO2	YES	0.0	6.0	NO	2.0
RO8ANO	Manchester Old Rd Rochdale	Roadside	388932	412091	NO2	YES	0.0	4.0	NO	2.0
RO9ANO	Manchester Rd Rochdale	Kerbside	389057	412217	NO2	YES	0.0	1.0	NO	2.0
SA13NO	Buckland Road	Urban Background	379613	399784	NO2	NO	12.5	2.5	NO	3.0
SA14NO	Broughton Kerb	Kerbside	382833	401035	NO2	NO	36.0	2.0	NO	3.0
SA16NO	Wharton School	Urban Background	371187	404453	NO2	NO	11.0	2.0	NO	2.5
SA17NO	Langley Road	Kerbside	380742	400862	NO2	NO	12.5	2.5	NO	3.0
SA01NO	Irlam Locks	Urban Background	372767	394104	NO2	NO	16.0	45.0	NO	1.7
SA20NO, SA21NO, SA22NO	M60 Monitoring Station Collocation	Roadside	374811	400857	NO2	YES	85.0	22.0	YES	3.0
SA23NO, SA24NO, SA29NO	Eccles AURN Collocation	Urban Background	377926	398727	NO2	NO	7.0	6.0	YES	3.5
SA25NO	Wythop Gardens	Urban Background	381304	398014	NO2	YES	10.5	22.5	NO	3.0
SA26NO	Halton Bank sub station	Roadside	380718	399597	NO2	YES	16.0	6.0	NO	2.0

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SA27NO	Trinity Way	Roadside	383078	398741	NO2	YES	2.0	1.5	NO	3.0
SA02NO	Irlam (Princes Park)	Urban Background	372140	394210	NO2	NO	55.0	67.0	NO	3.0
SA31NO	Walkden Road	Roadside	374025	401905	NO2	YES	8.5	3.5	NO	3.0
SA33NO	Arnfield Drive	Roadside	372600	400721	NO2	NO	4.7	4.5	NO	2.5
SA34NO	Liverpool Road	Roadside	375367	397800	NO2	YES	1.0	8.0	NO	1.7
SA38NO	Clifton Primary School	Roadside	377796	403065	NO2	NO	7.5	1.7	NO	2.5
SA39NO	Trinity Way /Chapel Street	Roadside	383040	398563	NO2	YES	0.0	8.0	NO	3.0
SA44NO	Pembroke Street/ White Street	Roadside	380412	398439	NO2	YES	2.5	13.5	NO	3.0
SA04NO	Crompton	Urban Background	377453	401830	NO2	NO	1.5	21.5	NO	2.5
SA51NO	Liverpool Road / Claybank	Roadside	375213	397661	NO2	YES	3.5	2.5	NO	2.0
SA52NO	Liverpool Road / Sealand Drive	Roadside	375149	397587	NO2	YES	7.0	6.0	NO	2.5
SA53NO	Ryecroft Lane	Urban Background	374757	399891	NO2	NO	7.5	3.5	NO	3.0
SA54NO	Ryecroft Lane	Urban Background	374901	399981	NO2	NO	4.5	1.5	NO	3.0

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SA55NO	Leigh Road / Ellenbrook Road	Roadside	372871	400734	NO2	YES	17.5	3.0	NO	2.5
SA56NO, SA57NO, SA58NO	Glazebury AURN Collocation	Rural	368759	396027	NO2	NO	130.0	1372.0	YES	3.0
SA59NO	West Crown Avenue	Roadside	381822	397895	NO2	YES	11.0	14.0	NO	3.0
SA60NO	Regent Road	Roadside	382445	397724	NO2	YES	2.5	4.5	NO	2.0
SA61NO	Campbell Road	Roadside	377269	400943	NO2	YES	13.5	3.5	NO	2.5
SA62NO	Maurice Drive/ Maurice Street	Roadside	380768	399637	NO2	YES	6.5	4.0	NO	3.0
SA63NO	Greenacre Lane	Roadside	374673	399912	NO2	YES	4.0	21.5	NO	3.0
SA64NO	Lancaster Road	Roadside	378804	399844	NO2	YES	14.0	1.5	NO	2.5
SA65NO	Eccles Old Road	Roadside	378584	399220	NO2	YES	10.0	3.0	NO	3.0
SA66NO	Stannard Road	Roadside	375118	398502	NO2	YES	4.5	12.5	NO	3.0
SA68NO	Walkden High Street	Roadside	373570	403096	NO2	YES	3.5	2.5	NO	3.0
SA69NO	Agecroft Road/ Pendlecroft Ave	Roadside	379397	401370	NO2	YES	8.5	1.5	NO	3.0
SA70NO	Belvedere Road	Roadside	381677	398832	NO2	YES	10.5	21.5	NO	3.0

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SA71NO	Trafford Road	Roadside	381351	397185	NO2	YES	15.0	1.0	NO	3.0
SA72NO	Station Road, Swinton	Roadside	377536	401804	NO2	YES	2.0	0.5	NO	3.0
SA73NO	Worsley Brow	Roadside	374576	400611	NO2	YES	75.0	3.0	NO	3.0
SA74NO	Canal Bank	Roadside	376315	399249	NO2	YES	5.4	2.7	NO	3.0
SA75NO	Weaste Road	Roadside	379608	398539	NO2	YES	7.5	0.5	NO	3.0
SA76NO	Langworthy Road	Roadside	380540	398422	NO2	YES	6.9	2.9	NO	3.0
SA77NO	Albion Way	Roadside	381686	398504	NO2	YES	5.6	13.5	NO	3.0
SA78NO	Broughton Road	Roadside	381220	399530	NO2	YES	2.5	1.5	NO	3.0
SA79NO	Chapel Street	Roadside	382602	398519	NO2	YES	2.0	10.0	NO	3.0
SA80NO	Hawthorne Drive	Roadside	375428	401417	NO2	YES	10.4	1.5	NO	3.0
SA81NO	Regent Road 2	Roadside	382561	397722	NO2	YES	85.0	2.5	NO	3.0
SA82NO	Rooke Street	Roadside	375394	397816	NO2	YES	10.0	2.2	NO	3.0
SA09NO	St Marks School	Urban Background	374741	400937	NO2	NO	0.0	125.0	NO	2.0

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SA83NO	Bury New Road	Roadside	382945	400732	NO2	YES	7.7	3.0	NO	2.5
SA84NO	Langley Road	Roadside	380776	400834	NO2	NO	2.0	2.0	NO	2.5
SA85NO	Bray Avenue	Roadside	375991	399237	NO2	YES	5.7	9.0	NO	2.5
SA86NO	Bury Old Road	Kerbside	383819	401771	NO2	NO	4.5	0.5	NO	2.5
SA87NO	Merlin Road	Roadside	372225	395616	NO2	NO	9.0	2.4	NO	2.5
ST10NO	Deneside Cres. Hazel Grove	Urban Background	392781.3	387271.486	NO2	NO	0.0	6.0	NO	1.5
ST11NO	Nrwood Road	Roadside	391083.207	387938.058	NO2	YES	3.0	3.0	NO	2.0
ST12NO	A34 Kingsway	Roadside	385047	388339	NO2	YES	12.0	3.0	YES	2.0
ST13NO	Prospect Vale	Urban Background	384675	386295	NO2	NO	4.0	2.0	NO	2.0
ST14NO	a34 kingsway	Roadside	385047	388339	NO2	YES	8.0	1.0	YES	2.5
ST15NO	Bramhall Lane	Roadside	389886.321	388961.332	NO2	YES	4.0	2.0	NO	2.0
ST16NO	Stockport Rd. Bredbury	Roadside	391568.679	391225.883	NO2	YES	20.0	3.0	NO	2.5
ST17NO	Yew Street	Urban Background	388442.177	390077.487	NO2	YES	82.0	2.0	NO	2.0

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ST18NO	Debenhams	Urban Background	389272.176	390440.811	NO2	YES	20.0	3.0	NO	2.0
ST19NO	Gorton Road	Roadside	389479.355	393463.855	NO2	YES	0.0	2.2	NO	2.5
ST1NO	Whitehill Firestation	Urban Background	389077.064	392011.822	NO2	YES	99.0	93.0	NO	1.5
ST20NO	Kennilworth Road	Urban Background	386921.232	389528.855	NO2	YES	3.0	15.0	NO	2.0
ST21NO	Carmichael Street	Urban Background	388598.721	389415.552	NO2	NO	0.0	1.0	NO	2.5
ST22NO, ST23NO, ST24NO	A6 Hazel Grove	Roadside	391483	387635	NO2	YES	5.0	5.0	YES	2.5
ST25NO	Central Marple	Roadside	395770.138	388655.432	NO2	NO	5.0	3.0	NO	2.5
ST26NO	Midland Road	Urban Background	389396	387357	NO2	NO	0.0	10.0	NO	1.5
ST27NO	Pinewood Close	Urban Background	387091	391384	NO2	NO	0.0	6.0	NO	1.5
ST28NO	Finney Lane	Roadside	385700.368	386219.938	NO2	YES	2.0	3.0	NO	2.5
ST29NO	Russell Street	Urban Background	390087.5	388545.187	NO2	NO	0.0	2.0	NO	1.5
ST2NO	A34 Kingsway	Roadside	385047	388339	NO2	YES	10.0	3.0	YES	2.0
ST31NO	ST 31	Roadside	3392441	391747	NO2	YES	10.0	2.0	NO	2.5

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ST32NO	ST 32	Roadside	389480	390957	NO2	YES	30.0	2.0	NO	2.5
ST33NO	ST 33	Roadside	390416	390087	NO2	YES	10.0	2.0	NO	2.5
ST34NO	ST 34	Roadside	388304	390351	NO2	YES	6.0	2.0	NO	2.5
ST35NO	ST 35	Roadside	395020	385360	NO2	YES	2.0	2.0	NO	2.5
ST3NO	Denby Lane	Urban Background	388550.609	391846.389	NO2	YES	8.0	2.0	NO	2.5
ST4NO	Compstall Library	Rural	396469.167	390800.349	NO2	NO	15.0	20.0	NO	2.5
ST5NO	Lyme Farm	Rural	396853	382768	NO2	NO	8.0	100.0	NO	1.5
ST6NO	Cheadle Library	Urban Background	396853	382768	NO2	NO	24.0	20.0	NO	1.5
ST7NO	Civiccentre Hazel Grove	Kerbside	392063.265	386972	NO2	YES	3.0	1.0	NO	2.0
ST8NO	Marshalls Yard Hazel Grove	Urban Background	392016.512	387042.782	NO2	YES	14.0	15.0	NO	1.5
ST9NO	Alderley Close Hazel Grove	Urban Background	392742.788	385680.865	NO2	NO	0.0	25.0	NO	1.5
TA10NO	Guide Lane Audenshaw	Roadside	392516	396748	NO2	YES	12.0	1.0	NO	3.0
TA11NO	Market Street Hollingworth	Roadside	400390	396025	NO2	YES	1.0	2.0	NO	3.0

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TA12NO	TA 12	Urban Background	393451	394330	NO2	NO	26.0	53.0	YES	3.0
TA13NO	Manchester Road Ashton	Roadside	392586	398431	NO2	YES	10.0	3.0	NO	3.0
TA14NO	Park Parade Ashton	Roadside	393710	398790	NO2	YES	30.0	10.0	NO	3.0
TA15NO	Stamford Street Stalybridge	Roadside	395371	398736	NO2	YES	17.0	12.0	NO	3.0
TA16NO	Manchester Road Audenshaw	Roadside	391435	397970	NO2	YES	8.0	2.0	NO	3.0
TA17NO	Manchester Road Droylsden	Roadside	389106	398242	NO2	YES	4.0	4.0	NO	3.0
TA18NO	Manchester Road Denton	Roadside	391970	395521	NO2	YES	35.0	2.0	NO	3.0
TA19NO	Manchester Road Crown Point	Roadside	392477	395505	NO2	YES	1.0	1.0	NO	3.0
TA1NO	King Street Dukinfield	Roadside	394050	397190	NO2	YES	1.0	2.0	NO	3.0
TA20NO	B&Q Hyde	Roadside	394610	395102	NO2	YES	3.0	1.0	NO	3.0
TA21NO	Woolley Lane Hollingworth	Roadside	400423	395965	NO2	YES	1.0	1.0	NO	3.0
TA22NO	Dean Street Ashton	Urban Background	393249	399159	NO2	NO	20.0	25.0	NO	4.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
TA23NO	Cavendish Mill Ashton	Urban Background	393620	398588	NO2	NO	1.0	9.0	NO	3.0
TA24NO	Manchester Road Denton (Golf Course)	Roadside	390475	395621	NO2	YES	5.0	2.0	NO	3.0
TA25NO	Oldham Road Ashton	Roadside	396950	402329	NO2	YES	5.0	2.0	NO	3.0
TA26NO	Lees Road Ashton	Roadside	394948	401815	NO2	NO	150.0	2.0	NO	3.0
TA27NO	Acres Lane Stalybridge	Roadside	396177	398218	NO2	YES	17.0	2.0	NO	3.0
TA28NO	George Lawton Hall Mossley	Roadside	393050	401038	NO2	NO	5.0	2.0	NO	3.0
TA29NO	Keane Street Ashton	Suburban	393370	399494	NO2	NO	3.0	75.0	NO	3.0
TA2NO	Hyde Town Hall Hyde	Roadside	394788	394933	NO2	NO	2.0	2.0	NO	3.0
TA30NO	Oldham Road Ashton	Roadside	393419	399691	NO2	YES	2.0	2.0	NO	3.0
TA31NO	Waterton Lane Mossley	Suburban	396899	402449	NO2	NO	5.0	2.0	NO	3.0
TA32NO	Arundel Street Mossley	Suburban	396982	402437	NO2	NO	2.0	2.0	NO	3.0
TA33NO	Lees Road Mossley	Roadside	397010	402560	NO2	NO	2.0	2.0	NO	3.0
TA34NO	Stockport Road Mossley	Roadside	397060	402581	NO2	NO	16.0	2.0	NO	3.0

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TA35NO	Stamford Road Mossley	Roadside	397080	402540	NO2	NO	8.0	2.0	NO	3.0
TA36NO	Argyle Street Mossley	Suburban	397060	402387	NO2	NO	2.0	1.0	NO	3.0
TA37NO	Stamford Street Mossley	Roadside	396728	402073	NO2	NO	7.0	2.0	NO	3.0
TA38NO	Albermarle Terrace Ashton	Urban Background	394006	399392	NO2	NO	11.0	22.0	NO	3.0
TA39NO	Cowhill Lane Ashton	Urban Background	394114	399366	NO2	NO	11.0	1.0	NO	3.0
TA3NO	Thompson Road Denton	Urban Background	390961	395417	NO2	YES	3.0	2.0	NO	3.0
TA40NO	Cowhill Lane Railway Bridge Ashton	Urban Background	394066	399314	NO2	NO	45.0	1.0	NO	3.0
TA41NO	Newton Street Ashton	Urban Background	394118	399259	NO2	YES	1.0	2.0	NO	3.0
TA42NO	Stamford Street East Ashton	Urban Background	394494	399010	NO2	NO	6.0	2.0	NO	3.0
TA43NO	Scotland Street Ashton	Roadside	394214	398933	NO2	YES	30.0	13.0	NO	3.0
TA44NO	Hattersley Road West Hattersley	Urban Background	397418	394398	NO2	NO	22.0	12.0	NO	3.0
TA45NO, TA46NO, TA47NO	Mottram Moor Hollingworth	Roadside	399719	395805	NO2	YES	5.0	5.0	YES	4.0

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TA48NO	Howard Lane Denton	Roadside	392699	395733	NO2	NO	5.0	75.0	NO	3.0
TA49NO	Park Parade AuL adjacent to Asda car park lamp post 56	Roadside	393731	398770	NO2	YES	46.0	3.0	NO	3.0
TA50NO	Park Parade/ Bentinck St AuL lamp post no.	Roadside	393498	398704	NO2	YES	140.0	4.0	NO	3.0
TA51NO	Park Parade AuL adjacent to Bentinck St car park lamp post no 113	Kerbside	393314	398624	NO2	YES	82.0	1.0	NO	3.0
TA52NO	Park Parade AuL adjacent to Bentinck St car park lamp post no	Roadside	393509	398737	NO2	YES	103.0	5.0	NO	3.0
TA53NO	Stockport Rd AuL lamp post no.2	Roadside	393133	398536	NO2	YES	31.0	3.0	NO	3.0
TA54NO	Quality Vans William St AuL lamp post no.16	Roadside	392958	398474	NO2	YES	5.0	3.0	NO	3.0
TA55NO	39/41 Manchester Rd AuL lamp post no.17	Roadside	392743	398465	NO2	YES	2.0	3.0	NO	3.0
TA56NO	Manchester Rd AuL Slip Rd	Roadside	392490	398368	NO2	YES	11.0	5.0	NO	3.0

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	S/W lamp post no.28									
TA57NO	Manchester Rd AuL bus stop opposite BP station lamp post no.	Roadside	392844	398544	NO2	YES	2.0	3.0	NO	3.0
TA58NO	Manchester Rd AuL St Peter's Church lamp post no.3	Roadside	393080	398620	NO2	YES	40.0	4.0	NO	3.0
TA59NO	Astley Rd Stalybridge lamp post no.15	Roadside	395652	399140	NO2	NO	23.0	2.0	NO	3.0
TA5NO	Green Lane Hollingworth	Urban Background	400507	396518	NO2	NO	6.0	2.0	NO	3.0
TA60NO	33 Darnton Rd Stalybridge lamp post no.30	Roadside	395747	399112	NO2	NO	9.0	1.0	NO	3.0
TA61NO	42 Darnton Rd Stalybridge lamp post no.27	Roadside	395682	399171	NO2	NO	6.0	1.0	NO	3.0
TA62NO	Darnton Rd Stalybridge adjacent to boating lake lamp post no.23	Roadside	396576	399240	NO2	NO	25.0	4.0	NO	3.0
TA63NO	Lees Rd Ashton lamp post 15	Roadside	394921	400922	NO2	NO	17.0	1.0	NO	3.0

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TA664NO	143 Stamford Street Stalybridge	Roadside	395782	398757	NO2	YES	2.0	1.0	NO	3.0
TA9NO	TA 9	Urban Background	393451	394330	NO2	NO	0.0	53.0	YES	3.0
TR13NO	13 A56 White City	Roadside	381221	396441	NO2	YES	300.0	5.0	NO	4.0
TR15NO	Bradley Lane, Stretford	Roadside	379089	393282	NO2	YES	350.0	5.0	NO	4.0
TR16ANO, TR16NO	Kingsway Park School, Urmston	Roadside	377418	395689	NO2	YES	30.0	2.0	NO	3.0
TR18NO	10 A56 Marsland Road	Urban Background	378822	389010	NO2	NO	15.0	15.0	NO	3.0
TR19ANO, TR19BNO, TR19NO	19w Moss Park School (AQMA)	Urban Background	378783	394728	NO2	NO	65.0	100.0	YES	2.0
TR20ANO, TR20BNO, TR20NO	20w A56 Chester Road AQMA	Roadside	379411	394014	NO2	YES	42.0	5.0	YES	3.0
TR21NO	21w Cleansing Depot	Roadside	379619	396371	NO2	NO	700.0	5.0	NO	3.0
TR22NO	22w A56 corner of De Quincey Road	Kerbside	377061	390086	NO2	YES	50.0	1.0	NO	4.0
TR23ANO	Barton Road	Roadside	376395	396360	NO2	YES	3.0	4.0	NO	3.0
TR23NO	Stroma Gardens	Roadside	376438	396383	NO2	YES	3.0	10.0	NO	3.0

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TR24NO	Tithebarn Road	Roadside	379263	385812	NO2	NO	16.0	3.0	NO	3.0
TR25ANO, TR25BNO, TR25NO	Wellacre Academy	Urban Background	373755	394477	NO2	NO	10.0	160.0	YES	2.0
TR26ANO, TR26NO	A56 Stretford	Kerbside	379272	393666	NO2	YES	160.0	1.0	NO	3.0
TR27NO	Warburton Lane Partington	Kerbside	371419	390760	NO2	NO	20.0	1.0	NO	2.0
TR28NO	Stamford New Road, Altrincham	Kerbside	376851	387792	NO2	NO	100.0	1.0	NO	2.0
TR5NO	5 Sale Leisure Centre	Urban Background	379052	392043	NO2	NO	10.0	5.0	NO	4.0
TR9NO	9 Trafford, Town Hall 12 (m)	Urban Background	380933	395889	NO2	YES	20.0	100.0	NO	3.0
W193NO	Atherton Road	Kerbside	363885	403129	NO2	NO	3.0	0.5	NO	2.0
W194NO	Mort Lane	Kerbside	371037	402472	NO2	NO	80.0	0.5	NO	2.0
W195NO	Gibfield Park Way	Roadside	366254	403598	NO2	NO	95.0	3.0	NO	2.0
W196NO	Schofield Lane	Kerbside	365850	403263	NO2	NO	130.0	0.5	NO	2.0
W197NO	Bolton Road, Aspull	Kerbside	361411	408031	NO2	NO	25.0	2.0	NO	2.0

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W198NO	Wigan Road, New Springs	Kerbside	360370	407235	NO2	NO	16.0	0.5	NO	2.0
W199NO	Charles Street, Golborne	Roadside	360501	397988	NO2	NO	20.0	0.5	NO	2.0
W200NO	Plank Lane, Leigh	Kerbside	363262	399815	NO2	NO	10.0	1.0	NO	2.0
W201NO	Woodhouse Lane	Roadside	356493	406759	NO2	NO	19.0	1.0	NO	2.0
W202NO	Mesnes Road	Roadside	358222	407262	NO2	NO	6.0	1.0	NO	2.0
W203NO	Wigan Road, Boars Head	Roadside	357569	408645	NO2	NO	11.0	2.0	NO	2.0
W204NO	Orchard Street, Ashton	Roadside	358161	399510	NO2	NO	17.0	2.0	NO	2.0
W205NO	Lime Grove, Lane Head	Kerbside	362151	396604	NO2	NO	6.5	1.0	NO	2.0
W206NO	Winwick Lane C	Kerbside	362162	396325	NO2	NO	66.0	1.0	NO	2.0
W207NO	Winwick Lane D	Kerbside	362171	396329	NO2	NO	65.0	1.0	NO	2.0
W208NO, W209NO, W210NO	Wigan Leigh 3	Roadside	365687	400238	NO2	NO	23.0	2.0	YES	2.0
W211NO	Bridgewater Road, Mosley Common	Roadside	372302	401593	NO2	NO	11.0	2.0	NO	2.0

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W212NO	A49 Wigan (nr J25)	Roadside	356827	402135	NO2	NO	143.0	2.0	NO	2.0
W213NO	Newton Road B	Roadside	362019	396512	NO2	NO	42.0	1.0	NO	2.0
W214NO	Newton Road C	Kerbside	361979	396501	NO2	NO	26.0	1.0	NO	2.0
W215NO	Newton Road D	Kerbside	361981	396490	NO2	NO	16.0	1.0	NO	2.0
W216NO	Darlington Street B	Kerbside	358464	405342	NO2	NO	2.0	1.0	NO	2.0
WI114NO	Atherleigh Way, Leigh	Roadside	365115	400259	NO2	NO	26.0	3.0	NO	2.0
WI115NO	Winchester Close, Orrell	Urban Background	353845	405360	NO2	YES	28.0	1.0	NO	2.0
WI116NO	Hendon Road, Leigh	Urban Background	365864	401720	NO2	YES	0.0	9.0	NO	2.0
WI117NO	Douglas Street, Wigan	Roadside	357048	405200	NO2	NO	0.0	3.0	NO	2.0
WI121NO	9 Ormskirk Road, Wigan	Roadside	357088	405158	NO2	YES	0.0	4.0	NO	2.0
WI122NO	Robin Park Road, Wigan	kerbside	356883	405239	NO2	NO	0.5	0.5	NO	2.0
WI124NO	173 Poolstock Lane	Roadside	357310	403672	NO2	NO	3.0	0.5	NO	2.0
WI125NO	20 Poolstock Lane	Roadside	357645	404259	NO2	NO	6.0	0.0	NO	2.0

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WI126NO	4 Derbyshire Road	Roadside	355819	402194	NO2	NO	5.0	2.0	NO	2.0
WI127NO	St Mathews Close	Roadside	355484	403854	NO2	NO	6.0	2.0	NO	2.0
WI128NO	Wheatlea Road	Roadside	356817	402536	NO2	NO	40.0	2.0	NO	2.0
WI129NO	668 Warrington Road	Roadside	356848	402906	NO2	NO	3.0	2.0	NO	2.0
WI130NO	Smithy Brook Road	Roadside	356354	403838	NO2	NO	20.0	2.0	NO	2.0
WI131NO	261 Warrington Road	Roadside	356667	404065	NO2	NO	3.0	2.0	NO	2.0
WI132NO	Stanley Street	Roadside	356869	404808	NO2	NO	3.0	2.0	NO	2.0
WI133NO	Westminster Street	Roadside	356748	404786	NO2	NO	3.0	1.0	NO	2.0
WI134NO	Harrowby Street	Roadside	356428	404722	NO2	NO	4.0	1.0	NO	2.0
WI135NO	Loch Street	Kerbside	354614	404685	NO2	NO	0.0	1.0	NO	2.0
WI136NO	Shelley Drive	Kerbside	354057	404824	NO2	NO	4.0	1.0	NO	2.0
WI137NO	East Mount	Roadside	353844	404922	NO2	YES	7.0	2.0	NO	2.0
WI138NO	Lamberhead Road	Roadside	355321	404017	NO2	NO	100.0	1.0	NO	2.0

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WI139NO	Wesley Street	Roadside	355638	404023	NO2	NO	12.0	2.0	NO	2.0
WI140NO	Queen Street/225 Billinge Rd	Roadside	355816	404062	NO2	NO	4.0	2.0	NO	2.0
WI141NO	Mitchell Street	Roadside	356469	404550	NO2	NO	22.0	2.0	NO	2.0
WI142NO	606 Liverpool Road	Roadside	360528	403020	NO2	NO	6.0	0.0	NO	2.0
WI143NO	81 Walthew Lane	Roadside	360321	402935	NO2	NO	1.0	2.0	NO	2.0
WI144NO	54 Bickershaw Lane	Roadside	360643	402297	NO2	NO	4.0	2.0	NO	2.0
WI145NO	64 Warrington Road	Roadside	360515	402212	NO2	NO	3.0	2.0	NO	2.0
WI146NO	104 Lily Lane	Roadside	360306	402279	NO2	NO	9.0	2.0	NO	2.0
WI147NO	323/333 Manchester Road	Roadside	360437	405089	NO2	NO	18.0	2.0	NO	2.0
WI148NO	120 Wigan Road	Kerbside	361247	404576	NO2	NO	5.0	1.0	NO	2.0
WI149NO	527 Atherton Road	Kerbside	363081	403512	NO2	NO	7.0	1.0	NO	2.0
WI14NO	Wigan Road, Atherton	Roadside	366880	403255	NO2	YES	0.0	6.0	NO	2.0

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WI150NO	2-4 Wigan Road	Kerbside	361579	404298	NO2	NO	16.0	2.0	NO	2.0
WI151NO	20 Liverpool Road	Kerbside	361501	404216	NO2	NO	2.0	1.0	NO	2.0
WI152NO	48 Leigh Road	Roadside	364021	402391	NO2	NO	10.0	2.0	NO	2.0
WI153NO	Harbern Drive	Roadside	364953	402783	NO2	NO	9.0	1.0	NO	2.0
WI154NO	74 Smallbrook Lane	Roadside	365054	403019	NO2	NO	18.0	2.0	NO	2.0
WI155NO	320 Wigan Road	Roadside	366233	403024	NO2	NO	4.0	1.0	NO	2.0
WI156NO	244 Leigh Road	Kerbside	366320	402136	NO2	NO	8.0	1.0	NO	2.0
WI157NO	Leigh Road / Old Manor Park	Roadside	366458	402462	NO2	NO	13.0	2.0	NO	2.0
WI158NO	Atherleigh Way (Westbourne Ave)	Roadside	365615	401368	NO2	NO	9.0	1.0	NO	2.0
WI159NO	88 Bolton Road	Kerbside	368024	403514	NO2	NO	44.0	1.0	NO	2.0
WI160NO	Shakerley Street	Roadside	368671	402250	NO2	NO	18.0	2.0	NO	2.0
WI161NO	80 Manchester Road	Roadside	369635	402019	NO2	NO	0.0	2.0	NO	2.0
WI162NO	18 Sale Lane	Roadside	370534	401953	NO2	NO	5.0	1.0	NO	2.0

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WI163NO	261 Sale Lane	Kerbside	371234	401895	NO2	NO	15.0	1.0	NO	2.0
WI164NO	227 Mosley Common Road	Roadside	371981	401209	NO2	NO	5.0	1.0	NO	2.0
WI165NO	252 Chaddock Lane	Kerbside	371039	400996	NO2	NO	23.0	2.0	NO	2.0
WI166NO	444 Manchester Road	Kerbside	368414	399638	NO2	NO	23.0	1.0	NO	2.0
WI167NO	60 Newton Road	Roadside	363544	397933	NO2	NO	15.0	2.0	NO	2.0
WI168NO	239a Newton Road	Kerbside	362463	397005	NO2	YES	15.0	2.0	NO	2.0
WI169NO	East Lancashire Road	Roadside	362557	396906	NO2	NO	28.0	2.0	NO	2.0
WI170NO	269 Newton Road	Roadside	362236	396675	NO2	NO	11.0	1.0	NO	2.0
WI171NO	Wigan Road / Downall Green Road	Roadside	357095	400717	NO2	NO	21.0	2.0	NO	2.0
WI172NO	537 Wigan Road	Kerbside	356881	401314	NO2	NO	3.0	1.0	NO	2.0
WI173NO	85 Wallgate	Roadside	357983	405377	NO2	YES	78.0	3.0	NO	2.0
WI174NO	91 Queen Street	Roadside	358294	405137	NO2	YES	33.0	3.0	NO	2.0
WI175NO	Crompton House	Roadside	358537	405774	NO2	YES	24.0	6.0	NO	2.0

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WI176NO	207 Darlington Street East	Roadside	359227	405480	NO2	NO	1.0	3.0	NO	2.0
WI177NO	18 Cross Street	Kerbside	356230	410105	NO2	NO	1.0	3.0	NO	2.0
WI178NO	22 School Lane	Kerbside	356021	410128	NO2	NO	6.0	0.5	NO	2.0
WI179NO	214 Almond Brook Road	Kerbside	354900	410475	NO2	NO	15.0	2.0	NO	2.0
WI180NO	4 Winwick Lane	Kerbside	362105	396491	NO2	NO	0.0	2.0	NO	2.0
WI181NO	Walthew House Lane	Kerbside	354819	406235	NO2	NO	5.0	1.0	NO	2.0
WI182NO	Central Park Way	Kerbside	358756	406175	NO2	NO	38.0	2.0	NO	2.0
WI183NO	Darlington Street	Roadside	358595	405297	NO2	YES	155.0	2.0	NO	2.0
WI184NO	King Street West A	Roadside	358013	405654	NO2	YES	14.0	1.0	NO	2.0
WI185NO	King Street West B	Kerbside	358054	405613	NO2	YES	30.0	1.0	NO	2.0
WI186NO	King Street West C	Kerbside	358070	405587	NO2	YES	88.0	2.0	NO	2.0
WI187NO	49 Warrington Road, Platt Bridge	Roadside	360470	402400	NO2	YES	3.0	2.0	NO	2.0
WI188NO	Winwick Lane B	Roadside	362111	396526	NO2	NO	18.0	2.0	NO	2.0

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WI189NO	Netwon Road	Kerbside	362095	396547	NO2	NO	26.0	2.0	NO	2.0
WI190NO	Central Park Way	Kerbside	358611	405994	NO2	YES	54.0	2.0	NO	2.0
WI192NO	Highfield Grange Avenue	Roadside	356771	403124	NO2	NO	24.0	1.0	NO	2.0
WI23NO	Atherton Road, Hindley	Roadside	361835	404090	NO2	YES	0.0	3.0	NO	2.0
WI24NO	Wigan Town Hall	Roadside	358341	405539	NO2	YES	0.0	8.0	NO	2.0
WI28NO	Turner Street, Leigh	Roadside	366424	399894	NO2	YES	1.0	1.0	NO	2.0
WI30NO	Smiths Lane, Hindley Green	Roadside	363833	402028	NO2	NO	0.0	1.0	NO	2.0
WI33NO	Rose Court, Ince	Roadside	359723	405537	NO2	YES	30.0	1.0	NO	2.0
WI35NO	Woodfield Crescent, Ashton (M6)	Kerbside	357132	398670	NO2	YES	7.0	1.0	NO	2.0
WI47NO, WI48NO, WI49NO	Wigan Station, Wigan	Urban Background	357812	406021	NO2	NO	0.0	177.0	YES	2.5
WI51NO	Nu Nu Nursery, Scholes	Kerbside	358787	405933	NO2	NO	0.0	1.0	NO	2.0
WI52NO	Church Lane, Lowton (A580)	Roadside	362137	396948	NO2	YES	35.0	3.0	NO	2.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
WI53NO	New Miles Lane, Shevington (M6)	Urban Background	353896	408518	NO2	YES	0.0	14.0	NO	2.0
WI54NO	East Lancs. Road, Astley 2 (A580)	Urban Background	370612	400586	NO2	YES	4	17.0	NO	2.0
WI63NO	29 Warrington Road, Wigan	Roadside	356928	404982	NO2	YES	0.0	8.0	NO	2.0
WI71NO	Tyldesley Road, Tyldesley	Roadside	368244	402563	NO2	NO	0.0	5.0	NO	2.0
WI81NO	Preston Road Standish	Roadside	355979	410362	NO2	YES	0.0	4.0	NO	2.0

Notes:

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

(2) N/A if not applicable.

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
Bury Whitefield	380637	406974	Roadside	N/A	98.01	30	28	25	27	19
Bury Radcliffe	378190	407480	Roadside	N/A	88.05	28	27	25	26	20
Glazebury	368759	396027	Rural	N/A	97.51	16	13	14	15	11
Manchester Oxford Rd	384233	397287	Kerbside	N/A	99.56	**66**	**65**	**62**	**59**	36
Manchester Piccadilly	384310	398337	Urban Centre	N/A	99.19	**40**	36	35	36	27
Manchester Sharston	384179	386086	Suburban	N/A	99.21	23	24	24	23	14
Oldham Crompton Way	393887	409191	Roadside	N/A	97.93	34	32	28	30	23
Salford Eccles	377926	398727	Industrial	N/A	99.64	29	26	25	25	20
Salford M60	374811	400857	Roadside	N/A	98.96	**46**	**43**	**41**	**44**	34
Stockport Hazel Grv	391481	387637	Roadside	N/A	89.67	25	22	25	23	16
Tameside Mottram M'r	399719	395804	Roadside	N/A	96.48	**49**	**44**	**43**	**40**	30
Trafford Wellacre Academy	373758	394473	Urban Background	N/A	98.58	17	15	15	15	11
Trafford	378783	394726	Urban Background	N/A	93	22	19	18	19	14
Trafford A56	379413	394014	Urban Traffic	N/A	99.39	33	30	29	30	21
Wigan Centre	357816	406024	Urban Background	N/A	99.69	21	18	17	19	15
Stockport Cheadle A34	385047	388339	Roadside	N/A	97.8	**-**	**43**	37	36	26

Site 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
Wigan Leigh 3	365686	400243	Urban Background	N/A	52.45	-	-	-	-	23.79
Tameside A635 Manchester Road	392538	398419	Roadside	N/A	28.75	-	-	-	-	29.22
Bolton A579 Derby Street (3)	371280	408577	Roadside	N/A	15.29	-	-	-	-	30
Bury Prestwich (3)	381650	403222	Roadside	N/A	7.24	**42**	**42**	38	39	38

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

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

Notes:

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

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

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

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

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

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

(3) Insufficient Data capture. Results should be treated with caution.

Table A.4 – 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
BO11NO	363712	412396	Urban Background	N/A	65.4	20.0	14.4	13.6	12.3	9.0
BO14NO	373839	406130	Roadside	N/A	90.4	26.5	23.4	23.4	23.4	17.4
BO15NO	371435	411690	Kerbside	N/A	100.0	**47.9**	**42.2**	37.8	39.9	29.0
BO16NO	371304	411748	Urban Background	N/A	100.0	24.5	20.7	21.2	21.7	15.5
BO3NO	370763	407929	Kerbside	N/A	100.0	**49.1**	**41.3**	**40.3**	**41.2**	31.8
BO41NO	366286	406561	Urban Background	N/A	82.7	**43.4**	35.0	34.7	35.4	28.3
BO43NO	365501	409887	Kerbside	N/A	100.0	**44.1**	39.6	36.1	35.5	25.8
BO44NO, BO45NO	365599	409845	Urban Background	N/A	100.0	27.7	26.3	23.7	23.6	17.7
BO48NO	375397	407457	Urban Background	N/A	90.4	28.7	36.2	26.5	27.6	22.7
BO4NO	371394	411718	Urban Background	N/A	100.0	30.9	27.5	25.9	27.1	19.3
BO53NO	373236	411968	Urban Background	N/A	82.7	21.9	19.2	20.2	19.4	16.7
BO54NO	372908	412120	Urban Background	N/A	92.3	16.6	14.1	13.4	14.9	11.2

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
BO60NO	373287	405061	Roadside	N/A	100.0	34.2	30.8	36.9	32.0	23.8
BO61NO	374450	405207	Kerbside	N/A	92.3	**41.1**	36.4	38.3	37.2	27.8
BO62NO	374194	405460	Urban Background	N/A	100.0	**66.1**	-	-	**47.7**	28.4
BO63NO	374282	406257	Urban Background	N/A	100.0	26.0	27.1	24.0	25.0	17.9
BO64NO	371965	409907	Roadside	N/A	100.0	33.8	31.2	27.8	28.6	21.8
BO65NO	372059	409877	Urban Background	N/A	100.0	32.6	30.0	27.9	26.8	21.5
BO66NO	371442	411599	Roadside	N/A	92.3	**40.4**	37.0	38.6	36.7	29.0
BO67NO	365163	405640	Urban Background	N/A	75.0	24.6	21.0	21.2	21.2	18.3
BO68NO	367672	406910	Urban Background	N/A	100.0	36.9	32.3	30.3	31.1	22.6
BO69NO	369030	405809	Roadside	N/A	100.0	-	-	**49.0**	**47.7**	36.0
BO70NO	368757	405701	Roadside	N/A	100.0	-	-	21.9	23.9	16.1
BO71NO	370362	405400	Roadside	N/A	100.0	-	-	**46.2**	**53.1**	38.0
BO72NO	370115	405372	Roadside	N/A	84.6	-	-	30.0	30.9	25.4
BO73NO	371805	409820	Roadside	N/A	100.0	-	-	**45.5**	**44.7**	33.0

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
BO74NO	371805	409832	Roadside	N/A	100.0	**-**	**-**	**41.7**	**46.9**	31.8
BO75NO	371623	409235	Roadside	N/A	92.3	**-**	**-**	25.3	28.8	28.2
BO76NO, BO77NO, BO78NO	373491	404836	Roadside	N/A	100.0	-	-	-	-	22.9
BO8NO	371352	409094	Kerbside	N/A	92.3	31.8	29.2	27.9	27.4	18.5
BOA101	374561	405364	Roadside	N/A	90.4	-	-	-	-	23.6
BOA102	374584	405525	Roadside	N/A	75.0	-	-	-	-	25.2
BOA103	374526	405906	Roadside	N/A	90.4	-	-	-	-	20.1
BOA104	373795	406600	Roadside	N/A	50.0	-	-	-	-	29.7
BOA105	373604	406882	Roadside	N/A	90.4	-	-	-	-	25.8
BOA106	372643	408070	Roadside	N/A	15.4	-	-	-	-	**-**
BOA107	372643	408070	Roadside	N/A	50.0	-	-	-	-	19.1
BOA108	372430	408765	Roadside	N/A	0	-	-	-	-	-
BOA109	373818	409401	Roadside	N/A	90.4	-	-	-	-	17.9
BOA110	371501	409694	Roadside	N/A	90.4	-	-	-	-	30.1

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
BOA111	371102	409575	Roadside	N/A	67.3	-	-	-	-	26.7
BOA112	371715	408681	Roadside	N/A	65.4	-	-	-	-	29.2
BOA113	374510	405522	Roadside	N/A	90.4	-	-	-	-	23.3
BOA114	372122	409347	Roadside	N/A	90.4	-	-	-	-	25.6
BOA115	371903	409026	Roadside	N/A	75.0	-	-	-	-	35.7
BOA116	371803	408976	Roadside	N/A	82.7	-	-	-	-	29.4
BOA117	371288	408592	Roadside	N/A	90.4	-	-	-	-	24.3
BOA118	371832	409625	Roadside	N/A	90.4	-	-	-	-	23.0
BOA119	371328	409251	Roadside	N/A	82.7	-	-	-	-	25.3
BU10NO	379854	410978	Roadside	N/A	100.0	-	-	-	37.1	27.3
BU11NO	380977	411193	Roadside	N/A	100.0	-	-	-	**41.3**	32.3
BU12NO	381378	410741	Kerbside	N/A	100.0	-	-	-	**53.6**	35.0
BU13NO	381802	410639	Kerbside	N/A	100.0	-	-	-	**49.7**	34.0
BU14NO	380398	410455	Roadside	N/A	92.3	-	-	-	37.5	26.9

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
BU15NO	380852	405204	Kerbside	N/A	92.3	-	-	-	**46.6**	34.4
BU16NO	380916	404891	Roadside	N/A	100.0	-	-	-	**46.8**	32.5
BU17NO	381105	404279	Roadside	N/A	92.3	-	-	-	35.4	25.7
BU18NO	382071	411362	Roadside	N/A	100.0	-	-	-	38.2	27.9
BU19NO	381321	405115	Roadside	N/A	100.0	-	-	-	**42.1**	32.7
BU1NO	384372	404917	Roadside	N/A	100.0	35.2	31.9	32.3	32.4	24.4
BU20NO	382974	405930	Urban Background	N/A	100.0	-	-	-	-	26.1
BU2NO	379103	417141	Roadside	N/A	100.0	37.3	32.4	35.7	38.8	25.1
BU3ANO, BU3BNO, BU3CNO	380636	406969	Roadside	N/A	15.4	30.5	26.3	26.4	26.1	-
BU4NO	380964	404831	Roadside	N/A	100.0	38.1	31.9	31.2	39.2	27.4
BU5NO	380501	405413	Roadside	N/A	82.7	35.5	27.9	28.0	27.0	21.1
BU6NO	379658	410888	Roadside	N/A	100.0	**40.8**	36.1	36.7	36.4	27.5
BU7NO	381984	411866	Roadside	N/A	100.0	28.5	24.0	25.1	30.6	23.4
BU8NO	380754	412615	Kerbside	N/A	100.0	32.0	28.4	28.2	34.3	23.7

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
BU9NO	379630	411031	Roadside	N/A	84.6	-	-	-	35.4	27.1
MA100NO	383605	402293	Roadside	N/A	100.0	-	-	-	-	31.2
MA101NO	385999	402026	Roadside	N/A	100.0	-	-	-	-	28.1
MA102NO	385792	402952	Roadside	N/A	100.0	-	-	-	-	28.3
MA103NO	385431	400653	Roadside	N/A	100.0	-	-	-	-	35.5
MA104NO	383511	399906	Roadside	N/A	100.0	-	-	-	-	30.6
MA112NO	383988.551	396735.36	Urban Background	N/A	0	-	-	-	-	-
MA113NO	385087	396891	Roadside	N/A	0	-	-	-	-	-
MA24NO	383968	398070	Kerbside	N/A	92.3	**45.3**	**44.7**	**40.3**	**40.8**	26.8
MA26ANO	383973	398874	Urban Background	N/A	100.0	37.1	35.5	33.4	33.0	22.9
MA28NO	387951	397430	Roadside	N/A	92.3	**41.0**	38.5	37.1	36.1	26.4
MA29ANO	384119	397503	Roadside	N/A	92.3	**66.2**	**57.7**	**58.8**	**55.4**	39.0
MA36NO	385203	399750	Roadside	N/A	100.0	**40.1**	34.0	33.1	31.7	24.3
MA37NO	382829	391493	Roadside	N/A	100.0	**46.3**	**42.6**	39.3	38.7	26.9

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
MA59NO, MA60NO, MA61NO	384310	398337	Urban Background	N/A	100.0	**40.8**	35.7	31.6	33.1	22.3
MA71NO	385161	398290	Roadside	N/A	100.0	**51.2**	**50.4**	**46.1**	**45.3**	31.4
MA72NO	384761	397384	Urban Background	N/A	100.0	40.0	34.6	33.4	32.8	24.5
MA73NO	388604	396042	Roadside	N/A	100.0	**43.6**	39.0	38.7	38.0	27.3
MA74NO	385400	390095	Roadside	N/A	100.0	38.0	37.1	35.7	33.6	23.3
MA75NO	387363	394617	Kerbside	N/A	100.0	**51.5**	**47.7**	**47.6**	**47.0**	33.7
MA77NO	383576	397489	Urban Background	N/A	100.0	**44.2**	38.8	**41.0**	**43.7**	26.9
MA78NO	386289	396828	Urban Background	N/A	100.0	37.0	38.3	33.2	33.0	23.2
MA79NO	386875	395861	Urban Background	N/A	100.0	32.7	31.8	29.9	29.3	22.3
MA80NO	387358	393990	Roadside	N/A	100.0	35.3	34.2	32.2	33.2	22.5
MA81NO	386589	394083	Urban Background	N/A	100.0	25.9	25.2	21.8	23.1	16.6
MA82NO, MA83NO, MA84NO	384239	397276	Roadside	N/A	100.0	**60.2**	**56.2**	**54.0**	**52.0**	33.9
MA86ANO	387150	396808	Roadside	N/A	100.0	36.7	36.9	32.1	33.6	25.5
MA87ANO	386992	396569	Roadside	N/A	100.0	37.1	37.2	33.2	34.0	22.9

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
MA88ANO	386536	396699	Roadside	N/A	100.0	**52.7**	**47.5**	**44.3**	**43.3**	32.5
MA88NO	384469	398981	Kerbside	N/A	92.3	**57.8**	**57.9**	**46.8**	**45.2**	30.1
MA89ANO	386710	396824	Roadside	N/A	100.0	35.7	34.4	30.3	30.3	23.7
MA8ANO	381398	387501	Urban Background	N/A	100.0	32.4	29.2	26.6	28.0	18.2
MA90NO, MA91NO, MA92NO	384202	386121	Suburban	N/A	100.0	22.3	21.7	20.1	18.9	13.7
MA93NO	382419	390010	Roadside	N/A	92.3	-	-	-	**42.9**	29.4
MA94NO	382072	388388	Roadside	N/A	84.6	-	-	-	32.1	25.2
MA95NO	386668	397566	Roadside	N/A	92.3	-	-	-	**43.4**	31.5
MA96NO	385189	397167	Roadside	N/A	100.0	-	-	-	**46.0**	36.4
MA97NO	382886	397215	Roadside	N/A	84.6	-	-	-	32.3	23.4
MA98NO	388460	403313	Kerbside	N/A	100.0	-	-	-	36.2	26.6
MA99NO	385400	399245	Roadside	N/A	100.0	-	-	-	-	26.9
MA9ANO	384601	398303	Kerbside	N/A	100.0	**51.9**	**51.1**	**45.8**	**44.9**	32.5
OL136RDNO	391863	407968	Roadside	N/A	92.3	34.0	31.4	26.8	28.0	20.4

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
OLARNO	392771	402951	Roadside	N/A	100.0	37.6	38.8	29.1	30.6	23.7
OLBWNO	390125	404833	Urban Background	N/A	92.3	29.1	27.8	24.5	24.6	18.0
OLCVNO	399533	404454	Roadside	N/A	92.3	21.7	-	-	19.1	14.5
OLCW1NO, OLCW2NO	393884	409183	Roadside	N/A	100.0	37.8	37.7	30.6	33.3	24.6
OLDLNO	390770	404695	Roadside	N/A	100.0	-	-	-	26.7	21.3
OLHRNO	390756	402571	Roadside	N/A	100.0	37.8	**44.0**	38.5	**40.6**	30.1
OLHSNO	399589	405511	Roadside	N/A	92.3	36.0	-	-	30.0	22.8
OLHURNO	395561	405751	Roadside	N/A	75.0	-	-	-	35.8	27.0
OLMRNO	390746	405397	Roadside	N/A	92.3	-	-	-	31.5	37.7
OLMSNO	388871	400997	Urban Background	N/A	82.7	31.5	38.9	23.7	27.8	23.9
OLNSLNO	395225	404648	Urban Background	N/A	50.0	22.8	23.3	28.2	20.7	14.0
OLNSNO	391217	403860	Urban Background	N/A	100.0	32.8	30.0	25.6	27.5	20.9
OLOBNO	389715	403625	Roadside	N/A	92.3	**44.9**	**46.3**	38.4	37.3	27.2
OLRDNO	392111	406432	Roadside	N/A	92.3	**41.0**	39.6	33.5	36.2	25.9

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
OLRRNO	394210	405752	Roadside	N/A	92.3	-	-	-	35.3	28.6
OLSHSNO	390394	405454	Roadside	N/A	92.3	37.0	35.2	30.5	36.1	25.1
OLSMWNO	392748	405294	Urban Background	N/A	92.3	34.8	31.4	29.4	30.9	23.1
OLTSNO	393782	405093	Roadside	N/A	92.3	34.1	-	29.0	33.3	24.5
RO10ANO	388800	413603	Urban Background	N/A	100.0	20.5	18.3	18.7	17.7	14.8
RO12ANO	392072	415687	Roadside	N/A	100.0	**43.3**	**40.1**	31.4	39.4	30.4
RO13ANO	392042	415707	Urban Background	N/A	67.3	19.5	18.3	13.7	17.2	14.1
RO14ANO	393665	417816	Rural	N/A	90.4	12.7	15.1	29.2	12.9	11.6
RO15ANO	392976	411906	Roadside	N/A	100.0	32.8	29.7	24.2	27.0	20.3
RO16ANO	392542	411709	Urban Background	N/A	100.0	29.9	26.3	22.6	19.9	18.8
RO17ANO	391214	412609	Urban Background	N/A	84.6	25.6	25.7	36.1	23.5	18.5
RO18ANO	389877	413590	Urban Background	N/A	82.7	-	-	31.1	26.8	20.9
RO19ANO	389971	413646	Roadside	N/A	100.0	-	-	27.2	35.8	29.3
RO20ANO	385748	408931	Roadside	N/A	100.0	-	-	27.2	31.3	23.9

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
RO21ANO	385820	410776	Roadside	N/A	100.0	-	-	28.6	37.4	28.3
RO22ANO	390464	411976	Roadside	N/A	100.0	-	-	28.6	**43.4**	31.5
RO23ANO	390377	412030	Roadside	N/A	100.0	-	-	-	37.8	27.6
RO24ANO	388089	410822	Urban Background	N/A	100.0	-	-	-	30.0	24.8
RO25ANO	387792	406013	Roadside	N/A	44.2	-	-	-	34.7	25.9
RO26ANO	389782	414241	Roadside	N/A	100.0	-	-	-	**41.6**	31.1
RO27ANO	390710	414563	Roadside	N/A	100.0	-	-	-	**46.1**	32.7
RO28ANO	392871	415127	Urban Background	N/A	100.0	-	-	-	29.5	21.3
RO2ANO	388537	409942	Urban Background	N/A	34.6	33.3	35.0	28.9	32.7	21.7
RO3ANO	388581	409797	Urban Background	N/A	100.0	29.9	23.4	20.6	22.1	16.0
RO4ANO	387080	406278	Urban Background	N/A	100.0	30.9	29.5	26.7	33.2	22.2
RO5ANO	386870	404044	Roadside	N/A	100.0	24.7	25.9	31.5	24.5	16.5
RO6ANO	385413	408320	Kerbside	N/A	100.0	**44.6**	**47.2**	**41.9**	**42.5**	31.8
RO7ANO	388603	411925	Urban Background	N/A	100.0	36.7	34.5	32.3	32.1	25.2

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
RO8ANO	388932	412091	Roadside	N/A	100.0	**51.2**	**41.5**	**45.0**	**44.7**	33.6
RO9ANO	389057	412217	Kerbside	N/A	100.0	**45.2**	**41.6**	**40.5**	39.6	30.3
SA13NO	379613	399784	Urban Background	N/A	76.9	24.4	25.3	22.0	22.2	17.0
SA14NO	382833	401035	Kerbside	N/A	100.0	35.5	36.0	31.6	31.6	21.2
SA16NO	371187	404453	Urban Background	N/A	42.3	24.4	23.0	21.1	19.8	14.2
SA17NO	380742	400862	Kerbside	N/A	100.0	38.1	36.8	35.1	38.9	25.3
SA01NO	372767	394104	Urban Background	N/A	100.0	22.2	20.8	19.7	19.9	14.7
SA20NO, SA21NO, SA22NO	374811	400857	Roadside	N/A	100.0	**46.0**	**41.8**	**40.6**	**41.3**	31.5
SA25NO	381304	398014	Urban Background	N/A	100.0	33.6	30.8	29.2	30.2	21.2
SA26NO	380718	399597	Roadside	N/A	100.0	39.0	34.6	33.9	32.3	23.9
SA27NO	383078	398741	Roadside	N/A	90.4	39.8	36.8	34.1	37.2	26.7
SA23NO, SA24NO, SA29NO	377926	398727	Urban Background	N/A	100.0	30.2	27.9	25.8	25.3	18.3
SA02NO	372140	394210	Urban Background	N/A	100.0	24.1	22.3	21.4	20.2	13.3
SA31NO	374025	401905	Roadside	N/A	100.0	32.5	30.4	29.0	29.3	21.3

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
SA33NO	372600	400721	Roadside	N/A	100.0	31.5	30.4	30.2	30.5	22.5
SA34NO	375367	397800	Roadside	N/A	100.0	**45.6**	**43.0**	39.3	39.9	30.4
SA38NO	377796	403065	Roadside	N/A	92.3	31.0	29.0	25.8	26.6	19.6
SA39NO	383040	398563	Roadside	N/A	100.0	**46.8**	**41.6**	39.1	**41.7**	30.4
SA44NO	380412	398439	Roadside	N/A	100.0	**40.7**	**40.2**	35.3	35.6	25.4
SA04NO	377453	401830	Urban Background	N/A	90.4	30.4	25.9	25.6	25.9	18.8
SA51NO	375213	397661	Roadside	N/A	100.0	37.7	34.3	33.2	34.7	25.0
SA52NO	375149	397587	Roadside	N/A	100.0	35.2	31.2	29.4	29.6	21.8
SA53NO	374757	399891	Urban Background	N/A	100.0	36.5	34.2	29.7	31.6	23.7
SA54NO	374901	399981	Urban Background	N/A	92.3	30.9	29.5	27.0	26.7	20.9
SA55NO	372871	400734	Roadside	N/A	92.3	37.9	34.8	33.0	32.2	24.1
SA56NO, SA57NO, SA58NO	368759	396027	Rural	N/A	100.0	-	13.1	14.2	14.2	11.1
SA59NO	381822	397895	Roadside	N/A	100.0	-	36.7	33.3	32.4	23.0
SA60NO	382445	397724	Roadside	N/A	100.0	-	**40.7**	**40.2**	36.7	27.0

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
SA61NO	377269	400943	Roadside	N/A	100.0	-	-	38.9	38.8	28.8
SA62NO	380768	399637	Roadside	N/A	100.0	-	-	31.4	32.2	23.8
SA63NO	374673	399912	Roadside	N/A	100.0	-	-	**40.5**	**42.7**	29.7
SA64NO	378804	399844	Roadside	N/A	100.0	-	-	25.9	27.9	20.5
SA65NO	378584	399220	Roadside	N/A	100.0	-	-	**41.8**	**43.1**	36.6
SA66NO	375118	398502	Roadside	N/A	84.6	-	-	32.9	32.1	23.9
SA68NO	373570	403096	Roadside	N/A	100.0	-	-	**44.4**	**50.6**	34.4
SA69NO	379397	401370	Roadside	N/A	100.0	-	-	**46.7**	**47.9**	36.0
SA70NO	381677	398832	Roadside	N/A	82.7	-	-	28.4	29.7	24.3
SA71NO	381351	397185	Roadside	N/A	100.0	-	-	36.8	37.1	25.0
SA72NO	377536	401804	Roadside	N/A	100.0	-	-	**47.4**	**49.6**	36.6
SA73NO	374576	400611	Roadside	N/A	90.4	-	-	-	**45.6**	34.8
SA74NO	376315	399249	Roadside	N/A	100.0	-	-	-	39.9	29.3
SA75NO	379608	398539	Roadside	N/A	100.0	-	-	-	33.4	24.0

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
SA76NO	380540	398422	Roadside	N/A	100.0	-	-	-	37.3	28.5
SA77NO	381686	398504	Roadside	N/A	100.0	-	-	-	33.6	23.2
SA78NO	381220	399530	Roadside	N/A	100.0	-	-	-	**46.7**	36.2
SA79NO	382602	398519	Roadside	N/A	100.0	-	-	-	**41.1**	27.3
SA80NO	375428	401417	Roadside	N/A	100.0	-	-	-	30.1	23.6
SA81NO	382561	397722	Roadside	N/A	100.0	-	-	-	**46.4**	34.8
SA82NO	375394	397816	Roadside	N/A	100.0	-	-	-	-	36.9
SA09NO	374741	400937	Urban Background	N/A	90.4	27.1	25.3	23.4	24.5	18.1
SA83NO	382945	400732	Roadside	N/A	0	-	-	-	-	-
SA84NO	380776	400834	Roadside	N/A	0	-	-	-	-	-
SA85NO	375991	399237	Roadside	N/A	0	-	-	-	-	-
SA86NO	383819	401771	Kerbside	N/A	0	-	-	-	-	-
SA87NO	372225	395616	Roadside	N/A	0	-	-	-	-	-
ST10NO	392781.3	387271.486	Urban Background	N/A	100.0	17.6	17.2	14.5	14.5	10.8

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
ST11NO	391083.207	387938.058	Roadside	N/A	100.0	**43.4**	39.7	38.1	36.2	21.9
ST12NO	385047	388339	Roadside	N/A	100.0	**54.5**	**42.4**	38.0	36.6	26.7
ST13NO	384675	386295	Urban Background	N/A	100.0	21.2	18.4	18.3	18.8	11.6
ST14NO	385047	388339	Roadside	N/A	90.4	21.0	**42.1**	37.7	36.2	26.1
ST15NO	389886.321	388961.332	Roadside	N/A	84.6	37.0	31.8	25.2	22.3	21.0
ST16NO	391568.679	391225.883	Roadside	N/A	100.0	28.9	28.0	25.4	26.2	18.3
ST17NO	388442.177	390077.487	Urban Background	N/A	92.3	30.2	27.7	28.2	26.6	18.4
ST18NO	389272.176	390440.811	Urban Background	N/A	100.0	37.6	38.2	37.0	37.6	26.5
ST19NO	389479.355	393463.855	Roadside	N/A	92.3	**42.5**	**44.4**	37.8	**40.7**	30.5
ST1NO	389077.064	392011.822	Urban Background	N/A	100.0	23.2	22.5	20.0	19.7	15.0
ST20NO	386921.232	389528.855	Urban Background	N/A	100.0	**47.9**	**43.8**	**41.9**	37.7	29.6
ST21NO	388598.721	389415.552	Urban Background	N/A	92.3	25.3	23.8	22.1	21.6	15.2
ST22NO, ST23NO, ST24NO	391483	387635	Roadside	N/A	100.0	28.2	25.4	26.5	24.6	16.7
ST25NO	395770.138	388655.432	Roadside	N/A	100.0	30.6	30.9	27.4	28.1	19.5

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
ST26NO	389396	387357	Urban Background	N/A	100.0	19.0	16.6	15.3	15.3	11.0
ST27NO	387091	391384	Urban Background	N/A	100.0	22.4	18.7	16.8	17.5	12.6
ST28NO	385700.368	386219.938	Roadside	N/A	100.0	**43.7**	**42.4**	**41.3**	38.6	25.7
ST29NO	390087.5	388545.187	Urban Background	N/A	100.0	20.9	19.6	18.5	18.2	13.1
ST2NO	385047	388339	Roadside	N/A	100.0	24.7	**42.5**	37.3	38.9	26.3
ST31NO	3392441	391747	Roadside	N/A	92.3	-	-	24.8	38.2	30.1
ST32NO	389480	390957	Roadside	N/A	100.0	-	-	-	34.7	24.8
ST33NO	390416	390087	Roadside	N/A	100.0	-	-	-	37.6	25.8
ST34NO	388304	390351	Roadside	N/A	92.3	-	-	-	**41.3**	29.0
ST35NO	395020	385360	Roadside	N/A	100.0	-	-	-	24.0	18.6
ST3NO	388550.609	391846.389	Urban Background	N/A	100.0	29.4	29.6	26.0	25.7	19.0
ST4NO	396469.167	390800.349	Rural	N/A	100.0	15.7	15.2	14.9	13.4	9.6
ST5NO	396853	382768	Rural	N/A	92.3	8.7	8.6	8.8	8.9	6.3
ST6NO	396853	382768	Urban Background	N/A	100.0	19.1	18.8	16.7	16.7	11.9

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
ST7NO	392063.265	386972	Kerbside	N/A	82.7	**47.7**	**46.8**	**48.1**	39.5	26.3
ST8NO	392016.512	387042.782	Urban Background	N/A	92.3	24.9	25.5	23.8	21.8	14.0
ST9NO	392742.788	385680.865	Urban Background	N/A	100.0	14.2	14.1	12.7	13.6	9.7
TA10NO	392516	396748	Roadside	N/A	100.0	**41.4**	39.5	35.1	37.5	28.1
TA11NO	400390	396025	Roadside	N/A	100.0	**62.8**	**58.4**	**56.7**	**55.1**	39.9
TA12NO	393451	394330	Urban Background	N/A	15.4	20.0	17.6	14.3	16.1	-
TA13NO	392586	398431	Roadside	N/A	92.3	**42.9**	**42.5**	**41.8**	**41.2**	30.5
TA14NO	393710	398790	Roadside	N/A	100.0	**40.6**	**40.7**	35.6	37.4	28.9
TA15NO	395371	398736	Roadside	N/A	100.0	29.6	28.5	24.6	26.7	20.7
TA16NO	391435	397970	Roadside	N/A	100.0	**46.1**	**43.5**	**40.5**	**42.4**	30.9
TA17NO	389106	398242	Roadside	N/A	100.0	36.2	36.4	31.1	34.1	26.6
TA18NO	391970	395521	Roadside	N/A	100.0	**49.3**	**47.8**	**41.6**	**43.5**	32.1
TA19NO	392477	395505	Roadside	N/A	100.0	39.5	33.1	36.0	37.9	27.1
TA1NO	394050	397190	Roadside	N/A	100.0	29.7	28.1	25.8	25.5	21.4

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
TA20NO	394610	395102	Roadside	N/A	100.0	**41.8**	39.5	**40.1**	37.1	28.3
TA21NO	400423	395965	Roadside	N/A	100.0	**56.1**	**53.8**	**50.9**	**46.8**	36.7
TA22NO	393249	399159	Urban Background	N/A	100.0	24.9	22.4	20.1	21.5	15.9
TA23NO	393620	398588	Urban Background	N/A	100.0	24.8	23.4	22.9	22.8	17.4
TA24NO	390475	395621	Roadside	N/A	100.0	39.3	34.4	32.1	35.7	24.7
TA25NO	396950	402329	Roadside	N/A	100.0	30.4	27.9	25.4	28.6	21.9
TA26NO	394948	401815	Roadside	N/A	75.0	24.8	23.6	21.2	21.4	21.7
TA27NO	396177	398218	Roadside	N/A	100.0	31.1	28.8	26.8	28.7	20.7
TA28NO	393050	401038	Roadside	N/A	100.0	39.0	39.3	34.5	35.1	27.8
TA29NO	393370	399494	Suburban	N/A	100.0	27.3	26.5	24.3	24.6	18.4
TA2NO	394788	394933	Roadside	N/A	100.0	29.2	28.6	23.7	25.7	18.3
TA30NO	393419	399691	Roadside	N/A	100.0	**41.6**	38.3	33.5	36.4	27.3
TA31NO	396899	402449	Suburban	N/A	100.0	20.6	20.0	17.7	27.2	15.9
TA32NO	396982	402437	Suburban	N/A	100.0	29.2	26.8	22.5	25.1	18.5

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
TA33NO	397010	402560	Roadside	N/A	100.0	27.6	26.1	24.0	24.2	18.2
TA34NO	397060	402581	Roadside	N/A	100.0	28.5	27.1	24.3	23.0	18.7
TA35NO	397080	402540	Roadside	N/A	100.0	**41.8**	40.0	33.7	36.9	27.7
TA36NO	397060	402387	Suburban	N/A	100.0	24.1	23.5	20.0	22.0	16.1
TA37NO	396728	402073	Roadside	N/A	92.3	39.9	38.3	35.8	31.7	26.6
TA38NO	394006	399392	Urban Background	N/A	100.0	31.4	32.9	28.6	31.1	22.0
TA39NO	394114	399366	Urban Background	N/A	100.0	33.5	35.7	32.7	33.7	24.5
TA3NO	390961	395417	Urban Background	N/A	100.0	31.9	29.3	28.0	28.5	19.6
TA40NO	394066	399314	Urban Background	N/A	100.0	36.6	33.5	29.2	31.0	22.3
TA41NO	394118	399259	Urban Background	N/A	100.0	34.7	34.6	31.7	31.7	25.3
TA42NO	394494	399010	Urban Background	N/A	100.0	33.1	32.8	29.8	30.1	21.3
TA43NO	394214	398933	Roadside	N/A	100.0	**46.4**	**44.1**	39.6	**40.3**	31.2
TA44NO	397418	394398	Urban Background	N/A	100.0	16.4	19.8	15.1	15.5	12.1
TA45NO, TA46NO, TA47NO	399719	395805	Roadside	N/A	100.0	**64.4**	**55.5**	**55.6**	**55.6**	37.0

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
TA48NO	392699	395733	Roadside	N/A	100.0	30.1	35.0	30.3	32.8	24.2
TA49NO	393731	398770	Roadside	N/A	100.0	-	-	35.4	37.2	27.3
TA50NO	393498	398704	Roadside	N/A	100.0	-	-	39.1	**43.5**	33.6
TA51NO	393314	398624	Kerbside	N/A	100.0	-	-	**40.4**	37.2	29.7
TA52NO	393509	398737	Roadside	N/A	90.4	-	-	**42.8**	**43.7**	32.9
TA53NO	393133	398536	Roadside	N/A	100.0	-	-	38.3	36.4	28.3
TA54NO	392958	398474	Roadside	N/A	100.0	-	-	**45.0**	**49.2**	36.6
TA55NO	392743	398465	Roadside	N/A	100.0	-	-	**52.1**	**55.4**	**40.8**
TA56NO	392490	398368	Roadside	N/A	80.8	-	-	**42.8**	**43.7**	32.8
TA57NO	392844	398544	Roadside	N/A	100.0	-	-	**44.6**	**45.2**	36.8
TA58NO	393080	398620	Roadside	N/A	100.0	-	-	34.5	37.6	26.9
TA59NO	395652	399140	Roadside	N/A	100.0	-	-	19.6	19.8	15.0
TA5NO	400507	396518	Urban Background	N/A	100.0	16.0	14.8	13.9	13.4	10.0
TA60NO	395747	399112	Roadside	N/A	100.0	-	-	24.0	27.8	20.2

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
TA61NO	395682	399171	Roadside	N/A	100.0	-	-	23.8	24.0	18.2
TA62NO	396576	399240	Roadside	N/A	100.0	-	-	21.8	23.0	17.1
TA63NO	394921	400922	Roadside	N/A	0	-	-	-	-	-
TA664NO	395782	398757	Roadside	N/A	0	-	-	-	-	-
TA9NO	393451	394330	Urban Background	N/A	15.4	19.5	17.7	14.6	16.2	-
TR13NO	381221	396441	Roadside	N/A	92.3	32.7	38.3	35.9	37.5	23.2
TR15NO	379089	393282	Roadside	N/A	92.3	33.3	30.6	29.2	29.9	20.7
TR16ANO, TR16NO	377418	395689	Roadside	N/A	92.3	33.0	29.6	30.2	30.5	22.2
TR18NO	378822	389010	Urban Background	N/A	75.0	26.4	18.1	17.3	18.0	14.5
TR19ANO, TR19BNO, TR19NO	378783	394728	Urban Background	N/A	82.7	21.9	18.2	20.4	20.4	13.6
TR20ANO, TR20BNO, TR20NO	379411	394014	Roadside	N/A	92.3	33.1	32.4	30.2	28.7	21.2
TR21NO	379619	396371	Roadside	N/A	92.3	26.0	25.6	23.4	27.0	18.5
TR22NO	377061	390086	Kerbside	N/A	84.6	35.6	32.1	33.7	35.3	22.7
TR23ANO	376395	396360	Roadside	N/A	92.3	-	-	35.8	36.5	25.1

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
TR23NO	376438	396383	Roadside	N/A	75.0	39.8	39.6	36.5	36.6	25.1
TR24NO	379263	385812	Roadside	N/A	75.0	30.7	27.2	24.1	23.5	15.6
TR25ANO, TR25BNO, TR25NO	373755	394477	Urban Background	N/A	76.9	17.0	14.7	16.0	15.2	13.0
TR26ANO, TR26NO	379272	393666	Kerbside	N/A	92.3	-	**45.2**	37.9	38.5	29.1
TR27NO	371419	390760	Kerbside	N/A	76.9	-	-	-	21.7	18.6
TR28NO	376851	387792	Kerbside	N/A	82.7	-	-	-	29.8	24.9
TR5NO	379052	392043	Urban Background	N/A	92.3	25.5	24.1	24.0	24.3	16.3
TR9NO	380933	395889	Urban Background	N/A	92.3	25.5	25.0	24.8	24.1	16.5
W193NO	363885	403129	Kerbside	N/A	100.0	-	-	-	-	26.1
W194NO	371037	402472	Kerbside	N/A	100.0	-	-	-	-	14.6
W195NO	366254	403598	Roadside	N/A	100.0	-	-	-	-	14.1
W196NO	365850	403263	Kerbside	N/A	100.0	-	-	-	-	15.6
W197NO	361411	408031	Kerbside	N/A	100.0	-	-	-	-	15.2
W198NO	360370	407235	Kerbside	N/A	100.0	-	-	-	-	20.1

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
W199NO	360501	397988	Roadside	N/A	100.0	-	-	-	-	21.3
W200NO	363262	399815	Kerbside	N/A	92.3	-	-	-	-	18.7
W201NO	356493	406759	Roadside	N/A	100.0	-	-	-	-	18.6
W202NO	358222	407262	Roadside	N/A	100.0	-	-	-	-	15.1
W203NO	357569	408645	Roadside	N/A	100.0	-	-	-	-	14.2
W204NO	358161	399510	Roadside	N/A	92.3	-	-	-	-	16.3
W205NO	362151	396604	Kerbside	N/A	100.0	-	-	-	-	22.4
W206NO	362162	396325	Kerbside	N/A	100.0	-	-	-	-	20.4
W207NO	362171	396329	Kerbside	N/A	100.0	-	-	-	-	24.7
W208NO, W209NO, W210NO	365687	400238	Roadside	N/A	34.6	-	-	-	-	21.8
W211NO	372302	401593	Roadside	N/A	92.3	-	-	-	-	13.2
W212NO	356827	402135	Roadside	N/A	92.3	-	-	-	-	23.0
W213NO	362019	396512	Roadside	N/A	0	-	-	-	-	-
W214NO	361979	396501	Kerbside	N/A	0	-	-	-	-	-

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
W215NO	361981	396490	Kerbside	N/A	0	-	-	-	-	-
W216NO	358464	405342	Kerbside	N/A	0	-	-	-	-	-
WI114NO	365115	400259	Roadside	N/A	100.0	**40.1**	**40.7**	37.9	39.9	30.2
WI115NO	353845	405360	Urban Background	N/A	100.0	32.6	25.7	26.8	27.0	17.6
WI116NO	365864	401720	Urban Background	N/A	100.0	22.4	21.4	19.0	19.6	14.6
WI117NO	357048	405200	Roadside	N/A	0	-	34.5	32.0	31.6	-
WI121NO	357088	405158	Roadside	N/A	100.0	-	36.6	37.6	36.9	28.2
WI122NO	356883	405239	kerbside	N/A	92.3	-	37.5	**43.2**	38.2	28.0
WI124NO	357310	403672	Roadside	N/A	100.0	-	-	25.3	27.6	17.5
WI125NO	357645	404259	Roadside	N/A	82.7	-	-	36.5	34.0	22.3
WI126NO	355819	402194	Roadside	N/A	100.0	-	-	18.2	16.9	13.2
WI127NO	355484	403854	Roadside	N/A	90.4	-	-	33.5	32.0	23.0
WI128NO	356817	402536	Roadside	N/A	0	-	-	29.7	31.3	-
WI129NO	356848	402906	Roadside	N/A	90.4	-	-	**57.6**	**58.2**	34.8

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
WI130NO	356354	403838	Roadside	N/A	100.0	-	-	27.4	28.9	19.9
WI131NO	356667	404065	Roadside	N/A	100.0	-	-	29.1	28.2	19.1
WI132NO	356869	404808	Roadside	N/A	100.0	-	-	27.0	27.6	20.8
WI133NO	356748	404786	Roadside	N/A	100.0	-	-	30.1	31.5	23.2
WI134NO	356428	404722	Roadside	N/A	100.0	-	-	24.9	25.4	19.1
WI135NO	354614	404685	Kerbside	N/A	73.1	-	-	35.2	37.8	30.3
WI136NO	354057	404824	Kerbside	N/A	100.0	-	-	32.7	33.0	23.6
WI137NO	353844	404922	Roadside	N/A	100.0	-	-	35.5	35.3	26.4
WI138NO	355321	404017	Roadside	N/A	100.0	-	-	22.9	23.3	15.8
WI139NO	355638	404023	Roadside	N/A	100.0	-	-	23.3	25.8	18.5
WI140NO	355816	404062	Roadside	N/A	100.0	-	-	27.5	27.8	20.3
WI141NO	356469	404550	Roadside	N/A	100.0	-	-	32.8	25.8	19.5
WI142NO	360528	403020	Roadside	N/A	100.0	-	-	33.9	31.2	22.4
WI143NO	360321	402935	Roadside	N/A	100.0	-	-	19.7	22.0	16.6

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
WI144NO	360643	402297	Roadside	N/A	100.0	-	-	34.2	34.8	23.8
WI145NO	360515	402212	Roadside	N/A	100.0	-	-	28.2	33.0	23.6
WI146NO	360306	402279	Roadside	N/A	100.0	-	-	21.8	24.2	17.0
WI147NO	360437	405089	Roadside	N/A	92.3	-	-	33.1	30.6	23.5
WI148NO	361247	404576	Kerbside	N/A	100.0	-	-	27.8	29.1	21.1
WI149NO	363081	403512	Kerbside	N/A	82.7	-	-	32.9	35.7	24.6
WI14NO	366880	403255	Roadside	N/A	100.0	36.4	34.2	32.6	32.7	25.7
WI150NO	361579	404298	Kerbside	N/A	100.0	-	-	**41.1**	**41.4**	31.7
WI151NO	361501	404216	Kerbside	N/A	100.0	-	-	22.7	25.9	19.1
WI152NO	364021	402391	Roadside	N/A	100.0	-	-	20.7	23.7	16.8
WI153NO	364953	402783	Roadside	N/A	92.3	-	-	22.0	23.6	15.8
WI154NO	365054	403019	Roadside	N/A	100.0	-	-	18.6	21.1	14.4
WI155NO	366233	403024	Roadside	N/A	100.0	-	-	31.4	24.6	18.1
WI156NO	366320	402136	Kerbside	N/A	100.0	-	-	27.5	25.5	19.5

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
WI157NO	366458	402462	Roadside	N/A	90.4	-	-	23.9	26.3	17.5
WI158NO	365615	401368	Roadside	N/A	100.0	-	-	27.4	33.0	21.7
WI159NO	368024	403514	Kerbside	N/A	100.0	-	-	24.7	27.4	20.0
WI160NO	368671	402250	Roadside	N/A	92.3	-	-	31.1	33.0	24.0
WI161NO	369635	402019	Roadside	N/A	92.3	-	-	26.4	28.2	21.3
WI162NO	370534	401953	Roadside	N/A	100.0	-	-	29.7	32.7	22.1
WI163NO	371234	401895	Kerbside	N/A	92.3	-	-	31.2	35.3	25.5
WI164NO	371981	401209	Roadside	N/A	100.0	-	-	25.9	28.4	19.4
WI165NO	371039	400996	Kerbside	N/A	100.0	-	-	26.8	29.3	20.5
WI166NO	368414	399638	Kerbside	N/A	92.3	-	-	17.8	20.2	15.5
WI167NO	363544	397933	Roadside	N/A	100.0	-	-	24.2	26.3	18.7
WI168NO	362463	397005	Kerbside	N/A	100.0	-	-	32.3	35.7	24.8
WI169NO	362557	396906	Roadside	N/A	100.0	-	-	33.1	32.7	23.9
WI170NO	362236	396675	Roadside	N/A	100.0	-	-	28.7	28.5	21.4

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
WI171NO	357095	400717	Roadside	N/A	100.0	-	-	31.5	33.2	24.0
WI172NO	356881	401314	Kerbside	N/A	100.0	-	-	32.7	32.2	22.0
WI173NO	357983	405377	Roadside	N/A	100.0	-	-	31.3	35.8	26.6
WI174NO	358294	405137	Roadside	N/A	100.0	-	-	33.0	38.2	27.3
WI175NO	358537	405774	Roadside	N/A	100.0	-	-	30.6	28.5	20.2
WI176NO	359227	405480	Roadside	N/A	100.0	-	-	28.3	33.7	21.9
WI177NO	356230	410105	Kerbside	N/A	100.0	-	-	30.5	35.1	20.5
WI178NO	356021	410128	Kerbside	N/A	90.4	-	-	**42.1**	**46.1**	30.3
WI179NO	354900	410475	Kerbside	N/A	100.0	-	-	24.6	28.6	17.8
WI180NO	362105	396491	Kerbside	N/A	100.0	-	-	**57.7**	**57.9**	**41.9**
WI181NO	354819	406235	Kerbside	N/A	100.0	-	-	32.5	30.8	22.1
WI182NO	358756	406175	Kerbside	N/A	90.4	-	-	33.5	28.8	21.4
WI183NO	358595	405297	Roadside	N/A	100.0	-	-	32.0	39.2	27.1
WI184NO	358013	405654	Roadside	N/A	100.0	-	-	36.4	30.0	22.5

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
WI185NO	358054	405613	Kerbside	N/A	90.4	-	-	32.7	31.8	23.8
WI186NO	358070	405587	Kerbside	N/A	100.0	-	-	32.7	**40.6**	31.8
WI187NO	360470	402400	Roadside	N/A	100.0	-	-	34.2	36.5	27.9
WI188NO	362111	396526	Roadside	N/A	92.3	-	-	36.4	38.3	27.9
WI189NO	362095	396547	Kerbside	N/A	100.0	-	-	34.3	35.1	22.0
WI190NO	358611	405994	Kerbside	N/A	90.4	-	-	36.4	-	22.3
WI192NO	356771	403124	Roadside	N/A	100.0	-	-	-	33.1	21.0
WI23NO	361835	404090	Roadside	N/A	100.0	36.3	34.5	35.9	34.6	25.9
WI24NO	358341	405539	Roadside	N/A	84.6	**47.3**	32.6	-	-	20.1
WI28NO	366424	399894	Roadside	N/A	82.7	38.6	38.0	34.0	33.6	25.7
WI30NO	363833	402028	Roadside	N/A	100.0	35.2	27.6	26.5	27.5	20.5
WI33NO	359723	405537	Roadside	N/A	100.0	**41.8**	37.6	38.9	**42.1**	28.7
WI35NO	357132	398670	Kerbside	N/A	100.0	39.0	**41.0**	34.9	37.3	25.2
WI47NO, WI48NO, WI49NO	357812	406021	Urban Background	N/A	100.0	23.5	23.6	23.0	28.6	18.0

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
WI51NO	358787	405933	Kerbside	N/A	100.0	29.9	29.1	29.7	31.7	20.7
WI52NO	362137	396948	Roadside	N/A	100.0	**41.7**	**41.6**	37.3	39.4	27.1
WI53NO	353896	408518	Urban Background	N/A	100.0	33.9	27.2	25.4	25.9	18.1
WI54NO	370612	400586	Urban Background	N/A	100.0	33.9	31.6	28.9	30.3	21.7
WI63NO	356928	404982	Roadside	N/A	100.0	-	26.9	27.5	28.7	20.3
WI71NO	368244	402563	Roadside	N/A	100.0	36.9	35.0	32.7	33.1	25.9
WI81NO	355979	410362	Roadside	N/A	100.0	30.5	28.6	26.4	28.1	19.3

☒ **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**.

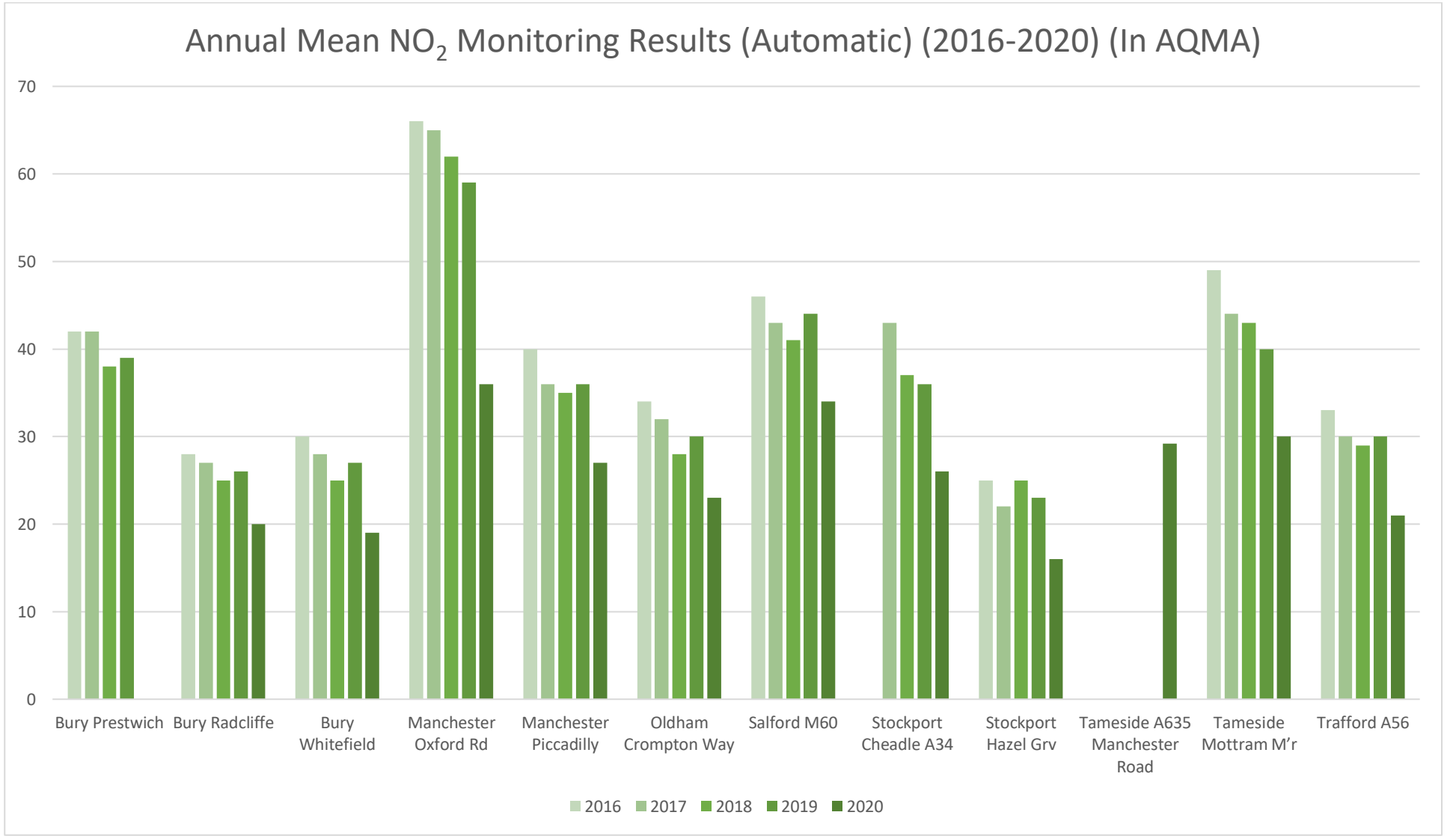
Means for diffusion tubes have been corrected for bias. All means have been "annualised" as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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



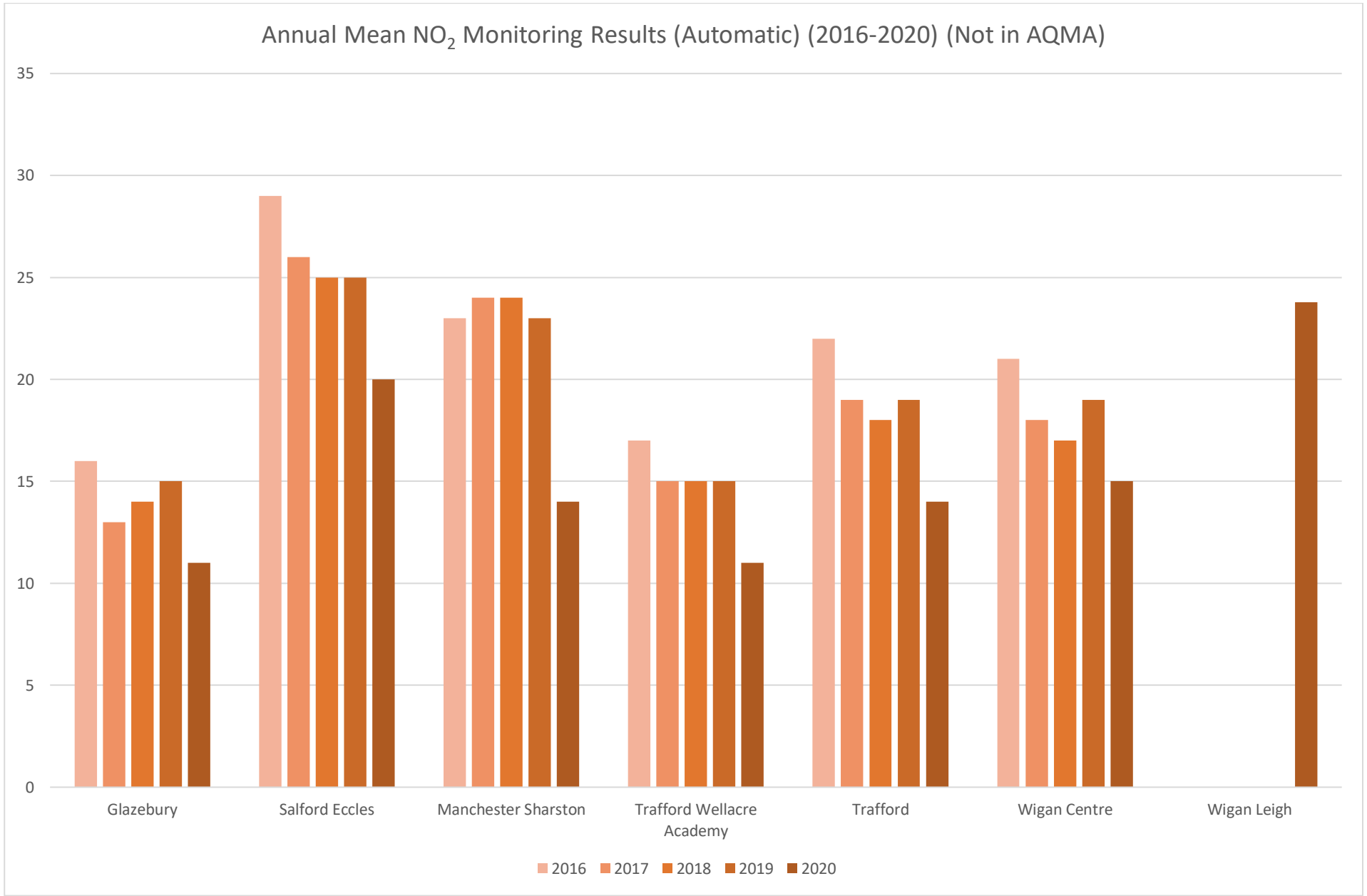

Annual Mean NO_2 Monitoring Results (Automatic) (2016-2020) (Not in AQMA)
35
30
25
20
15
10
5
0
Glazebury
Salford Eccles
Manchester Sharston
Trafford Wellacre Academy
Trafford
Wigan Centre
Wigan Leigh
2016
2017
2018
2019
2020

Table A.5 – 1-Hour Mean NO_2 Monitoring Results, Number of 1-Hour Means > 200µg/m^3

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
Bolton A579 Derby Street	371280	408577	Roadside	N/A	15.29	-	-	-	-	**0(92)**
Bury Whitefield	380637	406974	Roadside	N/A	98.01	**0**	0	0	2	**0**
Bury Prestwich	381650	403222	Roadside	N/A	7.24	0	0	0	0	**0(91)**
Bury Radcliffe	378190	407480	Roadside	N/A	88.05	0	5	0	0	0
Glazebury	368759	396027	Rural	N/A	97.51	0	0	**0(69)**	0	0
Manchester Oxford Rd	384233	397287	Kerbside	N/A	99.56	**90**	6	2	1	0
Manchester Piccadilly	384310	398337	Urban Centre	N/A	99.19	0	1	0	0	0
Manchester Sharston	384179	386086	Suburban	N/A	99.21	0	0	0	0	0
Oldham Crompton Way	393887	409191	Roadside	N/A	97.93	0	0	0	**0**	0
Salford Eccles	377926	398727	Industrial	N/A	99.64	0	0	0	0	0
Salford M60	374811	400857	Roadside	N/A	98.96	0	0	0	0	0
Stockport Hazel Grv	391481	387637	Roadside	N/A	89.67	0	0	0	0	0
Tameside Mottram M'r	399719	395804	Roadside	N/A	96.48	0	0	0	0	0

Site 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
Trafford Wellacre Academy	373758	394473	Urban Background	N/A	98.58	0	0	0	0	0
Trafford	378783	394726	Urban Background	N/A	93	0	0	0	0	0
Trafford A56	379413	394014	Roadside	N/A	99.39	0	0	0	0	0
Wigan Centre	357816	406024	Urban Background	N/A	99.69	0	0	0	0	0
Stockport Cheadle A34	385047	388339	Roadside	N/A	97.8	-	0	0	0	0
Tameside A635 Manchester Road	392538	398419	Roadside	N/A	28.75	-	-	-	-	0
Wigan Leigh 3	365686	400243	Roadside	N/A	52.45	-	-	-	-	**0(87)**

Notes:

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

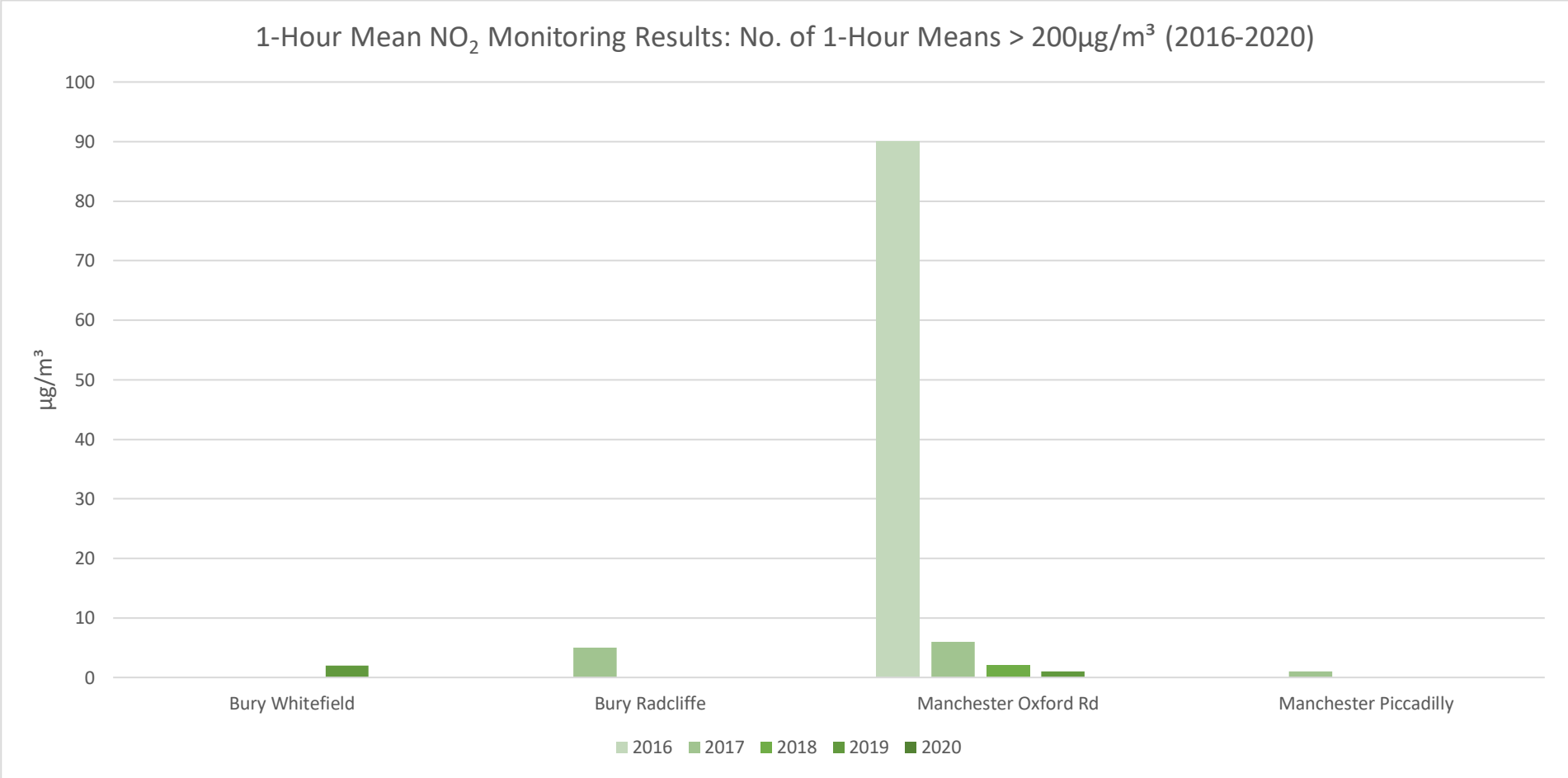
Exceedances of the NO_2 1-hour mean objective (200µg/m^3 not to be exceeded more than 18 times/year) are shown in **bold**.

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

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

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

Figure A.2 – Trends in Number of NO_2 1-Hour Means > 200µg/m^3.[20]



[20] Only monitoring stations with at least one exceedance between 2016 and 2020 have been represented.

Table A.6 – Annual Mean PM_{10} Monitoring Results ($\mu g/m^3$)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
Bury Whitefield	380637	406974	Roadside	N/A	94.02	15	15	16	18	16
Bury Radcliffe	378190	407480	Roadside	N/A	86.66	18	16	18	17	18
Manchester Oxford Rd	384233	397287	Kerbside	N/A	93.36	27	27	30	26	18
Manchester Piccadilly	384310	398337	Urban Centre	N/A	95.88	20	20	21	20	15
Manchester Sharston	384179	386086	Suburban	N/A	93.2	13.6	13.4	14.24	14.2	11.9
Oldham Crompton Way	393887	409191	Roadside	N/A	96.2	17	17	19	19	15
Salford Eccles	377926	398727	Industrial	N/A	99.91	17	16	17	15	14
Salford M60	374811	400857	Roadside	N/A	94.76	20	20	20	21	19
Stockport Hazel Grv	391481	387637	Roadside	N/A	94.26	19	16	19	15	18
Tameside Mottram M'r	399719	395804	Roadside	N/A	94.6	18	17	19	18	17
Trafford	378783	394726	Urban Background	N/A	91.29	15	13	14	15	13
Trafford A56	379413	394014	Roadside	N/A	88.83	17	15	18	17	14
Wigan Centre	357816	406024	Urban Background	N/A	99.85	16	15	17	15.65	13
Stockport Cheadle A34	385047	388339	Roadside	N/A	99.07	-	18	19	17	15

Site 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
Wigan Leigh 3	365686	400243	Roadside	N/A	52.25	-	-	-	-	16.29
Tameside A635 Manchester Road	392538	398419	Roadside	N/A	29.01	-	-	-	-	15.82
Bury Prestwich (3)	381650	403222	Roadside	N/A	7.25	19	19	19	19	17
Bolton A579 Derby Street (3)	371280	408577	Roadside	N/A	18.73	-	-	-	-	**15**

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

Notes:

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

Exceedances of the PM_{10} annual mean objective of 40µg/m^3 are shown in **bold**.

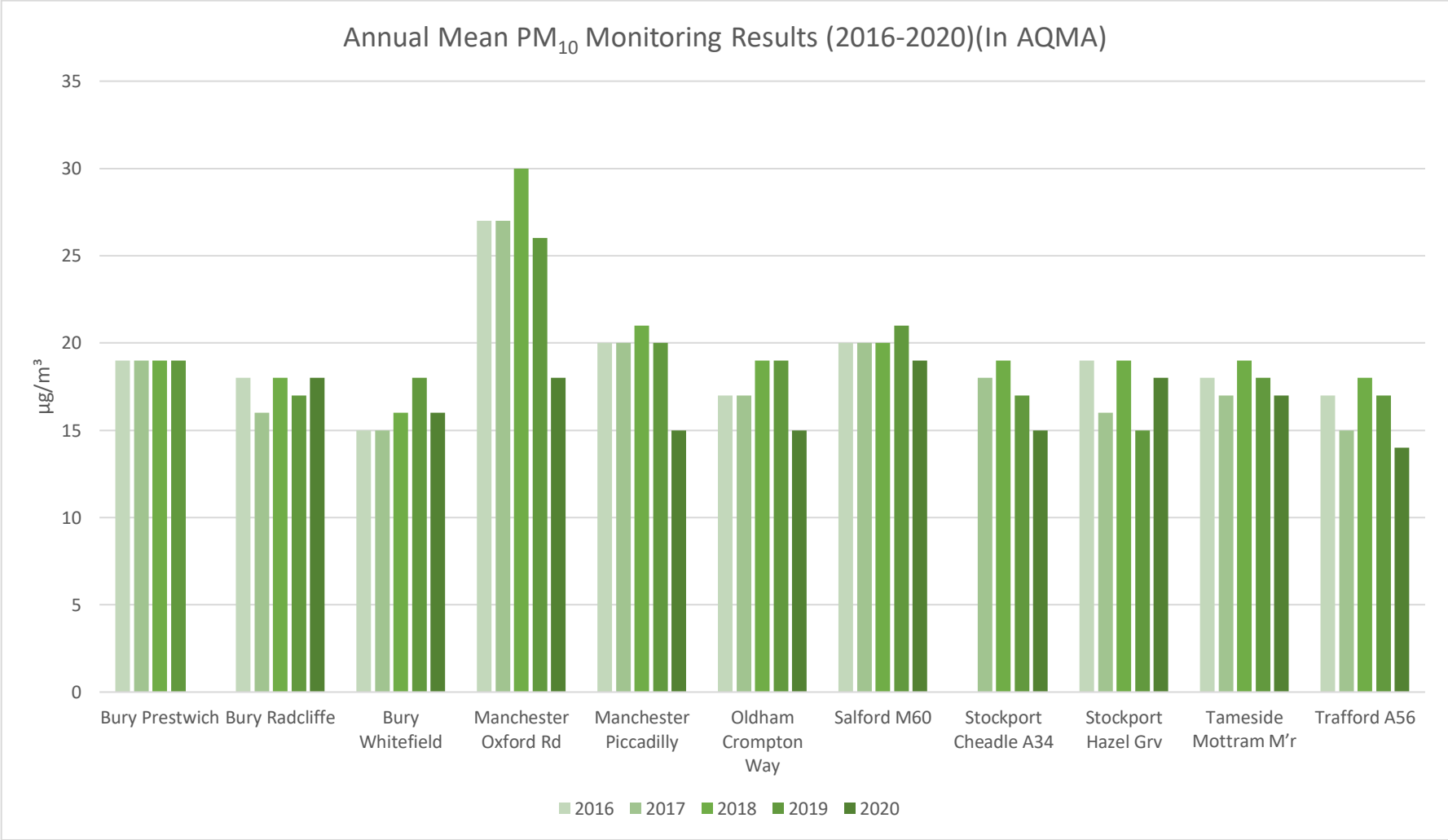
All means have been "annualised" as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

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

(3) Insufficient Data capture. Results should be treated with caution.

Figure A.3 – Trends in Annual Mean PM_{10} Concentrations



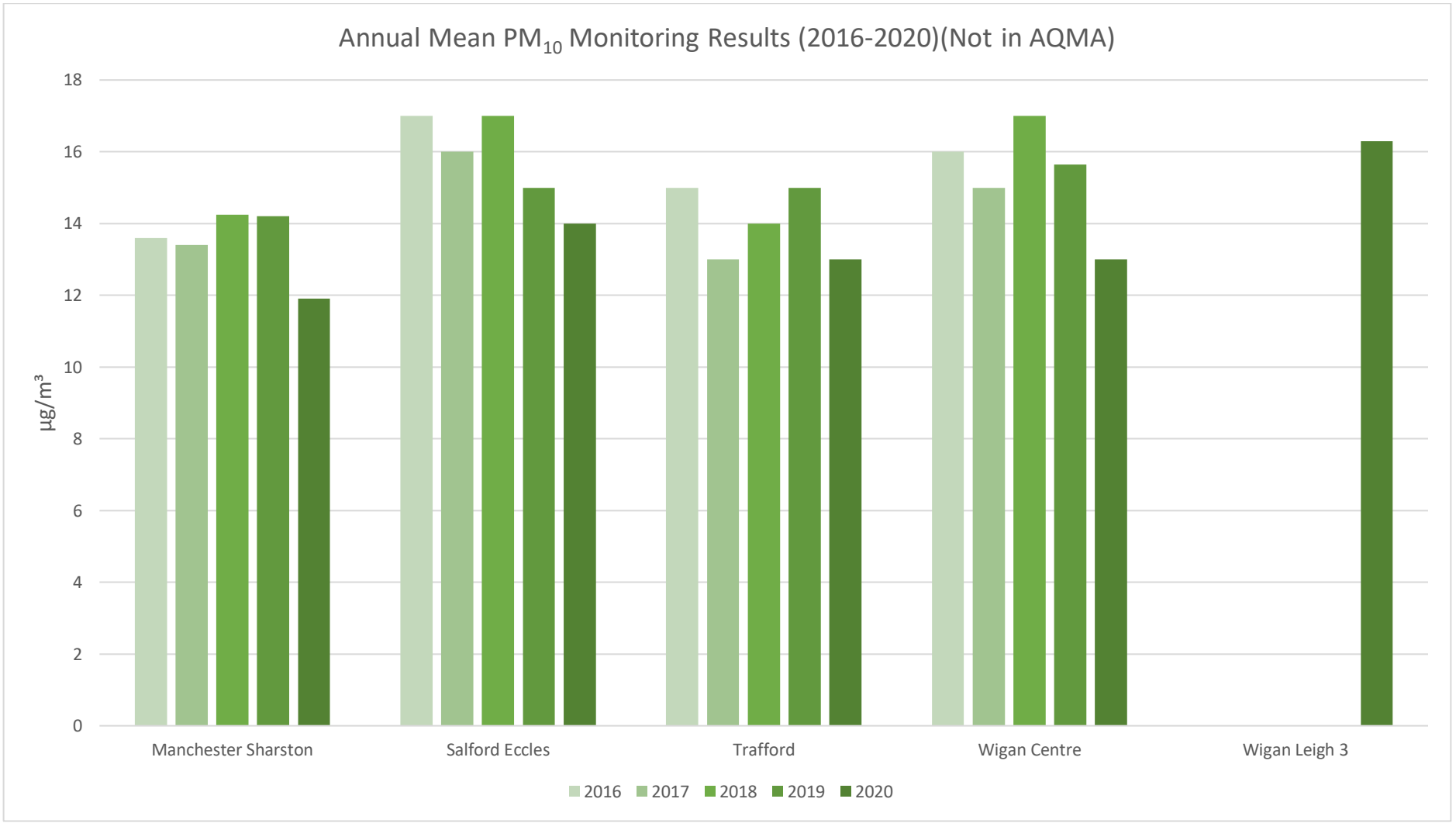

Annual Mean PM10 Monitoring Results (2016-2020)(Not in AQMA)
µg/m³
18
16
14
12
10
8
6
4
2
0
Manchester Sharston
Salford Eccles
Trafford
Wigan Centre
Wigan Leigh 3
2016
2017
2018
2019
2020

Table A.7 – 24-Hour Mean PM_{10} Monitoring Results, Number of PM_{10} 24-Hour Means > 50µg/m^3

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
Bury Whitefield	380637	406974	Roadside	N/A	94.02	1	1	2	9	0
Bury Radcliffe	378190	407480	Roadside	N/A	86.66	2	1	1	10	3
Manchester Oxford Rd	397287	397287	Kerbside	N/A	93.36	16	15	15	18	5
Manchester Piccadilly	384310	398337	Urban Centre	N/A	95.88	3	3	2	7	1
Oldham Crompton Way	393887	409191	Roadside	N/A	96.2	1	2	0	9	0
Salford M60	374811	400857	Roadside	N/A	94.76	5(34)	8	4	11	0
Salford Eccles	377926	398727	Industrial	N/A	99.91	2	5	2	8	0
Stockport Hazel Grv	391481	387637	Roadside	N/A	94.26	5	1	5(33)	3(26)	0
Tameside Mottram M'r	399719	395804	Roadside	N/A	94.6	0	2	0	7	0
Trafford	378783	394726	Urban Background	N/A	91.29	0	0	0	3	0
Trafford A56	379413	394014	Roadside	N/A	88.83	0	0	0	5	1
Wigan Centre	357816	406024	Urban Background	N/A	99.85	0	3	1	3	1
Stockport Cheadle A34	385047	388339	Roadside	N/A	99.07	-	0	0	3	0

Site 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
Manchester Sharston	384179	386086	Suburban	N/A	93.2	0	0	0	3	0
Wigan Leigh 3	365686	400243	Roadside	N/A	52.25	-	-	-	-	2(24)
Tameside A635 Manchester Road	392538	398419	Roadside	N/A	29.01	-	-	-	-	1(25)
Bolton A579 Derby Street (3)	371280	408577	Roadside	N/A	18.73	-	-	-	-	1(22)
Bury Prestwich (3)	381650	403222	Roadside	N/A	7.25	1	4(29)	1	9	0(25)

Notes:

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

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

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

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

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

(3) Insufficient Data capture. Results should be treated with caution.

Figure A.4 – Trends in Number of 24-Hour Mean PM_{10} Results > 50µg/m^3

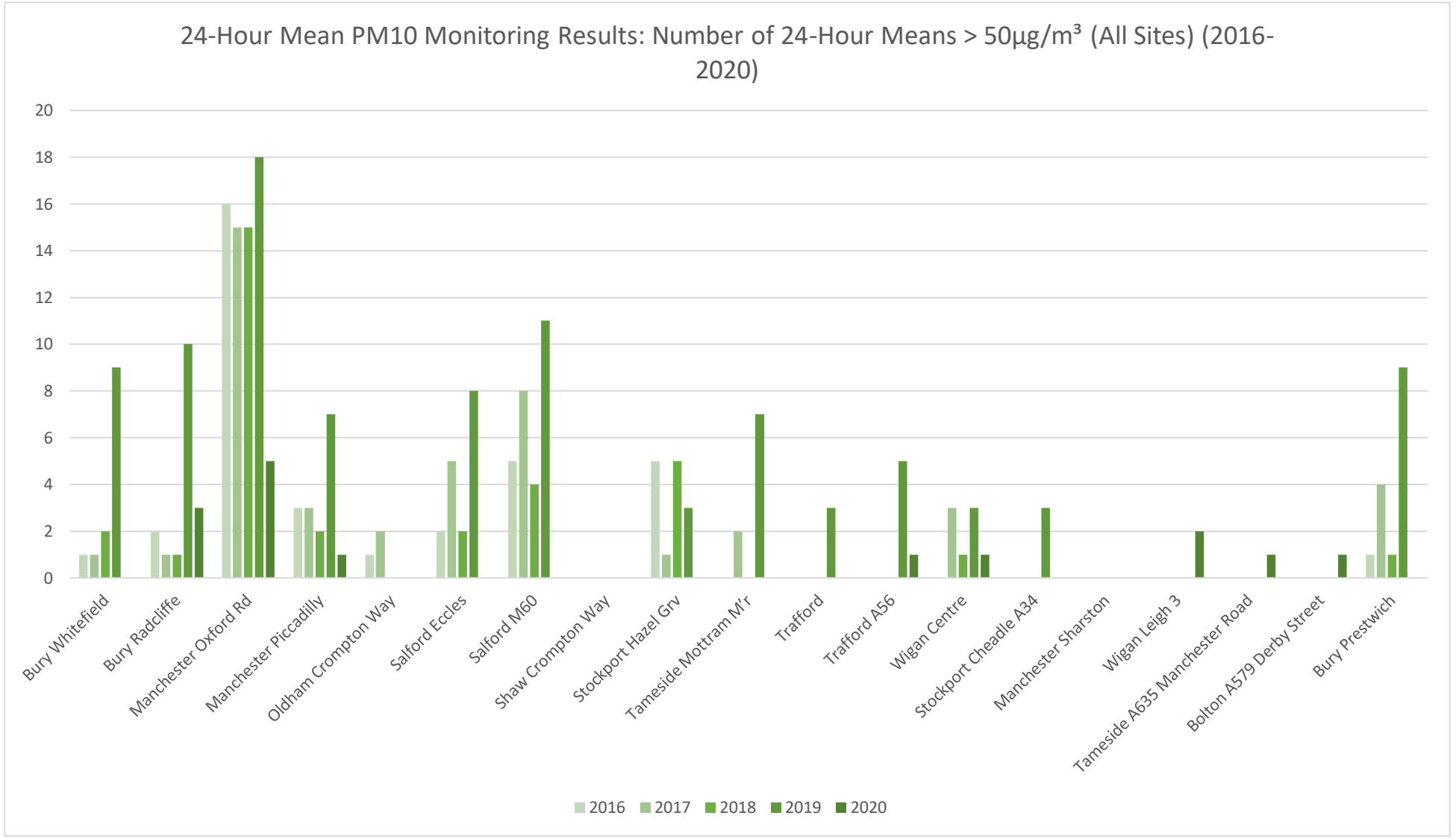


Table A.8 – Annual Mean $PM_{2.5}$ Monitoring Results (µg/m^3)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2020 (%) (2)	2016	2017	2018	2019	2020
Manchester Piccadilly	384310	398337	Urban Centre	N/A	95.88	10	8	11	12	8
Salford Eccles	377926	398727	Industrial	N/A	99.91	10	11	11	9	8
Salford M60	374811	400857	Roadside	N/A	93.34	-	9	10	10	10
Wigan Centre	357816	406024	Urban Background	N/A	99.85	11	10	12	10	8
Wigan Leigh 3	365686	400243	Urban Background	N/A	51.59	-	-	-	-	7.75
Tameside A635 Manchester Road	392538	398419	Roadside	N/A	29.93	-	-	-	-	8.36
Bolton A579 Derby Street (3)	371280	408577	Roadside	N/A	19.83	-	-	-	-	10

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

Notes:

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

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

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

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

(3) Insufficient Data capture. Results should be treated with caution.

Figure A.5 – Trends in Annual Mean $PM_{2.5}$ Concentrations

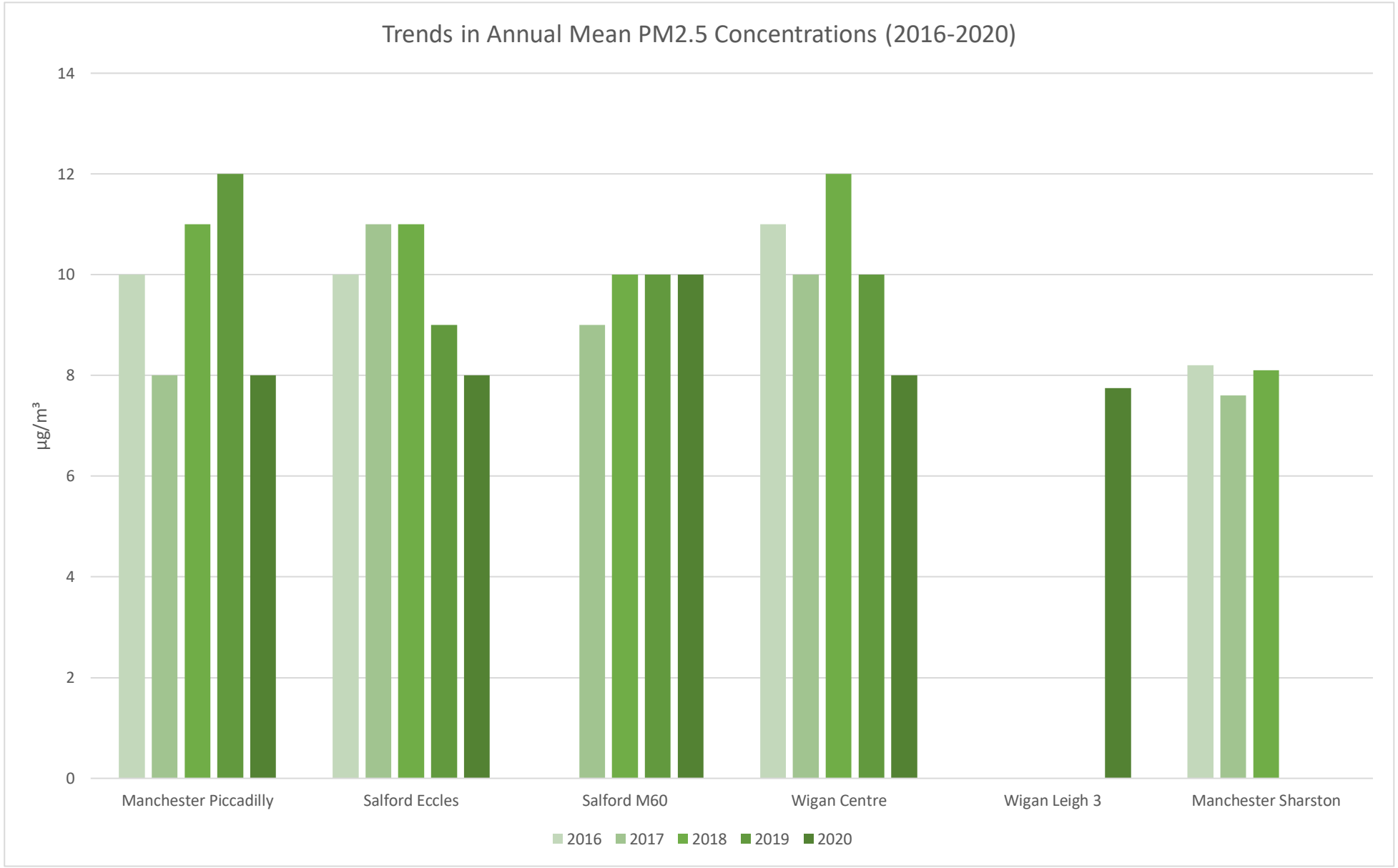


Table A.9 – SO_2 2020 Monitoring Results, Number of Relevant Instances

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2020 (%) (2)	Number of 15-minute Means > 266µg/m^3	Number of 1-hour Means > 350µg/m^3	Number of 24-hour Means > 125µg/m^3
Manchester Sharston	384179	386086	Suburban	N/A	95.91	0	0	0
Manchester Piccadilly	384310	398337	Urban Centre	N/A	98.41	0	0	0

Notes:

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

Exceedances of the SO_2 objectives are shown in **bold** (15-min mean = 35 allowed a year, 1-hour mean = 24 allowed a year, 24-hour mean = 3 allowed a year).

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

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

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

Appendix B: Full Monthly Diffusion Tube Results for 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 (0.85)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
BO11NO	363712	412396	19.3	5.5	I/S	7.8	5.7	7.8	7.6	8.7	10.1	I/S	I/S	I/S	9.1	9.0	-	
BO14NO	373839	406130	35.3	28.1	21.0	12.8	11.4	14.1	12.9	< 1.0	18.8	21.3	26.3	22.7	20.4	17.4	-	
BO15NO	371435	411690	51.1	39.4	32.3	21.3	22.8	33.9	26.8	31.7	32.7	39.4	41.6	37.0	34.2	29.0	-	
BO16NO	371304	411748	29.5	28.1	17.6	10.1	9.1	14.2	11.8	15.1	16.4	18.7	24.6	23.3	18.2	15.5	-	
BO3NO	370763	407929	47.9	48.5	36.4	23.9	27.6	39.4	28.0	37.1	34.3	40.9	44.5	41.1	37.5	31.8	-	
BO41NO	366286	406561	40.3	33.8	I/S	21.6	17.1	26.0	21.2	I/S	62.9	32.3	42.1	35.3	33.3	28.3	-	
BO43NO	365501	409887	48.4	40.5	30.2	13.3	18.9	28.6	20.4	29.5	25.7	34.4	41.6	32.5	30.3	25.8	-	
BO44NO	365599	409845	38.5	29.0	21.3	10.3	9.9	15.7	15.0	14.3	I/S	21.7	29.1	23.6	-	-	-	Duplicate Site with BO44NO and BO45NO - Annual data provided for BO45NO only
BO45NO	365599	409845	34.3	27.7	20.0	11.2	12.0	14.8	16.8	14.2	21.2	I/S	31.3	25.8	20.9	17.7	-	Duplicate Site with BO44NO and BO45NO - Annual data provided for BO45NO only
BO48NO	375397	407457	35.7	28.5	23.1	12.5	13.5	19.4	19.2	I/S	41.3	25.8	33.9	40.7	26.7	22.7	-	
BO4NO	371394	411718	36.5	32.9	22.1	12.3	12.1	18.7	14.7	17.0	21.7	19.7	34.0	30.1	22.7	19.3	-	
BO53NO	373236	411968	24.3	24.1	I/S	12.4	10.6	14.1	10.3	14.4	15.4	< 1.0	48.2	22.6	19.6	16.7	-	
BO54NO	372908	412120	21.9	18.9	12.6	7.5	6.1	8.4	7.2	8.6	I/S	13.3	21.2	18.7	13.1	11.2	-	
BO60NO	373287	405061	40.2	28.3	25.8	18.9	16.6	24.0	21.2	22.2	29.3	31.5	40.3	37.2	28.0	23.8	-	
BO61NO	374450	405207	42.6	33.6	I/S	18.3	19.8	32.4	23.8	35.9	31.6	37.9	41.8	42.2	32.7	27.8	-	
BO62NO	374194	405460	48.2	42.5	33.2	19.6	23.5	33.3	24.8	30.6	33.0	36.9	37.0	38.7	33.4	28.4	-	
BO63NO	374282	406257	31.3	26.6	20.3	13.1	11.4	14.8	15.0	17.3	20.7	24.8	30.3	27.0	21.1	17.9	-	
BO64NO	371965	409907	41.2	37.6	24.5	11.0	11.2	22.3	16.9	22.4	25.2	29.0	33.1	34.0	25.7	21.8	-	

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 (0.85)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
BO65 NO	372059	409877	36.2	33.1	23.2	12.8	13.9	20.4	21.8	21.9	29.7	26.5	34.1	30.0	25.3	21.5	-	
BO66 NO	371442	411599	45.1	36.1	31.9	18.5	20.4	29.5	22.7	31.5	I/S	45.1	44.5	50.5	34.2	29.0	-	
BO67 NO	365163	405640	26.0	22.4	18.5	12.3	I/S	I/S	10.6	15.8	I/S	33.0	27.8	27.3	21.5	18.3	-	
BO68 NO	367672	406910	43.8	38.6	28.6	13.3	16.5	23.2	20.9	20.9	27.2	28.2	29.3	28.2	26.6	22.6	-	
BO69 NO	369030	405809	55.6	43.2	40.2	26.1	31.6	47.0	34.7	43.9	46.8	50.0	47.6	42.0	42.4	36.0	31.2	
BO70 NO	368757	405701	21.9	22.8	20.6	13.0	12.7	16.6	11.7	17.4	21.3	20.4	33.1	15.6	18.9	16.1	-	
BO71 NO	370362	405400	57.7	41.2	43.9	26.4	34.4	48.7	37.6	45.7	50.0	51.0	48.1	51.6	44.7	38.0	-	
BO72 NO	370115	405372	35.3	30.6	26.1	17.2	16.0	I/S	36.8	26.3	I/S	49.1	34.3	27.2	29.9	25.4	-	
BO73 NO	371805	409820	62.4	51.7	40.2	19.6	26.9	40.5	34.5	11.3	40.8	47.1	48.2	43.1	38.9	33.0	-	
BO74 NO	371805	409832	48.1	41.6	38.3	22.1	24.5	39.0	24.6	40.4	38.2	42.1	43.8	46.7	37.5	31.8	-	
BO75 NO	371623	409235	37.7	31.0	I/S	16.2	11.3	130.6	17.3	15.4	15.1	25.9	33.9	30.7	33.2	28.2	-	
BO76 NO	373491	404836	43.6	35.5	28.9	16.0	16.6	23.2	19.2	22.0	23.9	29.7	35.1	34.0	-	-	-	Triplicate Site with BO76NO, BO77NO and BO78NO - Annual data provided for BO78NO only
BO77 NO	373491	404836	42.6	34.3	30.7	15.9	14.6	23.9	18.4	21.6	27.7	29.7	37.2	34.1	-	-	-	Triplicate Site with BO76NO, BO77NO and BO78NO - Annual data provided for BO78NO only
BO78 NO	373491	404836	35.7	31.2	32.1	16.7	17.0	22.5	18.2	16.7	27.7	29.6	38.2	26.7	27.0	22.9	-	Triplicate Site with BO76NO, BO77NO and BO78NO - Annual data provided for BO78NO only
BO8NO	371352	409094	30.9	28.1	I/S	14.5	10.8	16.0	14.6	16.9	20.3	25.2	31.5	30.2	21.7	18.5	-	
BOA101	374561	405364	40.0	40.1	23.4	12.9	13.7	24.0	23.2		24.8	32.1	36.4	34.4	27.7	23.6	-	
BOA102	374584	405525	I/S	41.4	29.7	14.7	17.8	25.9	I/S		27.6	34.9	43.0	31.4	29.6	25.2	-	
BOA103	374526	405906	33.6	29.5	21.6	14.1	13.9	21.1	16.3		20.9	25.7	32.7	31.2	23.7	20.1	-	
BOA104	373795	406600	I/S	I/S	53.6	I/S	I/S	28.0	32.4		I/S	50.4	30.7	30.1	37.5	29.7	-	
BOA105	373604	406882	46.3	41.5	28.6	14.8	18.7	25.9	25.9		26.0	33.1	39.8	33.5	30.4	25.8	-	
BOA106	372643	408070	I/S	I/S	37.0	16.7	I/S	I/S	I/S		I/S	I/S	I/S	I/S	-	-	-	

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 (0.85)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
BOA107	372643	408070	33.3	29.7	21.4	I/S	I/S	I/S	I/S		20.1	24.8	I/S	29.2	26.4	19.1	-	
BOA108	372430	408765	I/S	I/S	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A		-	-	
BOA109	373818	409401	31.5	29.9	22.6	14.7	13.0	17.7	14.7		15.8	20.3	25.4	26.1	21.1	17.9	-	
BOA110	371501	409694	40.7	40.0	33.7	20.7	18.9	33.8	23.8		32.5	36.0	44.4	64.6	35.4	30.1	-	
BOA111	371102	409575	48.2	I/S	I/S	I/S	16.2	27.5	26.6		27.7	35.3	41.0	37.6	32.5	26.7	-	
BOA112	371715	408681	42.8	41.6	35.4	25.8	22.1	36.6	28.8		I/S	I/S	I/S	38.3	33.9	29.2	-	
BOA113	374510	405522	40.6	36.2	24.2	15.2	16.4	23.9	18.1		23.4	28.5	37.9	37.0	27.4	23.3	-	
BOA114	372122	409347	42.5	38.8	30.2	15.7	19.0	28.2	20.8		26.2	32.3	38.2	39.9	30.2	25.6	-	
BOA115	371903	409026	I/S	I/S	41.8	19.5	78.2	55.1	29.8		38.9	39.0	44.6	30.7	42.0	35.7	-	
BOA116	371803	408976	I/S	48.4	39.1	20.8	20.0	34.6	27.4		33.7	39.2	42.7	40.1	34.6	29.4	-	
BOA117	371288	408592	39.7	35.6	28.3	14.6	16.8	27.2	20.9		22.7	31.0	37.9	39.2	28.5	24.3	-	
BOA118	371832	409625	44.8	39.1	27.1	14.6	13.7	23.1	20.5		22.5	25.6	34.0	33.1	27.1	23.0	-	
BOA119	371328	409251	37.1	29.1	31.5	I/S	19.7	29.8	4.2		30.0	34.7	37.5	44.1	29.8	25.3	-	
BU10NO	379854	410978	43.4	46.0	26.2	18.5	21.6	28.5	32.0	26.3	32.9	40.1	38.6	31.6	32.1	27.3	-	
BU11NO	380977	411193	39.9	52.3	36.4	23.7	25.6	32.9	33.6	37.2	41.1	43.8	48.2	41.2	38.0	32.3	-	
BU12NO	381378	410741	46.3	60.8	38.5	21.5	29.1	33.0	41.3	41.1	48.0	50.2	45.6	38.5	41.2	35.0	-	
BU13NO	381802	410639	40.6	57.0	38.4	23.9	28.1	35.6	37.5	51.9	45.7	43.9	45.8	32.0	40.0	34.0	-	
BU14NO	380398	410455	I/S	45.9	29.2	16.5	18.0	24.1	22.8	31.2	37.9	40.4	41.1	41.1	31.7	26.9	-	
BU15NO	380852	405204	50.2	60.3	32.9	20.1	25.7	32.7	I/S	38.1	42.8	46.4	50.1	45.9	40.5	34.4	-	
BU16NO	380916	404891	44.3	51.1	35.8	17.2	18.8	34.2	33.3	39.1	42.1	51.7	49.4	41.9	38.2	32.5	-	
BU17NO	381105	404279	38.0	38.3	25.1	16.6	18.9	I/S	28.4	23.2	35.6	37.9	40.3	30.9	30.3	25.7	-	

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 (0.85)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
BU18NO	382071	411362	35.7	41.3	32.2	21.1	21.4	30.3	22.6	36.6	35.8	39.8	40.3	36.4	32.8	27.9	-	
BU19NO	381321	405115	40.3	50.3	37.8	25.4	28.2	33.6	32.5	42.0	40.4	45.2	47.6	38.4	38.5	32.7	-	
BU1NO	384372	404917	35.7	38.8	24.6	15.6	18.1	23.0	25.2	24.1	27.5	46.7	32.7	32.6	28.7	24.4	-	
BU20NO	382974	405930	38.8	47.2	30.7	16.1	21.1	24.5	31.2	25.6	32.9	35.3	35.5	29.0	30.7	26.1	-	
BU2NO	379103	417141	36.0	41.8	28.0	19.9	24.5	35.6	28.3	31.7	34.7	29.7	36.3	7.2	29.5	25.1	-	
BU3ANO	380636	406969	29.5	29.7	I/S	I/S	I/S	I/S	I/S	I/S	I/S	I/S	I/S	I/S	-	-	-	Triplicate Site with BU3ANO, BU3BNO and BU3CNO - Annual data provided for BU3CNO only
BU3BNO	380636	406969	29.9	28.8	I/S	I/S	I/S	I/S	I/S	I/S	I/S	I/S	I/S	I/S	-	-	-	Triplicate Site with BU3ANO, BU3BNO and BU3CNO - Annual data provided for BU3CNO only
BU3CNO	380636	406969	30.2	29.2	I/S	I/S	I/S	I/S	I/S	I/S	I/S	I/S	I/S	I/S	29.6	25.1	-	Triplicate Site with BU3ANO, BU3BNO and BU3CNO - Annual data provided for BU3CNO only
BU4NO	380964	404831	40.1	43.2	28.1	19.2	21.1	28.1	26.5	31.0	33.6	40.6	41.3	34.6	32.3	27.4	-	
BU5NO	380501	405413	31.2	33.9	20.9	11.6	I/S	I/S	18.6	19.3	25.1	27.7	31.1	29.2	24.9	21.1	-	
BU6NO	379658	410888	34.7	43.5	32.4	17.1	21.5	27.0	30.8	31.2	35.7	38.5	39.5	36.6	32.4	27.5	-	
BU7NO	381984	411866	36.1	38.3	22.2	11.9	15.6	22.2	28.0	22.9	31.7	32.0	38.2	31.4	27.5	23.4	-	
BU8NO	380754	412615	36.6	35.3	24.9	16.1	16.8	23.8	21.2	27.4	28.7	36.0	39.9	28.0	27.9	23.7	-	
BU9NO	379630	411031	36.7	43.6	I/S	13.9	17.9	I/S	28.1	27.7	32.3	39.1	40.2	39.5	31.9	27.1	-	
MA100NO	383605	402293	47.7	48.5	36.5	22.4	25.9	32.2	25.6	34.3	38.1	40.7	45.7	42.8	36.7	31.2	-	
MA101NO	385999	402026	46.2	40.7	28.0	19.6	23.2	34.0	23.0	33.3	39.4	34.8	49.1	25.0	33.0	28.1	-	
MA102NO	385792	402952	43.5	39.1	30.3	18.0	22.6	31.9	27.2	30.1	37.3	38.2	44.1	36.7	33.3	28.3	-	
MA103NO	385431	400653	52.9	49.6	42.2	24.4	31.1	40.6	33.0	38.3	46.7	41.1	51.0	50.5	41.8	35.5	-	
MA104NO	383511	399906	53.1	44.8	35.2	15.4	23.9	35.9	27.8	34.8	40.1	42.4	47.4	31.0	36.0	30.6	-	
MA24NO	383968	398070	47.6	I/S	31.8	15.6	17.8	26.8	26.2	31.9	37.0	35.6	39.6	36.9	31.5	26.8	-	
MA26ANO	383973	398874	43.9	38.5	26.4	14.6	14.8	21.8	16.7	22.2	28.3	28.2	35.1	33.0	27.0	22.9	-	

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MA28 NO	387951	397430	43.7	I/S	27.5	18.5	19.7	28.4	25.8	28.7	35.1	36.2	39.8	38.2	31.1	26.4	-	
MA29 ANO	384119	397503	62.9	< 1.0	99.6	25.5	25.5	45.4	35.1	44.1	52.3	50.4	45.5	18.7	45.9	39.0	37.7	
MA36 NO	385203	399750	44.0	36.7	27.7	14.0	16.9	23.4	20.0	24.7	31.6	32.6	38.1	33.3	28.6	24.3	-	
MA37 NO	382829	391493	42.4	37.8	36.0	14.9	18.4	29.4	26.8	27.5	34.0	36.6	37.3	38.9	31.7	26.9	-	
MA59 NO	384310	398337	40.0	36.5	28.0	11.3	13.8	21.9	18.1	23.3	27.7	26.9	35.3	34.1	-	-	-	Triplicate Site with MA59NO, MA60NO and MA61NO - Annual data provided for MA61NO only
MA60 NO	384310	398337	41.4	36.1	28.0	11.6	14.7	22.6	18.3	23.2	28.2	29.9	34.5	30.1	-	-	-	Triplicate Site with MA59NO, MA60NO and MA61NO - Annual data provided for MA61NO only
MA61 NO	384310	398337	40.8	36.1	27.3	11.8	13.8	22.5	18.3	23.3	27.4	29.7	35.7	22.4	26.2	22.3	-	Triplicate Site with MA59NO, MA60NO and MA61NO - Annual data provided for MA61NO only
MA71 NO	385161	398290	59.3	51.9	33.2	17.2	23.3	31.7	30.2	30.2	38.5	39.4	47.4	41.2	37.0	31.4	-	
MA72 NO	384761	397384	40.8	39.0	25.5	16.6	18.6	24.4	23.4	23.8	31.8	31.2	35.2	35.3	28.8	24.5	-	
MA73 NO	388604	396042	40.9	30.9	35.1	19.3	23.2	32.0	24.5	30.9	34.1	35.4	39.8	39.4	32.1	27.3	-	
MA74 NO	385400	390095	41.9	38.7	30.4	13.5	16.4	21.8	21.0	21.8	27.8	32.1	35.0	29.0	27.5	23.3	-	
MA75 NO	387363	394617	51.2	40.7	44.7	24.3	27.7	42.9	28.4	38.1	41.2	42.9	45.7	47.3	39.6	33.7	-	
MA77 NO	383576	397489	44.5	43.0	33.0	16.0	19.7	25.3	23.0	28.7	34.9	37.9	35.9	38.2	31.7	26.9	-	
MA78 NO	386289	396828	43.1	34.1	30.0	13.5	17.2	22.3	21.9	22.3	30.5	33.6	36.6	22.5	27.3	23.2	-	
MA79 NO	386875	395861	39.3	31.7	28.7	14.8	15.4	19.8	21.0	20.7	28.2	31.5	32.5	31.5	26.3	22.3	-	
MA80 NO	387358	393990	34.8	29.5	29.6	15.2	18.7	23.9	20.8	24.7	30.5	32.8	34.0	23.8	26.5	22.5	-	
MA81 NO	386589	394083	31.0	23.0	19.8	10.3	11.4	14.8	13.4	16.0	20.4	21.3	27.4	25.8	19.6	16.6	-	
MA82 NO	384239	397276	54.9	51.8	38.8	23.0	21.1	36.8	33.0	37.7	44.2	45.3	48.4	46.5	-	-	-	Triplicate Site with MA82NO, MA83NO and MA84NO - Annual data provided for MA84NO only
MA83 NO	384239	397276	48.0	49.8	38.0	19.6	21.4	37.8	32.2	37.5	46.4	44.8	46.9	49.2	-	-	-	Triplicate Site with MA82NO, MA83NO and MA84NO - Annual data provided for MA84NO only
MA84 NO	384239	397276	60.9	49.6	36.9	20.4	21.0	35.7	31.8	36.0	48.2	43.9	49.1	48.4	39.9	33.9	-	Triplicate Site with MA82NO, MA83NO and MA84NO - Annual data provided for MA84NO only

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MA86 ANO	387150	396808	43.5	32.3	30.7	16.5	19.7	29.8	19.6	27.3	30.7	31.7	40.2	37.8	30.0	25.5	-	
MA87 ANO	386992	396569	39.1	32.5	26.7	14.4	17.2	18.1	21.2	24.1	30.7	31.9	35.7	31.6	26.9	22.9	-	
MA88 ANO	386536	396699	56.2	46.2	42.0	19.2	22.6	33.5	31.8	32.9	41.4	48.4	47.4	36.9	38.2	32.5	-	
MA88 NO	384469	398981	50.3	I/S	29.6	21.9	22.7	30.5	27.6	36.1	41.2	39.3	44.4	45.8	35.4	30.1	-	
MA89 ANO	386710	396824	45.5	33.7	26.9	13.3	14.4	20.5	23.4	20.2	28.7	32.8	37.6	37.9	27.9	23.7	-	
MA8A NO	381398	387501	34.6	22.6	22.0	12.0	12.8	17.4	14.3	18.2	22.3	22.5	26.5	32.2	21.5	18.2	-	
MA90 NO	384202	386121	28.1	22.2	19.1	9.0	8.8	10.6	10.8	11.4	15.8	16.8	17.4	22.6	-	-	-	Triplicate Site with MA90NO, MA91NO and MA92NO - Annual data provided for MA92NO only
MA91 NO	384202	386121	23.6	26.2	19.0	9.3	8.4	10.2	10.1	11.2	15.6	16.6	18.5	23.0	-	-	-	Triplicate Site with MA90NO, MA91NO and MA92NO - Annual data provided for MA92NO only
MA92 NO	384202	386121	28.4	22.6	20.6	9.1	8.8	10.9	10.7	11.0	15.4	17.0	21.1	18.9	16.1	13.7	-	Triplicate Site with MA90NO, MA91NO and MA92NO - Annual data provided for MA92NO only
MA93 NO	382419	390010	53.3	44.5	42.4	20.7	25.5	29.3	30.1	28.2	I/S	29.5	38.6	38.4	34.6	29.4	-	
MA94 NO	382072	388388	44.0	33.7	31.2	16.7	18.3	I/S	I/S	22.4	31.4	33.1	31.8	34.4	29.7	25.2	-	
MA95 NO	386668	397566	56.8	50.0	38.1	I/S	18.0	31.6	30.0	30.1	36.7	39.0	46.1	31.7	37.1	31.5	-	
MA96 NO	385189	397167	44.9	41.9	32.6	21.1	29.4	40.2	26.0	47.1	49.5	80.7	54.2	46.8	42.9	36.4	35.0	
MA97 NO	382886	397215	< 1.0	I/S	25.6	18.1	18.1	29.5	21.3	29.5	31.4	30.0	34.5	37.3	27.5	23.4	-	
MA98 NO	388460	403313	49.7	48.6	30.9	16.9	18.8	25.9	21.9	26.0	33.3	33.1	40.5	29.9	31.3	26.6	-	
MA99 NO	385400	399245	48.6	40.0	31.7	15.7	19.9	27.4	21.9	28.9	32.5	34.2	44.2	35.4	31.7	26.9	-	
MA9A NO	384601	398303	53.3	59.4	41.0	19.9	21.5	33.0	33.1	34.7	39.0	36.2	45.6	42.1	38.2	32.5	-	
OL13 6RDN O	391863	407968	36.1	30.4	25.2	12.2	15.0	19.0	16.8	21.1	26.7	30.1	I/S	30.8	23.9	20.4	-	
OLAR NO	392771	402951	34.6	45.8	19.8	13.3	19.6	22.2	22.2	25.3	34.1	32.0	34.0	32.0	27.9	23.7	-	
OLB WNO	390125	404833	33.0	26.3	16.4	12.0	12.9	21.6	14.2	20.1	22.9	25.0	I/S	28.8	21.2	18.0	-	

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OLCVNO	399533	404454	25.2	21.2	14.5	9.1	12.1	16.3	13.3	17.1	20.6	20.8	I/S	17.1	17.0	14.5	-	
OLCW1NO	393884	409183	36.5	33.9	25.2	15.8	22.4	25.0	26.6	27.4	32.0	34.4	32.6	30.1	-	-	-	Duplicate Site with OLCW1NO and OLCW2NO - Annual data provided for OLCW2NO only
OLCW2NO	393884	409183	35.8	32.0	24.1	17.7	23.0	26.4	27.4	27.8	33.4	43.2	33.4	28.0	28.9	24.6	-	Duplicate Site with OLCW1NO and OLCW2NO - Annual data provided for OLCW2NO only
OLDLNO	390770	404695	38.9	32.7	20.7	11.7	14.3	20.8	17.9	22.9	28.8	28.8	32.9	29.7	25.0	21.3	-	
OLHRNO	390756	402571	43.2	46.9	30.6	21.7	25.4	30.2	33.1	33.3	37.4	43.1	42.8	37.1	35.4	30.1	-	
OLHSNO	399589	405511	40.8	36.4	23.5	13.8	17.4	24.4	23.3	25.5	30.4	30.4	< 1.0	28.9	26.8	22.8	-	
OLHURNO	395561	405751	41.4	35.8	25.5	18.2	I/S	I/S	25.7	33.2	38.5	34.6	I/S	32.9	31.8	27.0	-	
OLMRNO	390746	405397	41.8	38.6	24.2	I/S	31.6	22.7	23.2	25.1	30.3	32.6	37.8	179.4	44.3	37.7	33.4	
OLMSNO	388871	400997	34.7	31.7	20.6	13.2	I/S	19.8	< 1.0	39.1	30.5	29.5	30.5	31.7	28.1	23.9	-	
OLNSLNO	395225	404648	30.3	I/S	14.9	8.9	I/S	I/S	I/S	I/S	17.3	23.3	I/S	17.7	18.7	14.0	-	
OLNSNO	391217	403860	36.1	30.0	18.6	12.5	13.9	19.5	17.8	22.3	28.2	30.4	38.0	28.0	24.6	20.9	-	
OLOBNO	389715	403625	46.2	42.1	27.5	16.3	19.6	< 1.0	46.0	29.7	33.9	35.8	21.5	33.3	32.0	27.2	-	
OLRDNO	392111	406432	44.8	39.9	18.6	13.8	20.8	25.4	25.2	30.0	37.3	40.0	I/S	39.3	30.5	25.9	-	
OLRRNO	394210	405752	40.6	I/S	26.5	18.7	24.4	32.5	33.3	34.3	41.0	44.2	40.0	34.2	33.6	28.6	-	
OLSHSNO	390394	405454	37.9	37.2	26.6	19.3	19.4	28.4	19.9	29.4	36.7	32.8	I/S	37.7	29.6	25.1	-	
OLSMWNO	392748	405294	35.4	41.8	24.2	11.9	15.9	22.9	24.2	24.7	28.4	35.3	I/S	34.0	27.2	23.1	-	
OLTSNO	393782	405093	43.7	36.2	24.5	14.6	16.7	< 1.0	23.9	26.5	32.9	34.0	32.5	31.8	28.8	24.5	-	
RO10ANO	388800	413603	27.5	23.9	16.8	9.1	8.3	11.8	11.1	12.8	16.4	18.3	26.9	26.6	17.5	14.8	-	
RO12ANO	392072	415687	53.0	41.5	35.2	19.9	22.3	32.7	27.5	26.6	36.8	40.2	49.1	44.9	35.8	30.4	-	
RO13ANO	392042	415707	26.0	20.9	I/S	I/S	I/S	I/S	9.8	10.7	14.4	16.8	25.1	20.7	18.1	14.1	-	
RO14ANO	393665	417816	24.0	18.1	11.9	5.6	5.7	8.5	8.2	I/S	11.2	13.7	24.5	19.2	13.7	11.6	-	

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RO15 ANO	392976	411906	36.1	31.6	26.1	12.7	15.5	20.3	16.7	17.5	24.0	26.9	31.7	27.8	23.9	20.3	-	
RO16 ANO	392542	411709	33.8	29.3	23.8	12.2	13.8	16.2	13.2	18.2	20.4	21.5	32.7	29.7	22.1	18.8	-	
RO17 ANO	391214	412609	34.0	32.1	20.3	9.8	12.2	I/S	16.9	14.7	I/S	21.0	28.8	27.8	21.8	18.5	-	
RO18 ANO	389877	413590	80.8	31.7	20.1	8.3	9.8	13.4	12.8	14.3	18.7	I/S	I/S	35.5	24.5	20.9	-	
RO19 ANO	389971	413646	46.1	42.7	32.4	16.6	19.7	30.8	27.5	30.4	33.5	40.0	47.3	47.0	34.5	29.3	-	
RO20 ANO	385748	408931	41.9	36.1	22.7	12.2	15.4	21.5	21.5	20.4	34.2	33.8	40.7	36.5	28.1	23.9	-	
RO21 ANO	385820	410776	53.3	46.4	33.1	18.0	17.1	27.6	27.4	25.3	27.4	38.5	45.2	40.8	33.3	28.3	-	
RO22 ANO	390464	411976	53.9	42.4	34.9	23.1	25.0	37.2	27.5	31.0	32.8	45.0	45.3	46.6	37.1	31.5	-	
RO23 ANO	390377	412030	41.3	37.0	29.0	22.0	19.5	32.4	21.6	27.7	34.7	35.0	44.7	44.8	32.5	27.6	-	
RO24 ANO	388089	410822	37.0	33.5	25.8	14.5	15.1	19.8	51.0	21.4	27.1	31.5	39.5	33.7	29.2	24.8	-	
RO25 ANO	387792	406013	I/S	I/S	I/S	I/S	I/S	I/S	I/S	25.4	34.2	31.7	41.5	38.4	34.2	25.9	-	
RO26 ANO	389782	414241	51.5	38.6	29.3	19.3	26.8	33.9	34.6	32.3	37.7	41.4	47.5	46.5	36.6	31.1	-	
RO27 ANO	390710	414563	54.4	39.7	35.8	21.8	25.4	37.5	26.8	33.2	36.0	46.6	51.5	53.5	38.5	32.7	-	
RO28 ANO	392871	415127	35.5	30.1	23.8	13.8	14.3	21.9	19.8	19.5	24.1	27.9	36.1	33.9	25.1	21.3	-	
RO29 ANO	389326	411411	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	42.5	-	-	-	Triplicate Site with RO29ANO, RO30ANO and RO31ANO - Annual data provided for RO31ANO only
RO2A NO	388537	409942	I/S	I/S	I/S	I/S	I/S	I/S	I/S	I/S	27.1	30.3	36.4	32.7	31.6	21.7	-	
RO30 ANO	389326	411411	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	40.1	-	-	-	Triplicate Site with RO29ANO, RO30ANO and RO31ANO - Annual data provided for RO31ANO only
RO31 ANO	389326	411411	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	40.1	40.9	34.8	-	Triplicate Site with RO29ANO, RO30ANO and RO31ANO - Annual data provided for RO31ANO only
RO3A NO	388581	409797	24.4	23.6	18.4	11.5	12.9	15.0	15.4	15.6	20.5	20.2	23.6	24.5	18.8	16.0	-	
RO4A NO	387080	406278	38.2	31.3	23.4	13.8	16.2	21.1	18.8	22.0	27.8	29.6	35.7	35.6	26.1	22.2	-	
RO5A NO	386870	404044	30.4	27.3	18.9	10.4	11.9	13.4	12.8	13.5	17.9	21.2	28.5	26.5	19.4	16.5	-	

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RO6A NO	385413	408320	53.9	41.4	37.1	23.9	27.4	35.4	30.0	32.6	35.5	42.5	47.4	41.6	37.4	31.8	-	
RO7A NO	388603	411925	41.4	36.0	28.7	18.3	18.7	25.4	19.0	23.1	27.4	32.1	43.3	42.8	29.7	25.2	-	
RO8A NO	388932	412091	49.1	40.7	37.8	21.9	29.9	27.0	35.2	39.9	45.9	43.1	52.5	51.6	39.6	33.6	-	
RO9A NO	389057	412217	41.9	39.8	34.3	21.0	24.1	34.9	29.2	30.3	37.4	42.2	45.6	46.5	35.6	30.3	-	
SA13 NO	379613	399784	27.0	24.3	19.1	10.6	10.3	I/S	I/S	13.5	I/S	18.2	28.9	28.5	20.0	17.0	-	
SA14 NO	382833	401035	32.7	30.3	24.0	13.1	15.8	21.2	21.8	21.6	27.7	29.0	30.4	31.4	24.9	21.2	-	
SA16 NO	371187	404453	I/S	< 1.0	I/S	10.1	I/S	I/S	I/S	14.2	17.3	I/S	22.0	28.3	18.4	14.2	-	
SA17 NO	380742	400862	46.6	37.7	29.8	14.7	15.9	22.2	22.8	23.1	32.2	34.9	40.8	37.0	29.8	25.3	-	
SA01 NO	372767	394104	24.5	20.0	17.4	10.8	10.8	13.8	12.5	13.4	17.6	18.7	24.0	24.0	17.3	14.7	-	
SA20 NO	374811	400857	49.9	49.2	36.4	23.8	25.0	38.1	21.7	36.4	33.6	35.5	48.8	40.6	-	-	-	Triplicate Site with SA20NO, SA21NO and SA22NO - Annual data provided for SA22NO only
SA21 NO	374811	400857	51.1	52.3	37.4	23.1	25.8	39.8	23.7	36.1	34.0	39.0	43.8	44.1	-	-	-	Triplicate Site with SA20NO, SA21NO and SA22NO - Annual data provided for SA22NO only
SA22 NO	374811	400857	53.1	43.8	38.4	23.4	27.7	39.7	23.6	38.7	34.4	40.2	41.6	41.5	37.1	31.5	-	Triplicate Site with SA20NO, SA21NO and SA22NO - Annual data provided for SA22NO only
SA23 NO	377926	398727	26.4	24.9	20.5	14.8	13.0	17.7	15.7	18.8	22.0	24.0	30.3	27.7	-	-	-	Triplicate Site with SA23NO, SA24NO and SA29NO - Annual data provided for SA29NO only
SA24 NO	377926	398727	29.5	24.4	20.6	15.5	14.1	16.8	15.7	18.8	22.3	23.3	30.0	28.3	-	-	-	Triplicate Site with SA23NO, SA24NO and SA29NO - Annual data provided for SA29NO only
SA25 NO	381304	398014	33.6	27.5	24.6	16.0	14.9	20.8	17.1	23.2	25.9	25.9	32.5	37.0	24.9	21.2	-	
SA26 NO	380718	399597	34.8	33.8	27.5	16.0	15.6	27.0	22.2	26.2	31.8	30.5	39.5	33.0	28.2	23.9	-	
SA27 NO	383078	398741	47.0	41.2	31.5	15.7	19.8	27.0	25.7	30.5	34.2	34.0	38.5	I/S	31.4	26.7	-	
SA29 NO	377926	398727	28.3	25.8	21.1	14.6	14.3	17.6	15.2	18.8	23.2	22.3	31.4	28.7	21.6	18.3	-	Triplicate Site with SA23NO, SA24NO and SA29NO - Annual data provided for SA29NO only
SA02 NO	372140	394210	25.8	22.6	17.4	10.8	9.6	13.1	12.2	13.4	16.3	18.0	21.1	7.5	15.7	13.3	-	
SA31 NO	374025	401905	34.9	29.9	23.2	13.3	15.1	20.7	17.2	23.5	27.8	27.3	34.1	33.9	25.1	21.3	-	

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 (0.85)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
SA33 NO	372600	400721	36.4	36.7	25.5	15.6	16.2	20.0	20.8	22.1	26.9	28.4	36.1	32.6	26.4	22.5	-	
SA34 NO	375367	397800	49.3	45.7	36.7	19.2	24.0	32.3	31.7	32.2	36.5	32.4	43.0	45.8	35.7	30.4	-	
SA38 NO	377796	403065	30.3	26.7	22.9	14.2	15.7	21.0	17.4	21.3	28.6	25.5	I/S	30.1	23.1	19.6	-	
SA39 NO	383040	398563	47.8	41.9	33.8	20.5	24.1	34.9	26.6	36.1	40.5	41.4	44.3	37.4	35.8	30.4	-	
SA44 NO	380412	398439	46.1	35.0	29.8	13.4	17.5	23.6	21.0	24.3	31.1	34.3	43.9	38.7	29.9	25.4	-	
SA04 NO	377453	401830	31.1	24.8	21.8	12.1	13.6	20.3	14.8	20.0	22.4	I/S	32.3	29.7	22.1	18.8	-	
SA51 NO	375213	397661	36.1	35.1	29.8	19.2	18.7	29.5	20.7	28.1	29.8	32.4	39.2	34.2	29.4	25.0	-	
SA52 NO	375149	397587	32.2	31.3	26.8	15.6	16.4	24.8	16.9	24.3	25.8	28.6	36.6	28.7	25.7	21.8	-	
SA53 NO	374757	399891	42.4	41.5	26.9	14.0	15.7	20.7	23.5	22.6	28.5	30.9	35.9	31.8	27.9	23.7	-	
SA54 NO	374901	399981	35.6	42.6	23.6	12.1	12.0	I/S	18.1	17.9	23.2	25.6	30.9	28.8	24.6	20.9	-	
SA55 NO	372871	400734	42.5	39.3	27.9	15.1	18.0	I/S	23.6	24.2	30.3	29.2	27.8	33.4	28.3	24.1	-	
SA56 NO	368759	396027	18.4	16.3	12.5	8.7	8.1	9.4	7.7	8.9	11.9	12.3	20.9	19.8	-	-	-	Triplicate Site with SA56NO, SA57NO and SA58NO - Annual data provided for SA58NO only
SA57 NO	368759	396027	18.8	16.8	13.6	8.6	7.9	9.5	7.7	9.3	12.1	13.2	21.5	16.4	-	-	-	Triplicate Site with SA56NO, SA57NO and SA58NO - Annual data provided for SA58NO only
SA58 NO	368759	396027	18.5	17.9	14.3	8.6	7.6	9.7	8.0	9.0	12.3	11.7	20.0	20.5	13.0	11.1	-	Triplicate Site with SA56NO, SA57NO and SA58NO - Annual data provided for SA58NO only
SA59 NO	381822	397895	33.2	30.5	25.5	17.8	17.2	25.1	21.0	25.3	30.7	28.0	34.8	35.9	27.1	23.0	-	
SA60 NO	382445	397724	39.3	36.4	31.4	15.4	26.9	33.1	29.6	32.9	36.5	35.6	34.1	30.3	31.8	27.0	-	
SA61 NO	377269	400943	40.6	39.7	33.5	19.5	24.0	31.1	28.9	31.0	36.6	38.3	39.7	43.4	33.9	28.8	-	
SA62 NO	380768	399637	40.4	44.0	26.7	14.8	15.4	21.2	21.6	22.3	29.8	30.3	35.5	34.4	28.0	23.8	-	
SA63 NO	374673	399912	47.5	55.9	37.4	20.0	23.3	30.5	35.6	32.2	38.3	37.9	45.2	14.8	34.9	29.7	-	
SA64 NO	378804	399844	38.0	30.0	24.3	11.2	13.4	17.1	18.4	17.7	24.8	25.8	35.7	33.2	24.1	20.5	-	
SA65 NO	378584	399220	59.0	55.6	40.1	21.7	24.3	34.4	36.8	33.2	40.6	70.6	53.4	47.2	43.1	36.6	30.7	

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SA66 NO	375118	398502	27.3	28.7	I/S	I/S	19.7	29.0	16.3	27.9	27.1	29.7	37.8	37.4	28.1	23.9	-	
SA68 NO	373570	403096	50.5	46.5	37.6	24.5	29.0	39.3	31.5	38.9	41.6	41.4	54.2	50.2	40.4	34.4	-	
SA69 NO	379397	401370	58.6	49.9	42.8	24.8	31.1	42.0	37.1	37.0	43.7	46.1	49.5	45.7	42.4	36.0	28.7	
SA70 NO	381677	398832	37.3	I/S	23.2	14.0	I/S	22.9	25.8	27.9	34.0	31.7	38.7	30.2	28.6	24.3	-	
SA71 NO	381351	397185	39.9	36.7	28.4	15.7	18.7	26.8	21.6	26.7	30.0	33.1	39.9	34.9	29.4	25.0	-	
SA72 NO	377536	401804	50.4	46.2	41.2	26.6	30.5	47.2	43.0	39.6	47.4	44.7	52.8	46.6	43.0	36.6	32.0	
SA73 NO	374576	400611	52.5	45.5	35.7	24.5	I/S	39.9	32.6	40.3	42.3	42.3	46.9	48.3	41.0	34.8	-	
SA74 NO	376315	399249	50.3	47.6	34.8	17.0	20.1	29.3	26.8	29.2	35.1	36.9	45.8	40.1	34.4	29.3	-	
SA75 NO	379608	398539	38.8	35.3	27.6	18.4	17.4	25.6	22.1	24.7	30.6	28.1	33.3	37.0	28.2	24.0	-	
SA76 NO	380540	398422	49.4	41.2	28.8	15.3	17.4	25.5	23.6	25.3	32.9	44.0	42.3	56.2	33.5	28.5	-	
SA77 NO	381686	398504	37.8	34.5	26.3	14.6	18.0	23.9	18.0	24.6	29.8	29.4	35.1	35.1	27.3	23.2	-	
SA78 NO	381220	399530	54.0	50.7	39.3	24.8	27.3	45.3	35.2	41.0	47.1	46.1	54.2	45.9	42.6	36.2	33.3	
SA79 NO	382602	398519	48.7	43.7	31.7	13.8	16.1	28.3	25.5	30.0	35.7	36.1	41.5	34.6	32.1	27.3	-	
SA80 NO	375428	401417	37.4	35.6	27.1	14.9	18.1	21.7	27.1	22.6	31.6	30.9	33.1	32.5	27.7	23.6	-	
SA81 NO	382561	397722	55.5	48.4	36.3	21.0	27.6	36.9	39.1	38.4	46.5	43.3	51.0	47.9	41.0	34.8	-	
SA82 NO	375394	397816	52.8	52.0	40.5	27.4	30.4	43.9	41.6	41.1	50.9	48.0	44.7	48.1	43.5	36.9	31.2	
SA09 NO	374741	400937	31.9	27.5	19.6	11.6	12.1	16.5	12.9	I/S	20.4	22.2	29.0	30.2	21.3	18.1	-	
ST10 NO	392781	387271	20.3	14.5	12.7	7.4	7.7	8.0	9.8	9.3	11.8	13.9	19.0	18.1	12.7	10.8	-	
ST11 NO	391083	387938	37.1	31.1	14.3	15.3	17.7	24.1	21.7	23.2	23.1	27.4	37.2	37.6	25.8	21.9	-	
ST12 NO	385047	388339	45.7	41.2	33.6	16.3	18.8	26.0	29.2	29.6	33.8	33.6	34.1	34.4	31.4	26.7	-	
ST13 NO	384675	386295	16.3	18.5	14.3	7.0	6.4	9.2	9.3	10.2	13.9	14.6	20.8	23.7	13.7	11.6	-	

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ST14 NO	385047	388339	49.1	41.1	30.6	17.8	19.3	26.7	28.2	29.0	33.6	31.2	31.5	I/S	30.7	26.1	-	
ST15 NO	389886	388961	37.2	I/S	29.6	13.3	13.4	21.1	I/S	21.9	23.9	26.2	26.9	33.5	24.7	21.0	-	
ST16 NO	391569	391226	32.0	27.9	22.4	12.3	13.4	18.3	19.0	16.6	23.1	24.0	25.5	24.4	21.6	18.3	-	
ST17 NO	388442	390077	28.4	25.7	22.3	14.1	12.5	I/S	15.2	18.7	21.9	22.1	26.2	30.9	21.6	18.4	-	
ST18 NO	389272	390441	43.4	38.3	31.6	18.7	14.8	26.6	30.9	29.9	35.6	32.6	34.3	37.7	31.2	26.5	-	
ST19 NO	389479	393464	51.7	43.7	35.5	21.1	26.4	31.5	32.5	32.8	38.4	37.0	I/S	43.9	35.9	30.5	-	
ST1N O	389077	392012	25.5	17.4	18.2	10.4	9.6	13.1	12.4	14.1	18.1	18.8	26.5	27.3	17.6	15.0	-	
ST20 NO	386921	389529	45.5	42.0	37.6	26.5	27.2	28.7	33.4	33.0	36.5	38.6	29.4	39.1	34.8	29.6	-	
ST21 NO	388599	389416	29.5	22.4	18.3	10.2	10.0	13.4	12.8	14.0	17.1	19.6	I/S	30.0	17.9	15.2	-	
ST22 NO	391483	387635	25.7	20.8	22.0	14.2	14.3	20.7	13.2	19.3	20.0	19.8	26.6	26.5	-	-	-	Triplicate Site with ST22NO, ST23NO and ST24NO - Annual data provided for ST24NO only
ST23 NO	391483	387635	24.4	21.0	18.3	13.7	13.1	21.7	12.5	19.2	19.1	20.1	23.3	26.1	-	-	-	Triplicate Site with ST22NO, ST23NO and ST24NO - Annual data provided for ST24NO only
ST24 NO	391483	387635	20.1	19.3	22.4	12.8	13.5	19.3	13.0	18.6	18.8	21.6	26.2	25.9	19.6	16.7	-	Triplicate Site with ST22NO, ST23NO and ST24NO - Annual data provided for ST24NO only
ST25 NO	395770	388655	27.9	27.3	19.8	16.4	17.4	17.6	21.0	22.4	26.5	26.5	23.3	28.5	22.9	19.5	-	
ST26 NO	389396	387357	19.9	14.8	12.6	9.5	7.2	9.5	8.8	9.4	12.1	14.9	17.2	19.2	12.9	11.0	-	
ST27 NO	387091	391384	23.4	16.3	14.7	9.0	10.3	11.8	8.8	10.7	14.5	14.2	20.8	22.8	14.8	12.6	-	
ST28 NO	385700	386220	42.9	34.8	29.5	18.4	20.4	22.9	23.2	32.5	36.0	27.6	36.7	38.5	30.3	25.7	-	
ST29 NO	390088	388545	25.3	17.7	15.2	8.5	8.9	10.7	10.9	11.6	12.8	18.6	19.6	25.5	15.4	13.1	-	
ST2N O	385047	388339	48.4	36.2	30.5	16.2	19.7	27.1	29.3	28.8	33.0	32.7	31.8	37.7	31.0	26.3	-	
ST31 NO	3392441	391747	49.9	43.3	34.0	18.5	22.4	33.3	31.1	32.9	I/S	41.6	40.8	41.2	35.4	30.1	-	
ST32 NO	389480	390957	43.1	37.4	31.1	17.1	18.5	27.5	20.6	28.1	28.3	29.9	33.0	35.2	29.2	24.8	-	
ST33 NO	390416	390087	38.1	36.3	28.2	18.7	19.2	28.0	27.0	29.0	32.7	37.0	32.3	37.1	30.3	25.8	-	

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ST34 NO	388304	390351	44.5	42.7	37.1	21.1	23.3	34.5	25.3	33.6	35.6	37.1	I/S	40.0	34.1	29.0	-	
ST35 NO	395020	385360	25.5	21.1	19.8	13.3	15.9	21.1	21.0	23.8	25.9	27.8	25.1	22.2	21.9	18.6	-	
ST3N O	388551	391846	37.4	31.0	22.9	10.9	12.0	17.0	16.1	18.4	20.9	23.1	27.8	30.2	22.3	19.0	-	
ST4N O	396469	390800	17.1	13.9	10.7	7.4	7.4	8.4	8.6	9.2	11.5	12.1	13.4	15.7	11.3	9.6	-	
ST5N O	396853	382768	12.9	7.8	6.7	4.3	3.8	6.0	5.8	6.8	7.2	7.4	I/S	12.2	7.4	6.3	-	
ST6N O	396853	382768	20.4	16.9	14.5	8.6	7.7	10.1	10.3	10.9	13.5	16.1	17.1	21.4	14.0	11.9	-	
ST7N O	392063	386972	47.7	I/S	33.6	15.4	22.8	33.2	25.9	I/S	28.1	30.3	38.9	33.8	31.0	26.3	-	
ST8N O	392017	387043	I/S	18.6	16.8	10.6	10.9	12.9	14.2	14.5	17.7	20.0	24.2	20.5	16.4	14.0	-	
ST9N O	392743	385681	17.8	14.1	11.3	7.0	6.3	6.6	8.3	8.5	11.1	11.8	16.2	17.8	11.4	9.7	-	
TA10 NO	392516	396748	45.8	41.4	33.9	15.0	22.3	28.9	29.4	30.1	36.9	36.5	41.6	35.6	33.1	28.1	-	
TA11 NO	400390	396025	61.6	55.5	47.7	24.7	34.3	48.1	40.6	49.6	48.7	50.4	52.4	49.5	46.9	39.9	37.1	
TA12 NO	393451	394330	23.2	18.7	I/S	I/S	I/S	I/S	I/S	I/S	I/S	I/S	I/S	I/S	-	-	-	
TA13 NO	392586	398431	43.7	41.0	35.7	22.1	28.5	33.1	< 1.0	30.1	42.8	38.1	46.7	33.0	35.9	30.5	-	
TA14 NO	393710	398790	47.2	39.8	32.3	21.9	23.3	29.9	26.6	31.9	36.3	35.7	45.4	37.9	34.0	28.9	-	
TA15 NO	395371	398736	33.8	29.1	22.9	14.6	16.9	19.8	21.0	22.1	26.2	25.4	32.2	28.0	24.3	20.7	-	
TA16 NO	391435	397970	53.4	44.4	35.3	18.8	25.5	36.5	31.1	31.7	39.6	39.7	43.7	35.9	36.3	30.9	-	
TA17 NO	389106	398242	46.6	37.9	29.3	16.2	19.0	23.4	25.7	24.5	33.2	39.1	43.6	37.5	31.3	26.6	-	
TA18 NO	391970	395521	53.5	45.3	40.3	25.8	23.2	38.8	32.3	42.1	40.7	41.4	43.3	26.1	37.7	32.1	-	
TA19 NO	392477	395505	41.3	31.3	32.6	20.9	23.9	30.0	25.6	36.2	36.3	33.0	37.1	34.2	31.9	27.1	-	
TA1N O	394050	397190	37.4	30.7	22.3	13.6	16.3	20.3	19.0	21.5	25.3	27.3	36.5	31.4	25.1	21.4	-	
TA20 NO	394610	395102	45.9	41.3	32.1	15.8	24.0	28.9	33.2	31.3	36.0	36.3	39.2	35.9	33.3	28.3	-	

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 (0.85)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
TA21 NO	400423	395965	55.2	50.3	44.4	26.1	34.8	45.9	44.2	45.7	50.0	46.6	49.3	25.8	43.2	36.7	33.1	
TA22 NO	393249	399159	29.0	21.7	18.9	10.5	12.4	13.0	14.5	14.1	20.3	20.7	27.1	21.9	18.7	15.9	-	
TA23 NO	393620	398588	28.1	29.7	18.3	12.0	13.6	15.1	13.9	16.8	21.6	21.1	28.7	26.1	20.4	17.4	-	
TA24 NO	390475	395621	37.1	32.4	30.2	20.5	22.8	26.9	22.4	32.0	30.8	29.9	36.2	27.4	29.1	24.7	-	
TA25 NO	396950	402329	70.2	25.0	22.4	11.9	14.5	21.6	17.7	21.0	27.2	27.0	30.4	20.9	25.8	21.9	-	
TA26 NO	394948	401815	I/S	29.3	23.1	11.7	13.8	20.6	I/S	40.1	25.5	28.5	36.9	I/S	25.5	21.7	-	
TA27 NO	396177	398218	34.7	27.0	25.2	14.6	15.5	22.2	19.7	23.5	25.8	26.4	31.5	26.2	24.4	20.7	-	
TA28 NO	393050	401038	47.2	36.5	31.5	18.8	23.6	31.9	28.7	28.5	32.4	36.3	38.6	38.3	32.7	27.8	-	
TA29 NO	393370	399494	29.6	29.2	20.2	11.2	12.5	18.4	17.0	18.8	22.9	23.6	30.1	25.9	21.6	18.4	-	
TA2N O	394788	394933	33.9	20.6	20.1	11.4	14.9	17.5	17.1	20.0	22.2	23.2	31.5	26.5	21.6	18.3	-	
TA30 NO	393419	399691	45.5	37.0	31.5	17.2	23.5	29.3	27.6	29.8	34.3	35.6	43.8	30.1	32.1	27.3	-	
TA31 NO	396899	402449	28.6	21.8	17.9	10.5	14.0	14.9	14.7	15.8	20.3	21.0	27.4	17.1	18.7	15.9	-	
TA32 NO	396982	402437	32.0	18.2	20.3	12.7	14.8	20.4	17.3	21.5	23.5	25.5	31.7	23.2	21.8	18.5	-	
TA33 NO	397010	402560	32.6	24.9	19.6	11.8	14.0	16.6	17.7	19.1	23.0	18.2	31.0	28.6	21.4	18.2	-	
TA34 NO	397060	402581	33.8	25.4	21.0	10.2	14.6	18.6	17.8	18.6	23.9	22.2	28.0	29.8	22.0	18.7	-	
TA35 NO	397080	402540	43.3	36.2	32.0	17.4	24.9	28.7	26.3	34.1	35.2	41.6	41.7	29.1	32.5	27.7	-	
TA36 NO	397060	402387	34.4	25.1	18.3	9.6	11.3	13.2	16.1	13.8	20.0	20.5	28.7	16.1	18.9	16.1	-	
TA37 NO	396728	402073	39.1	34.7	27.2	I/S	22.2	32.2	22.3	26.6	33.0	32.6	40.5	33.2	31.2	26.6	-	
TA38 NO	394006	399392	41.3	34.1	26.3	12.3	12.6	18.0	21.6	20.7	27.9	30.9	38.5	26.0	25.9	22.0	-	
TA39 NO	394114	399366	47.1	41.6	25.1	13.8	17.3	15.4	23.0	22.1	30.6	33.6	40.2	35.8	28.8	24.5	-	
TA3N O	390961	395417	31.0	27.6	24.2	14.4	14.2	19.4	15.1	23.8	24.2	26.5	31.4	25.1	23.1	19.6	-	

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 (0.85)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
TA40 NO	394066	399314	32.6	36.1	25.3	15.1	15.0	19.1	21.5	23.0	29.4	30.0	37.5	30.1	26.2	22.3	-	
TA41 NO	394118	399259	43.8	39.8	27.5	15.2	18.9	21.5	26.5	23.6	32.6	33.2	39.8	35.3	29.8	25.3	-	
TA42 NO	394494	399010	41.3	31.5	24.9	12.3	17.1	18.6	21.3	22.5	28.1	29.8	37.9	15.2	25.0	21.3	-	
TA43 NO	394214	398933	53.3	37.5	33.8	24.4	31.2	33.8	35.4	38.6	42.4	42.3	44.0	23.6	36.7	31.2	-	
TA44 NO	397418	394398	23.2	20.0	12.9	7.1	8.3	10.0	11.2	10.3	13.9	15.5	20.2	18.2	14.2	12.1	-	
TA45 NO	399719	395805	46.3	< 1.0	44.7	30.5	35.9	44.8	41.2	54.6	51.2	47.3	43.3	39.3	-	-	-	Triplicate Site with TA45NO, TA46NO and TA47NO - Annual data provided for TA47NO only
TA46 NO	399719	395805	44.3	44.8	81.9	32.6	38.3	43.0	33.4	41.9	51.4	45.4	43.2	6.4	-	-	-	Triplicate Site with TA45NO, TA46NO and TA47NO - Annual data provided for TA47NO only
TA47 NO	399719	395805	54.4	46.3	41.1	28.8	39.3	48.6	40.0	51.7	50.5	47.0	45.8	43.8	43.6	37.0	-	Triplicate Site with TA45NO, TA46NO and TA47NO - Annual data provided for TA47NO only
TA48 NO	392699	395733	40.6	30.2	28.4	14.1	18.2	20.5	23.9	24.3	34.0	33.4	38.6	35.7	28.5	24.2	-	
TA49 NO	393731	398770	40.6	43.5	30.5	17.1	23.2	24.6	31.0	28.2	37.2	35.2	40.5	34.5	32.2	27.3	-	
TA50 NO	393498	398704	55.4	45.9	37.8	23.7	29.8	35.7	32.1	40.8	45.9	45.8	49.6	32.1	39.6	33.6	-	
TA51 NO	393314	398624	46.4	43.3	35.1	21.1	24.3	27.2	33.4	32.7	41.4	36.5	45.2	32.8	35.0	29.7	-	
TA52 NO	393509	398737	40.9	47.3	38.1	21.9	28.0	31.4	36.4	38.1	44.0	I/S	55.1	45.0	38.7	32.9	-	
TA53 NO	393133	398536	45.9	38.6	34.9	20.7	25.8	31.9	25.2	36.8	35.6	33.5	44.3	26.8	33.3	28.3	-	
TA54 NO	392958	398474	49.9	42.6	39.1	25.6	33.6	44.6	36.5	49.0	46.7	44.1	54.7	50.5	43.1	36.6	33.9	
TA55 NO	392743	398465	69.8	56.3	47.1	26.5	37.1	43.0	35.4	49.9	53.1	45.5	62.5	49.7	48.0	**40.8**	38.8	
TA56 NO	392490	398368	52.0	46.1	36.1	24.3	I/S	34.1	30.5	I/S	43.2	39.6	45.4	34.6	38.6	32.8	-	
TA57 NO	392844	398544	53.9	44.3	38.0	23.5	29.0	39.1	45.2	73.6	41.6	37.0	51.3	43.1	43.3	36.8	35.4	
TA58 NO	393080	398620	42.9	35.9	27.7	16.8	26.3	21.9	31.2	30.8	40.5	34.5	38.5	32.7	31.6	26.9	-	
TA59 NO	395652	399140	29.5	21.6	16.0	9.3	9.5	11.3	13.2	13.1	17.1	19.9	26.5	25.2	17.7	15.0	-	
TA5NO	400507	396518	16.3	13.9	11.3	6.9	6.7	9.8	8.6	9.4	11.5	13.8	18.3	14.0	11.7	10.0	-	

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TA60 NO	395747	399112	36.4	28.3	21.4	13.6	15.7	18.9	19.1	18.9	24.5	24.4	33.8	29.5	23.7	20.2	-	
TA61 NO	395682	399171	35.1	27.3	20.3	11.5	12.8	16.5	17.7	16.9	23.1	24.5	27.7	24.0	21.5	18.2	-	
TA62 NO	396576	399240	34.2	26.9	18.2	9.2	11.0	14.4	16.3	14.7	21.3	22.8	29.2	23.8	20.2	17.1	-	
TA9NO	393451	394330	23.2	15.3	I/S	I/S	I/S	I/S	I/S	I/S	I/S	I/S	I/S	I/S	-	-	-	
TR13 NO	381221	396441	37.7		26.4	17.1	15.7	26.8	20.0	24.6	28.2	28.2	40.8	34.3	27.3	23.2	-	
TR15 NO	379089	393282	24.9		21.3	16.1	16.6	24.3	14.9	27.3	23.8	31.5	32.0	35.1	24.3	20.7	-	
TR16 ANO	377418	395689	30.3		22.8	15.4	17.0	30.4	18.8	27.9	27.6	16.6	34.3	36.5	-	-	-	Duplicate Site with TR16ANO and TR16NO - Annual data provided for TR16NO only
TR16 NO	377418	395689	31.1		25.6	15.6	16.7	29.8	17.7	26.6	29.9	32.3	35.1	35.6	26.1	22.2	-	Duplicate Site with TR16ANO and TR16NO - Annual data provided for TR16NO only
TR18 NO	378822	389010	18.9		12.7	8.4	8.1	12.5	I/S	I/S	15.2	32.7	21.9	23.5	17.1	14.5	-	
TR19 ANO	378783	394728	20.9		9.1	8.6	9.5	12.0	9.9	I/S	16.6	15.5	24.2	25.4	-	-	-	Triplicate Site with TR19ANO, TR19BNO and TR19NO - Annual data provided for TR19NO only
TR19 BNO	378783	394728	19.4		11.6	10.9	9.3	11.7	11.0	I/S	16.8	28.7	24.3	24.9	-	-	-	Triplicate Site with TR19ANO, TR19BNO and TR19NO - Annual data provided for TR19NO only
TR19 NO	378783	394728	22.1		11.3	11.4	9.4	11.8	9.9	< 1.0	15.9	21.4	24.5	21.9	16.0	13.6	-	Triplicate Site with TR19ANO, TR19BNO and TR19NO - Annual data provided for TR19NO only
TR20 ANO	379411	394014	34.2		26.2	13.7	13.6	25.0	19.3	23.3	I/S	28.3	34.8	35.1	-	-	-	Triplicate Site with TR20ANO, TR20BNO and TR20NO - Annual data provided for TR20NO only
TR20 BNO	379411	394014	32.2		25.3	12.7	15.9	23.6	18.9	23.9	25.2	24.3	33.5	35.4	-	-	-	Triplicate Site with TR20ANO, TR20BNO and TR20NO - Annual data provided for TR20NO only
TR20 NO	379411	394014	33.0		22.1	12.9	15.0	25.6	18.9	23.2	24.3	30.6	34.7	33.8	24.9	21.2	-	Triplicate Site with TR20ANO, TR20BNO and TR20NO - Annual data provided for TR20NO only
TR21 NO	379619	396371	29.2		20.0	12.2	12.2	19.7	13.7	18.9	21.3	33.0	31.8	27.5	21.8	18.5	-	
TR22 NO	377061	390086	35.7		27.1	17.7	20.9	16.9	20.0	28.1	27.8	34.0	I/S	38.6	26.7	22.7	-	
TR23 ANO	376395	396360	36.0		31.1	19.7	19.7	33.7	26.7	28.8	33.9	20.4	36.5	38.3	29.5	25.1	-	
TR23 NO	376438	396383	I/S		28.3	15.7	I/S	28.1	23.1	26.2	29.0	34.9	32.2	47.8	29.5	25.1	-	
TR24 NO	379263	385812	23.5		19.0	11.1	11.8	18.4	12.2	16.4	I/S	I/S	25.0	27.9	18.4	15.6	-	

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TR25 ANO	373755	394477	15.6		I/S	8.8	14.0	8.6	I/S	12.3	12.2	I/S	15.3	17.2	-	-	-	Triplicate Site with TR25ANO, TR25BNO and TR25NO - Annual data provided for TR25NO only
TR25 BNO	373755	394477	14.4		I/S	8.7	6.5	8.4	I/S	12.2	12.8	38.1	16.5	18.9	-	-	-	Triplicate Site with TR25ANO, TR25BNO and TR25NO - Annual data provided for TR25NO only
TR25 NO	373755	394477	15.0		I/S	9.0	6.2	9.2	I/S	12.3	12.4	I/S	15.0	18.2	15.3	13.0	-	Triplicate Site with TR25ANO, TR25BNO and TR25NO - Annual data provided for TR25NO only
TR26 ANO	379272	393666	64.0		32.4	16.4	22.3	40.0	24.5	42.9	33.8	22.0	45.7	40.8	-	-	-	Duplicate Site with TR26ANO and TR26NO - Annual data provided for TR26NO only
TR26 NO	379272	393666	48.3		37.2	18.6	21.9	41.7	26.0	28.8	32.8	I/S	44.5	45.4	34.2	29.1	-	Duplicate Site with TR26ANO and TR26NO - Annual data provided for TR26NO only
TR27 NO	371419	390760	23.5		I/S	I/S	22.6	18.0	14.6	16.9	17.5	29.1	27.3	27.8	21.9	18.6	-	
TR28 NO	376851	387792	30.9		25.3	11.8	12.9	19.8	17.2	22.9	93.3	< 1.0	28.5	30.9	29.4	24.9	-	
TR5N O	379052	392043	24.6		18.3	10.6	10.3	16.8	12.4	20.9	22.3	24.7	22.8	27.5	19.2	16.3	-	
TR9N O	380933	395889	28.4		20.0	13.1	11.2	19.4	14.5	17.1	21.0	14.1	26.7	28.0	19.4	16.5	-	
W193 NO	363885	403129	27.6	34.3	33.9	20.8	22.0	29.1	26.2	26.5	34.9	36.2	41.3	35.4	30.7	26.1	-	
W194 NO	371037	402472	25.4	20.3	18.0	9.8	10.2	14.1	11.7	14.6	17.0	19.2	26.3	19.7	17.2	14.6	-	
W195 NO	366254	403598	22.7	18.6	17.0	9.8	10.1	15.0	9.8	14.7	17.7	17.6	21.1	24.5	16.6	14.1	-	
W196 NO	365850	403263	25.8	21.8	17.1	9.1	10.4	15.4	12.7	14.2	20.6	22.0	27.2	24.0	18.4	15.6	-	
W197 NO	361411	408031	26.3	24.2	17.4	8.9	10.1	14.2	13.5	14.2	17.3	21.2	28.0	19.3	17.9	15.2	-	
W198 NO	360370	407235	34.0	27.4	25.2	14.3	18.3	20.3	19.0	20.7	28.2	27.9	30.6	18.1	23.7	20.1	-	
W199 NO	360501	397988	33.6	26.9	26.4	14.6	18.2	23.5	16.9	24.6	26.2	27.3	31.7	30.5	25.0	21.3	-	
W200 NO	363262	399815	I/S	48.7	17.7	12.9	12.7	17.8	14.1	17.7	21.6	22.3	31.6	24.7	22.0	18.7	-	
W201 NO	356493	406759	32.6	23.9	18.7	13.1	13.0	17.8	13.5	17.3	21.4	22.7	31.1	37.7	21.9	18.6	-	
W202 NO	358222	407262	28.0	20.9	18.0	9.9	9.5	12.7	12.3	13.3	17.9	19.4	27.6	23.0	17.7	15.1	-	
W203 NO	357569	408645	20.2	19.1	16.3	11.6	11.0	14.0	10.5	15.5	17.2	19.0	24.0	22.7	16.8	14.2	-	
W204 NO	358161	399510	I/S	25.5	20.9	12.0	12.5	16.9	13.5	15.9	21.7	23.3	28.5	20.8	19.2	16.3	-	

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W205 NO	362151	396604	33.6	29.3	27.6	19.1	17.8	24.8	17.9	26.2	27.6	26.9	35.1	30.6	26.4	22.4	-	
W206 NO	362162	396325	27.0	24.6	23.7	15.6	17.4	24.0	16.4	24.0	25.6	26.7	29.2	33.5	24.0	20.4	-	
W207 NO	362171	396329	33.2	33.2	28.1	18.2	22.0	30.1	24.1	28.8	33.1	31.8	37.1	29.5	29.1	24.7	-	
W208 NO	365687	400238	I/S	I/S	I/S	I/S	I/S	I/S	I/S	I/S	27.4	31.8	36.7	37.6	-	-	-	Triplicate Site with W208NO, W209NO and W210NO - Annual data provided for W210NO only
W209 NO	365687	400238	I/S	I/S	I/S	I/S	I/S	I/S	I/S	I/S	27.7	29.3	35.6	35.4	-	-	-	Triplicate Site with W208NO, W209NO and W210NO - Annual data provided for W210NO only
W210 NO	365687	400238	I/S	I/S	I/S	I/S	I/S	I/S	I/S	I/S	27.5	30.3	36.4	25.4	31.8	21.8	-	Triplicate Site with W208NO, W209NO and W210NO - Annual data provided for W210NO only
W211 NO	372302	401593	I/S	16.5	18.2	10.4	10.0	13.0	9.4	13.2	17.2	17.3	23.6	22.6	15.6	13.2	-	
W212 NO	356827	402135	I/S	28.5	28.6	16.4	18.1	31.7	17.8	29.6	30.7	27.7	36.4	31.9	27.0	23.0	-	
WI11 4NO	365115	400259	45.2	40.7	35.6	21.5	29.7	34.2	32.7	30.5	38.9	39.4	40.7	37.8	35.6	30.2	-	
WI11 5NO	353845	405360	26.1	21.2	15.2	17.2	14.6	24.1	11.2	27.0	24.4	21.9	28.9	16.3	20.7	17.6	-	
WI11 6NO	365864	401720	27.0	22.3	20.4	9.7	9.0	12.2	11.0	11.8	17.6	18.6	29.5	17.3	17.2	14.6	-	
WI12 1NO	357088	405158	39.0	31.4	32.2	21.5	21.5	33.5	27.2	33.5	38.0	36.1	39.1	44.6	33.1	28.2	-	
WI12 2NO	356883	405239	42.1	36.0	32.3	19.7	22.4	34.5	24.3	30.8	I/S	34.8	40.4	45.2	33.0	28.0	-	
WI12 4NO	357310	403672	30.8	26.3	23.7	14.4	12.9	18.3	14.3	17.4	22.3	21.4	29.1	15.6	20.5	17.5	-	
WI12 5NO	357645	404259	I/S	31.5	29.3	19.4	19.6	27.5	18.4	I/S	28.2	25.7	28.0	34.4	26.2	22.3	-	
WI12 6NO	355819	402194	18.4	21.8	17.4	9.3	13.7	11.4	10.0	11.9	16.4	15.2	24.0	17.0	15.5	13.2	-	
WI12 7NO	355484	403854	33.7	27.2	27.2	16.3	18.0	27.1	20.3	I/S	32.2	28.8	35.1	31.4	27.0	23.0	-	
WI12 9NO	356848	402906	52.6	45.5	44.7	25.4	28.3	38.9	31.9	I/S	46.6	44.2	48.1	44.6	41.0	34.8	-	
WI13 0NO	356354	403838	32.8	24.5	24.3	15.8	14.5	20.6	16.8	21.1	25.5	26.0	31.9	27.0	23.4	19.9	-	
WI13 1NO	356667	404065	24.5	30.5	27.8	15.7	14.3	19.9	17.8	19.6	25.3	26.3	27.8	20.2	22.5	19.1	-	
WI13 2NO	356869	404808	33.7	28.6	26.8	13.5	13.7	20.5	14.8	20.5	25.8	25.9	35.3	34.5	24.5	20.8	-	

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WI13 3NO	356748	404786	33.9	33.1	31.1	15.7	14.0	23.3	18.4	25.2	31.1	29.9	38.6	33.1	27.3	23.2	-	
WI13 4NO	356428	404722	29.6	27.1	23.5	13.5	12.4	19.9	14.7	20.0	23.2	26.0	29.5	30.4	22.5	19.1	-	
WI13 5NO	354614	404685	44.8	41.9	35.9	18.2	I/S	30.6	I/S	30.8	39.4	36.8	42.4	I/S	35.6	30.3	-	
WI13 6NO	354057	404824	40.0	35.8	29.4	16.8	16.5	23.2	23.8	23.9	31.2	29.1	33.7	29.1	27.7	23.6	-	
WI13 7NO	353844	404922	37.2	35.4	34.7	22.3	18.8	30.8	22.3	33.3	34.5	30.1	38.5	34.1	31.0	26.4	-	
WI13 8NO	355321	404017	21.9	23.3	18.6	12.6	9.1	15.9	12.7	16.3	20.1	22.6	27.0	22.9	18.6	15.8	-	
WI13 9NO	355638	404023	31.1	27.1	24.0	12.7	14.5	20.0	17.0	19.2	24.1	22.7	28.4	21.0	21.8	18.5	-	
WI14 0NO	355816	404062	29.7	26.7	22.4	12.8	14.7	19.2	16.2	19.3	25.5	26.8	31.5	41.9	23.9	20.3	-	
WI14 1NO	356469	404550	31.8	29.0	21.8	12.0	12.2	19.9	16.6	21.7	24.8	24.5	34.8	26.7	23.0	19.5	-	
WI14 2NO	360528	403020	38.6	35.1	27.0	14.7	15.8	21.4	20.8	21.3	28.3	27.2	32.8	32.8	26.3	22.4	-	
WI14 3NO	360321	402935	26.3	21.2	19.5	12.0	10.8	16.6	13.2	17.0	20.6	21.2	27.5	28.6	19.5	16.6	-	
WI14 4NO	360643	402297	43.0	32.7	28.4	16.4	16.3	22.4	21.4	24.0	29.7	31.5	35.4	34.8	28.0	23.8	-	
WI14 5NO	360515	402212	38.6	32.1	27.7	15.1	17.2	22.6	22.1	24.1	29.5	31.9	36.2	36.2	27.8	23.6	-	
WI14 6NO	360306	402279	29.1	23.9	20.7	12.0	11.7	18.3	13.1	18.6	21.8	21.8	19.1	30.3	20.0	17.0	-	
WI14 7NO	360437	405089	< 1.0	65.1	25.8	14.6	17.9	22.5	20.1	23.2	29.8	27.2	31.5	26.8	27.7	23.5	-	
WI14 8NO	361247	404576	27.5	28.9	26.5	16.3	16.3	21.1	18.4	22.4	27.9	28.7	33.9	30.1	24.8	21.1	-	
WI14 9NO	363081	403512	42.8	30.5	29.4	19.5	20.0	26.8	24.6	26.2	34.3	35.4	I/S	I/S	29.0	24.6	-	
WI14 NO	366880	403255	36.7	35.3	32.1	21.7	20.2	27.7	23.4	27.0	33.3	31.3	38.0	36.0	30.2	25.7	-	
WI15 0NO	361579	404298	46.3	37.9	33.8	25.7	28.0	38.7	29.2	38.2	43.2	40.1	45.0	41.4	37.3	31.7	-	
WI15 1NO	361501	404216	31.3	26.4	24.0	13.2	12.0	18.4	12.5	21.0	22.6	23.8	32.5	32.6	22.5	19.1	-	
WI15 2NO	364021	402391	27.8	22.4	18.2	13.6	12.1	18.5	10.7	17.6	21.1	19.8	28.5	26.7	19.8	16.8	-	

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WI15 3NO	364953	402783	I/S	21.2	19.3	11.2	11.9	16.5	9.4	16.8	19.4	21.8	29.1	27.3	18.5	15.8	-	
WI15 4NO	365054	403019	26.1	18.4	17.5	10.8	10.9	15.4	13.4	15.3	19.2	20.2	28.3	8.1	17.0	14.4	-	
WI15 5NO	366233	403024	29.6	24.0	20.3	12.8	14.6	16.8	15.3	18.6	25.2	21.8	28.5	27.7	21.3	18.1	-	
WI15 6NO	366320	402136	30.0	26.4	23.2	14.2	7.8	20.5	16.7	23.9	25.0	23.9	33.2	30.8	23.0	19.5	-	
WI15 7NO	366458	402462	30.4	24.5	20.5	14.1	15.4	18.8	15.7	15.5	21.9	I/S	28.2	22.0	20.6	17.5	-	
WI15 8NO	365615	401368	38.0	33.3	24.9	14.5	16.2	21.8	14.8	15.1	26.1	26.9	35.4	40.0	25.6	21.7	-	
WI15 9NO	368024	403514	30.4	24.0	23.9	13.7	15.0	21.3	17.2	22.7	26.4	27.3	34.0	26.9	23.6	20.0	-	
WI16 0NO	368671	402250	36.2	33.9	29.0	18.0	22.0	27.7	23.6	26.6	31.3	33.4	I/S	28.3	28.2	24.0	-	
WI16 1NO	369635	402019	35.2	31.3	I/S	15.5	15.6	20.8	16.1	22.2	29.2	27.7	35.1	26.3	25.0	21.3	-	
WI16 2NO	370534	401953	32.8	29.6	26.1	17.6	17.9	23.8	19.3	25.4	30.8	27.2	34.3	27.7	26.0	22.1	-	
WI16 3NO	371234	401895	42.7	I/S	24.0	17.3	20.3	28.2	29.6	27.9	36.4	35.1	37.5	31.0	30.0	25.5	-	
WI16 4NO	371981	401209	36.2	30.7	24.4	13.0	13.8	19.2	17.5	20.2	25.5	26.0	32.3	14.6	22.8	19.4	-	
WI16 5NO	371039	400996	34.7	28.8	25.7	16.6	15.1	20.5	17.0	21.2	26.4	24.8	31.9	26.2	24.1	20.5	-	
WI16 6NO	368414	399638	22.8	< 1.0	18.7	12.5	13.1	15.6	12.7	16.6	19.6	20.3	26.9	22.3	18.3	15.5	-	
WI16 7NO	363544	397933	31.5	30.2	23.9	13.4	14.0	18.1	18.1	18.2	25.3	24.9	29.6	16.3	22.0	18.7	-	
WI16 8NO	362463	397005	45.4	41.1	29.3	15.1	16.9	24.0	21.7	23.6	31.8	32.9	40.3	28.3	29.2	24.8	-	
WI16 9NO	362557	396906	37.8	33.5	28.5	19.3	20.3	24.3	25.4	26.3	32.7	34.0	33.1	22.4	28.1	23.9	-	
WI17 0NO	362236	396675	32.3	25.1	27.8	15.1	17.5	24.3	21.9	22.5	27.7	29.6	28.7	29.7	25.2	21.4	-	
WI17 1NO	357095	400717	38.4	31.4	29.9	18.2	18.7	24.9	21.3	26.0	32.4	30.2	36.1	30.9	28.2	24.0	-	
WI17 2NO	356881	401314	39.8	34.4	27.0	14.5	16.3	24.6	19.1	27.0	29.6	28.6	34.2	15.7	25.9	22.0	-	
WI17 3NO	357983	405377	43.6	36.5	34.1	18.0	19.7	29.8	26.5	32.0	36.1	34.4	40.2	24.0	31.2	26.6	-	

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WI17 4NO	358294	405137	44.0	38.2	31.3	18.6	21.9	26.9	28.5	28.6	35.5	39.9	34.0	37.4	32.1	27.3	-	
WI17 5NO	358537	405774	35.5	31.3	25.8	13.2	12.4	19.3	17.3	20.6	26.1	19.8	30.5	33.3	23.8	20.2	-	
WI17 6NO	359227	405480	26.6	38.1	27.2	15.5	15.5	23.8	22.8	23.5	32.5	31.2	32.4	20.6	25.8	21.9	-	
WI17 7NO	356230	410105	31.5	28.2	22.7	12.5	14.5	20.3	18.9	25.7	26.9	27.1	33.3	28.3	24.2	20.5	-	
WI17 8NO	356021	410128	47.3	43.9	34.8	19.0	23.6	35.2	32.3	38.1	39.8	I/S	42.5	36.2	35.7	30.3	-	
WI17 9NO	354900	410475	27.6	27.5	19.7	11.3	12.1	16.4	14.8	18.8	21.8	22.5	30.4	28.2	20.9	17.8	-	
WI18 0NO	362105	396491	69.7	60.1	49.2	27.1	33.1	50.3	45.9	48.6	49.3	52.9	52.8	52.5	49.3	**41.9**	**41.9**	*Predicted concentration at Receptor above AQS objective.*
WI18 1NO	354819	406235	35.5	30.4	27.5	19.0	18.1	26.8	19.4	26.7	28.9	31.4	36.0	12.5	26.0	22.1	-	
WI18 2NO	358756	406175	34.8	29.3	24.6	15.4	19.2	23.5	22.0	22.7	28.4	27.5	29.3	I/S	25.2	21.4	-	
WI18 3NO	358595	405297	45.6	37.6	31.7	20.2	21.4	28.8	30.2	29.5	35.2	35.3	38.8	28.2	31.9	27.1	-	
WI18 4NO	358013	405654	30.8	28.4	26.6	14.5	16.1	23.2	18.1	27.0	29.4	32.6	36.7	34.2	26.5	22.5	-	
WI18 5NO	358054	405613	38.5	29.3	27.4	16.3	I/S	23.6	19.2	26.5	31.2	28.7	37.6	29.2	28.0	23.8	-	
WI18 6NO	358070	405587	44.6	36.5	34.2	21.5	23.6	33.2	25.9	37.3	40.6	38.4	50.2	62.6	37.4	31.8	-	
WI18 7NO	360470	402400	45.4	36.2	31.6	22.2	25.0	32.5	26.2	30.3	33.5	34.5	42.3	34.5	32.9	27.9	-	
WI18 8NO	362111	396526	47.3	I/S	33.4	19.1	25.5	31.7	34.2	29.9	35.7	38.5	34.0	31.8	32.8	27.9	-	
WI18 9NO	362095	396547	37.4	34.5	26.1	16.6	18.6	26.7	17.3	28.1	26.3	27.2	35.2	16.6	25.9	22.0	-	
WI19 0NO	358611	405994	35.1	33.7	29.3	17.1	15.9	24.4	18.9	24.1	29.3	I/S	35.7	25.3	26.3	22.3	-	
WI19 2NO	356771	403124	34.9	26.6	27.1	16.4	15.7	25.4	14.9	24.6	26.0	25.7	36.3	22.5	24.7	21.0	-	
WI23 NO	361835	404090	36.7	26.5	29.2	23.2	23.1	28.5	24.4	27.5	33.4	34.0	37.6	41.5	30.5	25.9	-	
WI24 NO	358341	405539	I/S	32.8	26.8	I/S	12.6	17.5	16.3	21.4	27.6	27.3	32.1	22.1	23.7	20.1	-	
WI28 NO	366424	399894	40.9	I/S	29.5	17.9	20.4	28.7	27.7	I/S	34.0	33.8	37.2	32.8	30.3	25.7	-	

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WI30 NO	363833	402028	30.7	25.6	24.9	14.5	15.9	21.3	18.0	21.4	26.7	26.2	33.1	31.6	24.2	20.5	-	
WI33 NO	359723	405537	47.2	37.7	34.5	23.5	24.2	32.0	22.0	35.4	37.4	35.7	44.6	30.3	33.7	28.7	-	
WI35 NO	357132	398670	46.0	41.3	31.7	16.1	19.2	23.4	25.8	25.5	34.6	34.8	40.2	17.8	29.7	25.2	-	
WI47 NO	357812	406021	33.4	26.3	21.9	11.0	9.5	14.3	10.8	17.0	21.7	22.2	33.9	30.8	-	-	-	Triplicate Site with WI47NO, WI48NO and WI49NO - Annual data provided for WI49NO only
WI48 NO	357812	406021	32.2	29.5	24.5	10.2	9.1	14.1	12.4	17.0	21.1	21.7	34.2	29.2	-	-	-	Triplicate Site with WI47NO, WI48NO and WI49NO - Annual data provided for WI49NO only
WI49 NO	357812	406021	34.0	29.4	21.9	10.6	9.3	15.5	11.8	16.7	21.5	22.0	33.7	26.0	21.1	18.0	-	Triplicate Site with WI47NO, WI48NO and WI49NO - Annual data provided for WI49NO only
WI51 NO	358787	405933	33.1	29.2	22.2	14.3	13.1	20.9	18.5	23.4	28.4	27.8	31.1	30.2	24.4	20.7	-	
WI52 NO	362137	396948	42.6	39.9	35.2	19.9	22.8	32.2	24.8	30.2	36.1	36.4	40.0	23.0	31.9	27.1	-	
WI53 NO	353896	408518	30.1	28.9	22.7	13.5	12.2	16.6	16.8	18.2	21.8	23.4	25.0	27.0	21.4	18.1	-	
WI54 NO	370612	400586	31.9	30.9	26.9	14.7	16.8	23.5	17.7	18.9	30.0	28.0	37.2	30.0	25.5	21.7	-	
WI63 NO	356928	404982	30.5	25.8	24.9	15.2	15.8	22.0	17.5	21.5	26.7	27.7	31.2	28.3	23.9	20.3	-	
WI71 NO	368244	402563	37.9	34.3	29.7	20.1	22.6	28.4	25.4	27.9	34.1	32.2	35.0	37.4	30.4	25.9	-	
WI81 NO	355979	410362	28.9	26.1	21.7	12.6	14.4	19.2	18.3	19.7	23.4	26.0	32.1	29.4	22.7	19.3	-	

☒ **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**

☐ **Local bias adjustment factor used**

☒ **National bias adjustment factor used**

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

☒ **Greater Manchester confirm 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 Greater Manchester During 2020

Bolton Metropolitan Borough Council

Air quality assessments are required for large developments that may have a significant impact on air quality. 16 air quality assessments were received for developments in 2020. The air quality assessments all demonstrated that the impacts would be not significant at relevant receptor locations. Electric vehicle charging provision is required for relevant developments where there is parking provision (e.g. housing developments). Construction and environmental management plans (CEMP) are also required to control dust and emissions during the construction phase of large developments.

One A2 permit application was received under the PPC regime from De La Rue International Ltd, Wingates Industrial Estate, Westhoughton, BL5 3XE. The application is for the surface treatment of products using organic solvents in plant with a consumption capacity of more than 150 kg or more per hour or more than 200 tonnes per year. The installation has two thermal oxidisers to abate the solvent emissions. A separate planning application for the site was submitted with an air quality assessment, which demonstrated that the air quality impacts would be negligible providing emission limits were met and the stack height was maintained at a height of 16 metres.

No large biomass, CHP or district heating applications were received in Bolton during 2020.

Bury Metropolitan Borough Council

The Environment Section at Bury Council recommended that Electric Vehicle Charging Points be installed at 95 developments, where the scale and nature of the application meant that an Air Quality Assessment Report was not required.

A total of 10 AQ assessment reports were received and reviewed in support of planning applications during 2020.

All reports concluded that the impacts from the Construction Phase would be ‘Not Significant’ if dust mitigation measures are implemented. The impacts from the Operational

Phase of each development were assessed as being 'Negligible' and therefore, 'Not Significant'. Although the reports concluded that no mitigation measures were required, the installation of electric vehicle charge points were required by planning condition.

For the mortar batching plant and gas engines, appropriate environmental permits will control emissions to air.

For the biomass boiler the proposal is for a 242kw wood pellet biomass boiler at a care home. An AQ screening assessment and detailed AQ assessment have been submitted and the reports have found the emissions to be acceptable. Discussion is on-going regarding the height of the proposed chimney.

AQ reports were also received for 4 Greater Manchester Spatial Framework (GMSF) sites

A total of 2 new environmental permits (Part B) were issued under the Environmental Permitting Regulations 2016 (As Amended) during 2020 and a total of 3 permitted processes (Part B) closed during 2020.

Manchester City Council

44 planning applications in Manchester required an Air Quality Assessment, and none were concluded to have anything other than a negligible outcome in terms of impacts of the operational phase of the development on local air quality. Where construction phase impacts were identified, mitigation actions were secured by planning condition, as was any mitigation required to address identified new introduced exposure effects.

New sources identified during 2020 with a potential to impact air quality include the following:

> Planning Application Number: 128523/FO/2020
>
> Address: Christie Hospital Wilmslow Road Manchester M20 4BX
>
> Proposal: Erection of a 33 metre high replacement chimney to the Energy Centre; installation of 1 x CHP unit within an acoustic enclosure, along with associated equipment; installation of a roof mounted CHP heat rejection radiator, increase in the roof height of the Energy Centre by 1.5 metres; replacement and relocation of aging oil storage tanks; elevational alterations to the fuel tank bund wall and Energy Centre; installation of access stairs.

Oldham Metropolitan Borough Council

OMBC reviewed 14 planning applications that required an Air Quality assessment in 2020. This included applications such as for 160 new residential properties, 99 new residential properties, a waste to energy plant and several small combined heat and power gas

powered plants. Air quality reports indicated a negligible or better effect on air quality from these applications We received an application in 2020 for a gas peaking plant facility consisting of 11 no. 4.5MW gas engines close to an existing Air Quality Management Area off Broadgate. Although the Air Quality Assessment for this application suggested the plant's effect on Local Air Quality would be negligible, we were not confident that the assessment had fully considered the full implication of the proposal on Local Air Quality and recommended refusal of the application to planning. Subsequentially the applicant has withdrawn the proposal and submitted an application for the installation and operation of battery storage with no emissions on this site.

In 2020 the council received an amended application for a new link road between Knowls Lane and Oldham Road, Lees. This new road should improve congestion on Oldham Road, Lees for traffic traveling from Saddleworth to Lees, Oldham Town Centre, Ashton and Abbey Hills area of Oldham. This should also improve the air quality in Lees as there should be less congestion and a smoother flow of traffic at the junction with Hartshead Street and High Street which is currently causing a bottleneck for traffic in the area.

At the end of 2020 a new link road was opened (Lydia Becker Way) linking Broadway (A663) to Foxdenton Lane. This road should take some of the traffic visiting Oldham Broadway Business Park off the southern end of Broadway. Broadway is currently an Air Quality Management area.

Permitted processes- In 2020 we received one application for a part B permitted process, a vehicle resprayers operation in Royton. There were two Part A installation permits issued in 2020, one for a New Medium Combustion Plant (natural gas) at Stock Lane in Chadderton and another for a Waste Landfilling; greater than 10 Tonnes per day with capacity greater than 25,000 Tonnes excluding inert waste in Scouthead. One part B process was mothballed, an adhesive coating installation in Chadderton, due to production dropping below the threshold for the permit.

Rochdale Metropolitan Borough Council

All developments deemed to have an impact upon air quality are required to submit air quality assessments as part of the planning process. In 2020, 25 air quality assessments had been submitted to Rochdale Council for consideration. These assessments identified no significant negative impacts upon nearby receptors and have been put forward for approval. As part of ongoing work to improve air quality, EV charge points are required to be installed at each domestic property with a driveway and at all new commercial developments at a ratio set per number of parking spaces. This is in line with Defra's

consultation guidance into the requirement for EV charge points at new and substantially changed developments.

In 2020 one permitted process has ceased operations, which involved coating wood with water based paints and lacquers. There has been notification of a significant decline in business at a number of permitted sites in the borough reducing the impact from these sources.

In 2020 work commenced on the new link road (South Heywood Masterplan) which will result in the creation of 1,000 new homes, a new primary school, and over 135,000m^2 of employment space. The project involves the construction of a brand new road to create a new access route from the M62 directly to the South Heywood employment area (Hareshill Road and Pilsworth Road). NOx tube 20 was installed to monitor the levels at the location before, during and after the development to assess the contributions from the new access road and was funded from section 106 funds from the developer.

Salford City Council

Salford City Council has not identified any new sources relating to air quality within the reporting year of 2020. Most of the 16 planning applications requiring Air Quality Assessments included a recommendation for dust control mitigation measures during the demolition / construction phase. One Air Quality Assessment recommended mechanical ventilation and non-opening glazing on the façade of a development close to the M602 motorway to protect future users of the site. There have been no planning applications related to large biomass installations, CHP or district heating schemes in 2020. 6 part A and 2 part A2 and B industrial installations were granted a permit in Salford during 2020 under the Environmental Permitting (England and Wales) Regulations 2016.

Stockport Metropolitan Borough Council

In 2020 Stockport received 129 planning applications requiring an air quality assessment. Of these only one of these showed the potential for greater than a negligible outcome. The potential effect of the air quality on the residents was highlighted. Suitable mitigation measures were put in place to prevent this being an issue.

No new permitted Processes likely to have an impact on the AQMA were issued, however one permit for the coating of metal was surrendered.

Tameside Metropolitan Borough Council

Six planning applications required an Air Quality Impact Assessment. The impact on air quality was deemed to be negligible for all.

There were no new biomass, CHP or district heating schemes

No new permits issued for industrial processes.

Trafford Metropolitan Borough Council

In 2020 there were no new emissions sources developed within Trafford with a potential to have a significant adverse impact upon Local Air Quality.

Wigan Metropolitan Borough Council

Three applications for Part B Environmental Permits were received in 2020: one for a mobile crushing and screening plant; this application was granted. Two were for biomass boilers <1Mw (Chapter 5, Section 5.1, Part B (a, v) of The Environmental Permitting Regulations 2016); neither had been determined as of the end of 2020.

Additional Air Quality Works Undertaken by Greater Manchester Local Authorities During 2020

Summary of GM CAP position as of June 2021

The Secretary of State instructed many local authorities across the UK to take quick action to reduce harmful nitrogen dioxide (NO2) levels and has issued a direction under the Environment Act 1995 to many local authorities undertake feasibility studies to identify measures for reducing NO2 concentrations to within legal limit values in the “shortest possible time”. In Greater Manchester (GM) this is being delivered via the Greater Manchester Clean Air Plan.

GM has been directed by the Government to introduce a charging Clean Air Zone (CAZ) Class C across the region. Certain vehicle types will pay a daily charge for driving inside the zone if they do not comply with emissions standards in the Government’s CAZ Framework. Non-compliant vehicles that will be charged are: Buses, Coaches, Minibuses, Hackney Carriages and Private Hire Vehicles, Heavy Goods Vehicles and Light Goods Vehicles.

GM has been working to develop the detail of the GM CAZ and associated package of supporting funds, discounts and exemptions for impacted vehicle owners. Following the consultation in late 2020 GM has developed a Final Post-Consultation Package, where the CAZ is proposed to launch in May 2022, subject to Local Authority governance.

Throughout this process GM has used best practice methodology and assumptions to understand the effects of the measures, which have been reviewed and approved by the Joint Air Quality Unit (JAQU) and their Technical Independent Review Panel (TIRP). GM has continued to work closely with Government, including most recently updates to incorporate the impacts of Covid-19 to the Clean Air Plan in accordance with national guidance.

The modelling undertaken for the final plan package of measures predicts there to be exceedances in all districts with the exception of Oldham and Wigan in the Do Minimum scenarios for 2023. By 2025, exceedances are only predicted in Manchester, Salford, and Bury, which is consistent with the Consultation modelling scenarios. Modelling has not yet been updated for the pre-2023 scenario, but it expected that all authorities would be in exceedance in 2022 without the CAP.

For the Final Post-Consultation Package, in 2023 when the GM CAP is fully opened with all measures in place the proposed scheme is predicted to reduce the number of exceedances from 71 down to 5. These are located at:

- A34 John Dalton St & Bridge St, Manchester (2 exceedances);
- A58 Bolton Road, Bury (2 exceedances); and
- A57 Regent Road, Salford (1 exceedance).

However, by 2024 with an extra year of natural fleet turnover, the associated additional improvement to vehicle emissions means that there are no exceedances predicted in GM as a result of the reduction in vehicle emissions produced by the GM CAP.

Therefore, 2024 is the first year of compliance with the GM CAP Final Policy. This is the same as produced by the Consultation Option, and meets the shortest possible time as set out in the Ministerial Directive. Compliance is achieved three years earlier than that predicted without the GM CAP in place.

Further detailed information and related technical reports can be found on the Clean Air Greater Manchester website – cleanairgm.com.

QA/QC of Diffusion Tube Monitoring

Diffusion Tubes operating in Greater Manchester are prepared and analysed by Staffordshire Scientific Services using the 20% triethanolamine (TEA) in water method. The

laboratory method is UKAS accredited, and the laboratory takes part in the AIR-PT independent quality assurance scheme. A summary report on laboratory performance in the AIR-PT scheme between May 2019 and February 2021 shows satisfactory performance.

Diffusion Tube Annualisation

Annualisation is required for any site with data capture less than 75% but greater than 25%. Details of the tubes requiring annualisation are provided in Table C.2.

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.

Greater Manchester has applied a national bias adjustment factor of 0.85 to the 2020 monitoring data. A summary of bias adjustment factors used by Greater Manchester over the past five years is presented in Table C.1.

Table C.1 – Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2020	National	03/21	0.85
2019	National	03/20	0.93
2018	National	03/19	0.87
2017	National	03/18	0.89
2016	National	03/17	0.88

NO_2 Fall-off with Distance from the Road

Wherever possible, local authorities should ensure that monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure should be estimated using the Diffusion Tube

Data Processing Tool/NO_2 fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO_2 concentrations corrected for distance are presented in Table B.1.

In Greater Manchester in 2020, fall-off with distance was calculated for 16 tubes which had recorded annual mean concentrations within 10% of the annual mean objective of 40µg/m³ (36 µg/m³). Of these 16, one (BO71NO) was not positioned within 50m of the receptor, and so the fall-off with distance calculator was unable to calculate the predicted concentration at receptor. Detailed results for these tubes is provided at Table C.4. None of the results calculated using the fall-off with distance calculator returned a concentration exceeding the annual mean objective of 40µg/m³.

QA/QC of Automatic Monitoring

Automatic air quality analysers in Greater Manchester area are subject to a high level of quality assurance/ quality control. All analysers are either operated as part of the national Automatic Urban and Rural Network (AURN) or are part of the 'Calibration Club' scheme run by Ricardo-AEA.

The procedures are equivalent to the UK Automatic Urban and Rural Network (AURN) the main features of the services being:-

Calibration Club

- Data screened daily for errors and final data ratified and published to same standard as AURN sites.
- Data checked daily for errors and faults reported to Local Site operators.
- Independent audits twice per year.
- Final data set scaled and ratified to same standard as AURN.

Greater Manchester Air Quality Network (GMAQN)

Ricardo-AEA manages QA/QC and audit of the air quality stations to the same standard as the AURN. The GMAQN officially started on 1 September 2013. Table A1 lists the Greater Manchester sites that are currently operational.

PM_{10} and $PM_{2.5}$ Monitoring Adjustment

A number of different instruments are used in Greater Manchester for the measurement of particles. Historically TEOM have been used, but DEFRA replaced a number of instruments with TEOM FDMS and some sites use the BAM or Partisol.

The reference method for the UK PM_{10} Objectives (and EU limit values) is based upon measurements from a gravimetric sampler. This samples over a 24 hour period and the particulate proportion less than 10 microns (PM_{10}) is measured by the mass difference before and after exposure. It is labour intensive and the UK, and European countries have invested heavily in the TEOM (Tapered Element Oscillating Microbalance). The TEOM measurements have been historically adjusted by a factor of 1.3 to make them gravimetric equivalent. However to further improve the technique; the measurement was modified by lowering the sampling temperature from 50°C to 30°C and adding a dryer to remove water vapour. This system is referred to a Filter Dynamics Measurement System (FDMS) and is equivalent to the EU reference method.

Due to widespread use of the TEOM, and its reliability and the need to report to the EU using an 'equivalent method', The Volatile Correction Model (VCM) was developed by Kings College London, to adjust the TEOM data. Studies have shown that FDMS sites within 200 kilometres can be used to correct the TEOM data as it assumes that the sample lost by the heating is the same over this geographical area. Sufficient FDMS sites have only been available since 2008/9 for the correction to be applied. VCM corrections have been applied to TEOM analyser results automatically since 2014 and historic records within the ASR have been altered to reflect VCM corrected results.

Automatic Monitoring Annualisation

Annualisation was required for Automatic Monitoring Station Wigan Leigh for pollutants NO_2, PM_{10} and $PM_{2.5}$. Annualisation was not required for other automatic monitoring stations with under 75% (Bolton A579 Derby Street, Bury Prestwich) as these sites did not have valid data capture (under 25%).

NO_2 Fall-off with Distance from the Road

Wherever possible, local authorities should ensure that monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure should be estimated using the NO_2 fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-

automatic annual mean NO_2 concentrations corrected for distance are presented in Table B.1.

None of the calculated distance corrected concentrations exceed the annual mean objective for NO_2.

Table C.2 – Annualisation Summary (concentrations presented in µg/m^3)[21]

Site ID	Annualisation Factor (Eccles)	Annualisation Factor (Glazebury)	Annualisation Factor (Trafford Wellacre Academy)	Annualisation Factor (Wigan Centre)	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
Wigan Leigh 3 (NO2)	0.98	1.00	0.99	-	0.99	24	23.79	Automatic Site.
Wigan Leigh 3 (PM10)	1.12	1.04 (TRAF)	-	1.10	1.09	15	16.29	Automatic Site. Automatic Sites Trafford and Wigan Centre used instead of Glazebury and Trafford Wellacre to calculate PM_{10} Annualised annualisation factor.
Wigan Leigh 3 (PM2.5)	1.12	-	-	1.09	1.11	7	7.75	Automatic Site. Automatic Site Wigan Centre used to calculate $PM_{2.5}$ Annualised annualisation factor.
Tameside A635 (NO2)	0.80	0.79	0.78		0.79	37	29.22	Automatic site. Data Capture above 25% but below 33%.
Tameside A635 (PM10)	1.02	0.98 (TRAF)		0.97	0.99	16	15.82	Automatic Site. Automatic Sites Trafford and Wigan Centre used instead of Glazebury and Trafford Wellacre to calculate PM_{10} Annualised annualisation factor.

[21] Annualisation tool used for Diffusion Tubes. TG16 Guidance followed for Automatic Tubes (Wigan Leigh)

Site ID	Annualisation Factor (Eccles)	Annualisation Factor (Glazebury)	Annualisation Factor (Trafford Wellacre Academy)	Annualisation Factor (Wigan Centre)	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
Tame side A635 (PM2.5	0.96			0.90	0.93	9	8.36	Automatic Site. Automatic Site Wigan Centre used to calculate $PM_{2.5}$ Annualised annualisation factor.
BO11 NO2	1.1440	1.1663	1.1974	-	1.1692	9.1	10.6	
OLNS LNO2	0.8925	0.8842	0.8683	-	0.8817	18.7	16.5	
RO13 ANO2	0.9195	0.9268	0.9178	-	0.9214	18.1	16.6	
RO25 ANO2	0.8878	0.9025	0.8773	-	0.8892	34.2	30.4	
RO2A NO2	0.8214	0.8133	0.7913	-	0.8087	31.6	25.6	
SA16 NO2	0.9175	0.9100	0.8934	-	0.9070	18.4	16.7	
W208 NO2	0.8214	0.8133	0.7913	-	0.8087	-	-	*Triplicate Site with W208NO, W209NO and W210NO - Annual data provided for W210NO only*
W209 NO2	0.8214	0.8133	0.7913	-	0.8087	-	-	*Triplicate Site with W208NO, W209NO and W210NO - Annual data provided for W210NO only*
W210 NO2	0.8214	0.8133	0.7913	-	0.8087	31.8	25.7	*Triplicate Site with W208NO, W209NO and W210NO - Annual data provided for W210NO only*

Table C.3 – Local Bias Adjustment Calculation

	Local Bias Adjustment Input 1	Local Bias Adjustment Input 2	Local Bias Adjustment Input 3	Local Bias Adjustment Input 4	Local Bias Adjustment Input 5
Periods used to calculate bias					
Bias Factor A					
Bias Factor B					
Diffusion Tube Mean (µg/m^3)					
Mean CV (Precision)					
Automatic Mean (µg/m^3)					
Data Capture					
Adjusted Tube Mean (µg/m^3)					

Notes:

This table has been left blank as a National Bias Adjustment Factor has been used.

Table C.4 – 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
BO69 NO	1.5	5.5	36.0	19.0	31.2	
BO71 NO	1.5	77.5	38.0	18.9	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*
MA29 ANO	2.5	4.5	39.0	29.7	*37.7*	*Predicted concentration at Receptor within 10% the AQS objective.*
MA96 NO	3.0	5.0	36.4	25.8	35.0	
OLM RNO	2.0	5.5	37.7	19.7	33.4	
SA65 NO	3.0	13.0	36.6	21.1	30.7	
SA69 NO	1.5	10.0	36.0	18.5	28.7	
SA72 NO	0.5	2.5	36.6	20.5	32.0	
SA78 NO	1.5	4.0	36.2	22.7	33.3	
SA82 NO	2.2	12.2	36.9	22.9	31.2	
TA11 NO	2.0	3.0	39.9	11.0	*37.1*	*Predicted concentration at Receptor within 10% the AQS objective.*
TA21 NO	1.0	2.0	36.7	11.0	33.1	
TA45 NO, TA46 NO, TA47 NO	5.0	10.0	37.0	12.4	31.9	

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
TA54 NO	3.0	8.0	36.6	26.1	33.9	
TA55 NO	3.0	5.0	40.8	26.1	*38.8*	*Predicted concentration at Receptor within 10% the AQS objective.*
TA57 NO	3.0	5.0	36.8	26.1	35.4	
WI18 0NO	2.0	2.0	41.9	13.6	41.9	*Predicted concentration at Receptor above AQS objective.*

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

Figure D.1 Map of Automatic Monitoring Sites in Greater Manchester

A detailed interactive map of automatic monitoring sites is provided online at the Clean Air GM Data Hub.

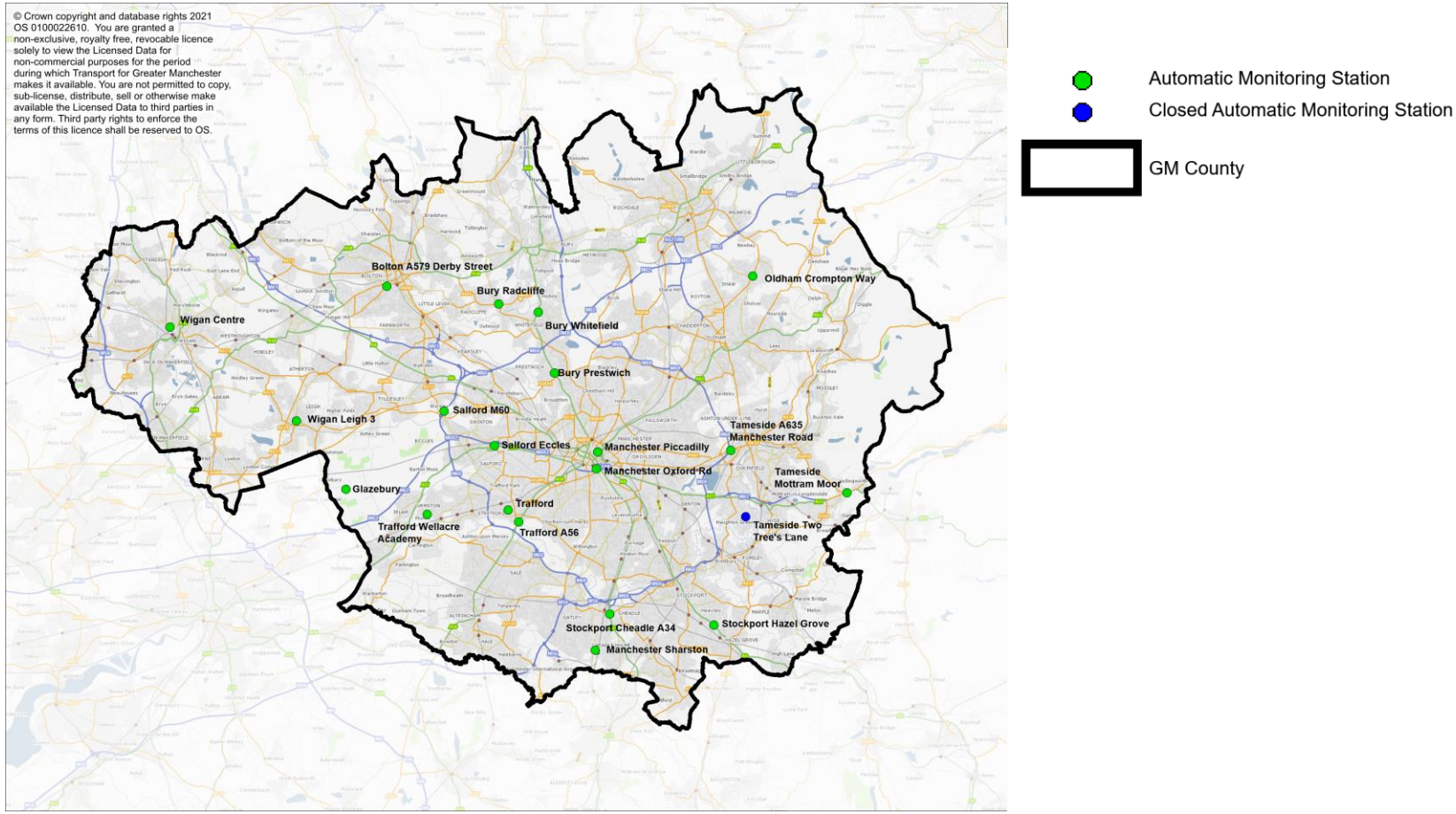


Figure D.2 – Map of Non-Automatic Monitoring Sites (Bury, Rochdale, Oldham)

A detailed, interactive map of diffusion tubes is provided online at the Clean Air GM Data Hub.

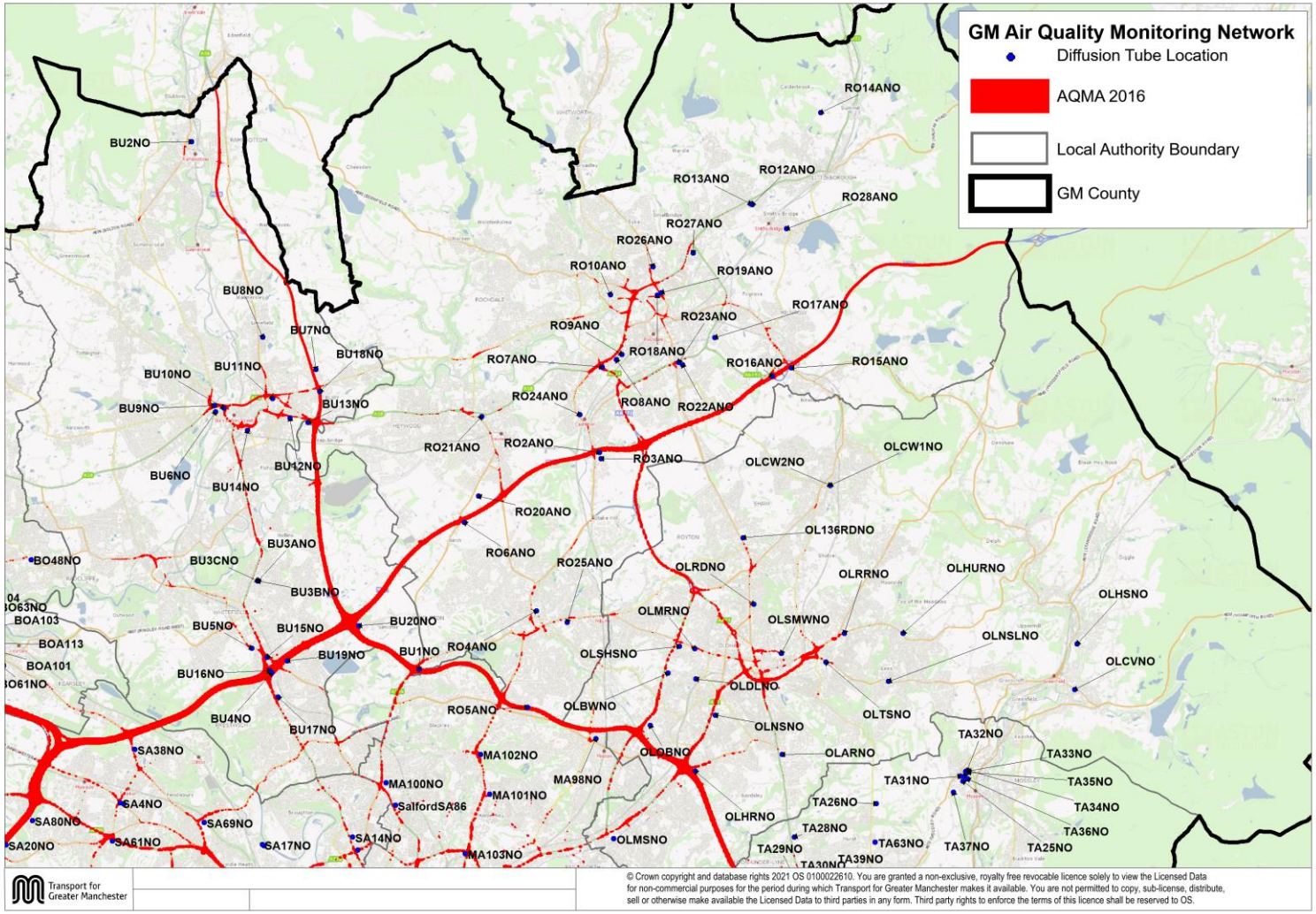


Figure D.3 – Map of Non-Automatic Monitoring Sites (Manchester, Tameside, Stockport)

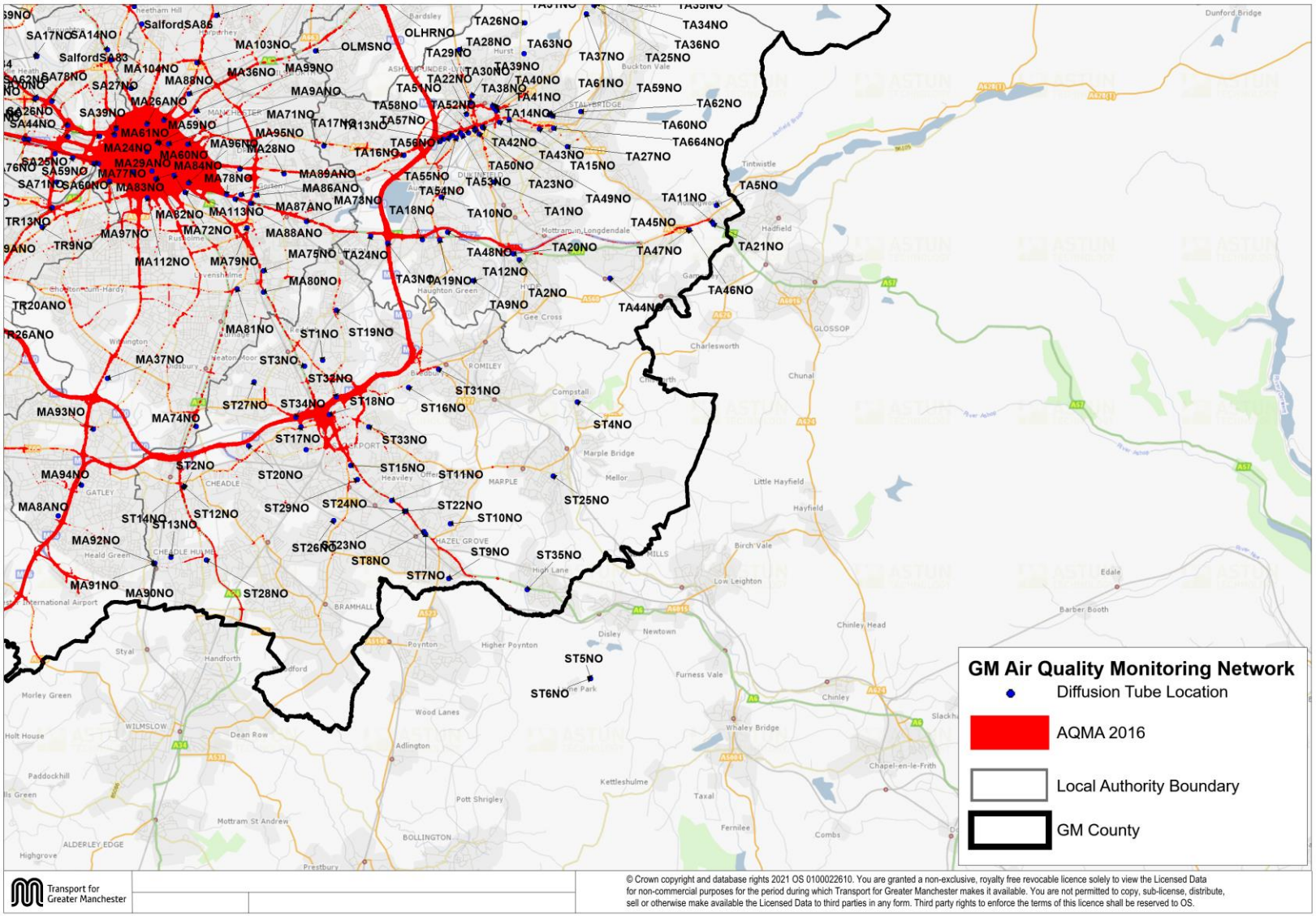


Figure D.4 – Map of Non-Automatic Monitoring Sites (Salford, Trafford)

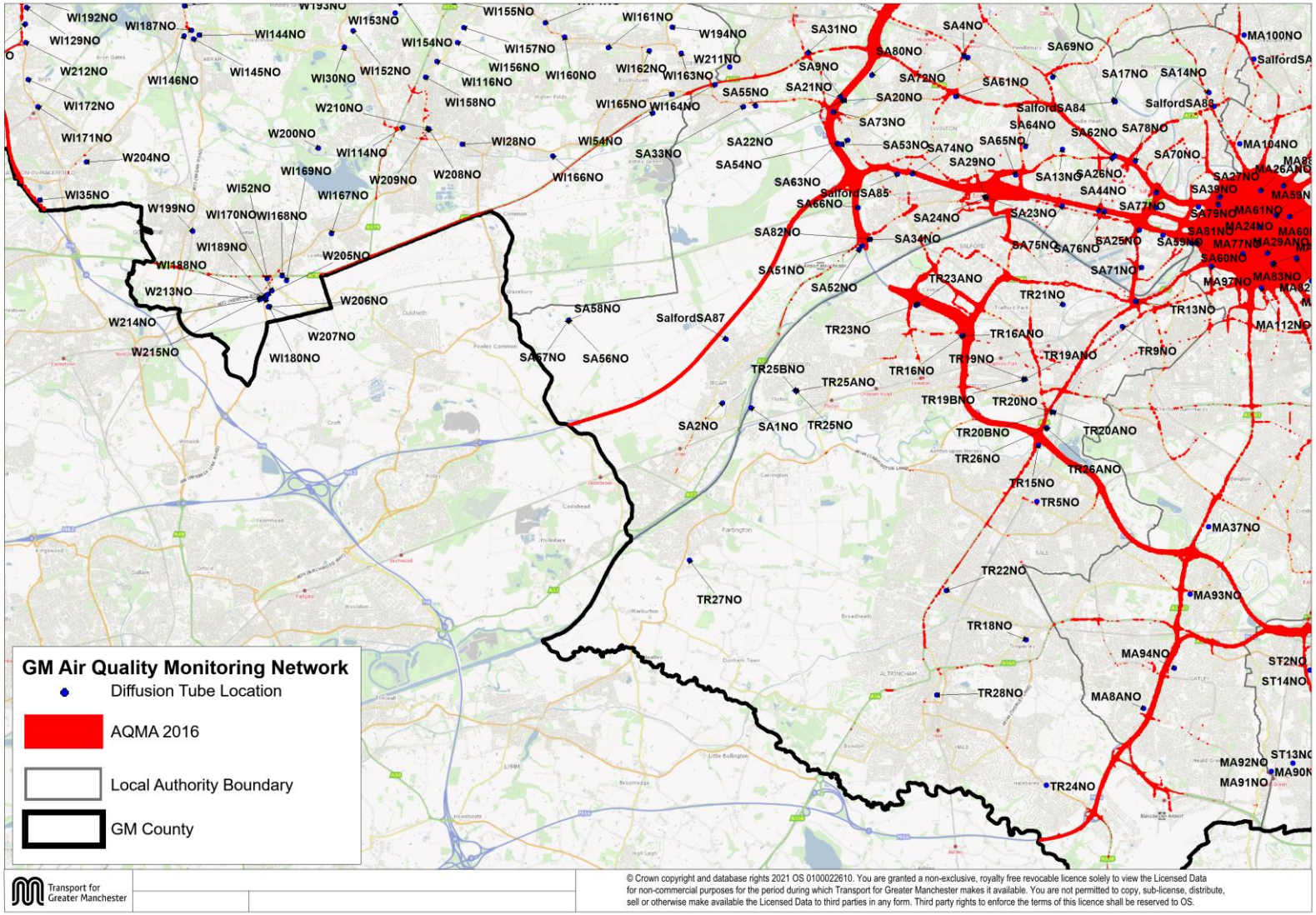
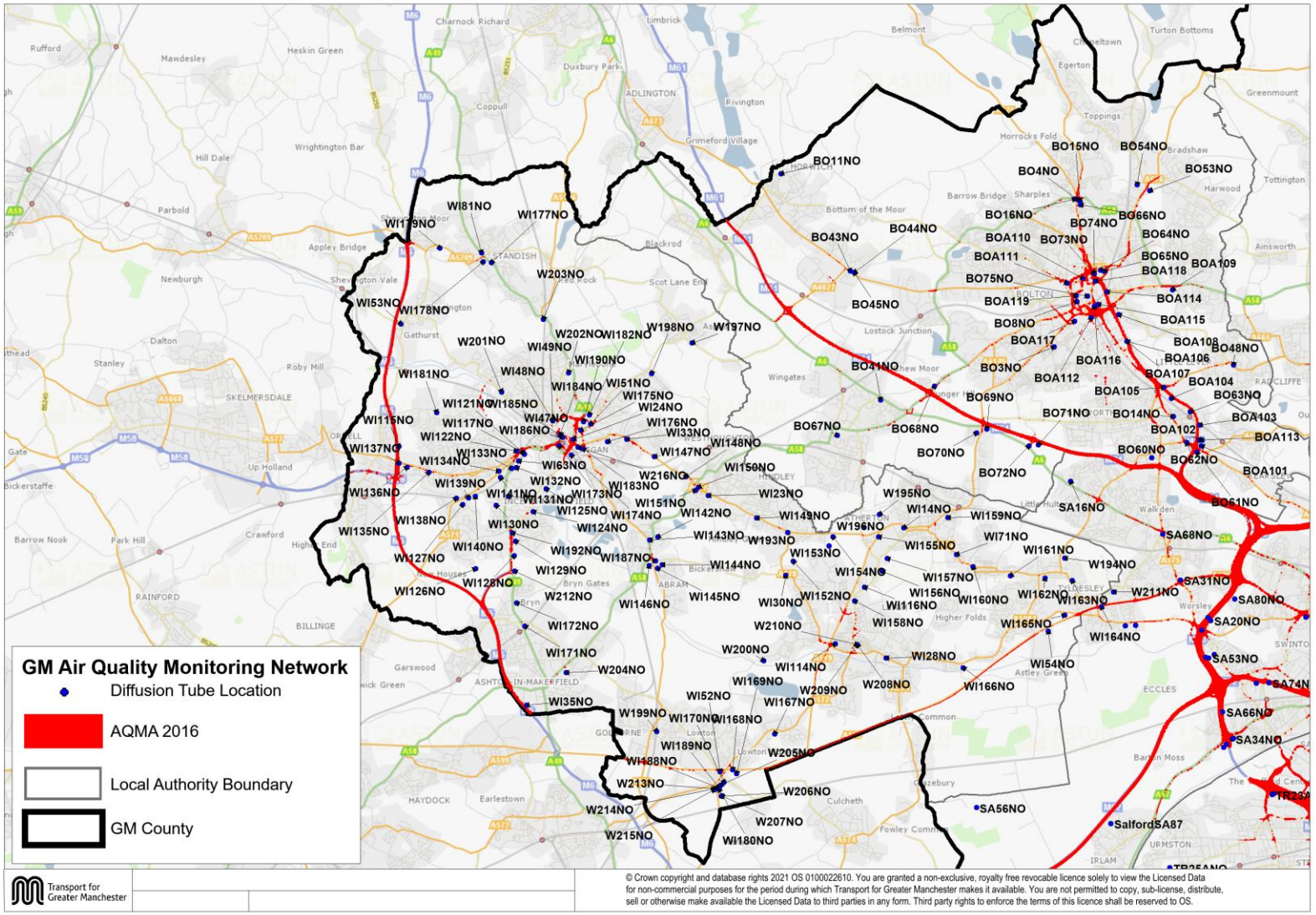


Figure D.5 – Map of Non-Automatic Monitoring Sites (Wigan, Bolton)



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[22]

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

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

Appendix F: Impact of COVID-19 upon LAQM

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

The pandemic 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 23 March 2020, the UK government released official guidance advising all members of the 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[23] suggests reductions in vehicle traffic of up to 70% were experienced across the UK by mid-April 2020, 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. oxides of nitrogen (NO_x), and exhaust and non-exhaust particulates (PM). The Air Quality Expert Group (AQEG)[24] 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

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

[24] 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, and how we can maintain reductions when traffic returns to pre-pandemic levels.

Impacts of COVID-19 on Air Quality within Greater Manchester

The following summarises the timeline of lockdowns in Greater Manchester in 2020. Some local authorities in Greater Manchester were subject to restrictions on alternative dates.

23 March 2020: First nationwide Lockdown. Stay at Home order.

1 June: Phased easing of restrictions across England begins.

30 July: Local lockdown restrictions introduced in parts of Greater Manchester.

15 August: National lockdown easing measures not applied to GM.

14 October: Tier system introduced. GM enters Tier 2.

23 October: GM moves from Tier 2 to Tier 3.

31 October: Second national lockdown introduced.

2 December: Second national lockdown ends.

31 December: GM moves from Tier 3 to Tier 4.

4 January 2021: Third national lockdown announced.[25]

8 March: National lockdown restrictions begin to be eased with reopening of schools and colleges.

[25] Manchester Evening News, 'Timeline: One year of lockdown', (LINK)

The fluctuation in traffic volumes over the changing lockdown situation in GM has significantly affected NO_2 and particulate concentrations in the city-region. During the first national lockdown from 23 March 2020 there were marked reductions in NO_2 levels at urban and roadside automatic monitoring locations in Manchester due to lower volumes of traffic, and Oxford Road levels were 58% lower than modelled 'business as usual' concentrations. This reduction was less than expected from observed traffic reductions as Manchester was also a receptor of pollution transported from continental Europe and the south of the UK during this period. Further details of the effects of the pandemic on Manchester's air quality are included within a Defra report available at the Defra online Air Quality Library and a Ricardo Energy & Environment report available from the Air Quality England website..

During 2020, the aviation sector was significantly disrupted, with an 81% reduction in aircraft movements observed at Manchester Airport relative to 2019 levels. Coupled with the associated reduction in passenger related road traffic, this has contributed to reductions in annual mean NO_2 concentrations at the Manchester Sharston monitoring site, with 2020 representing an 8µg/m^3 reduction relative to 2019 levels.

Fig. F1 Public Transport Modal Split by week, compared with a typical week (TfGM, 2021)

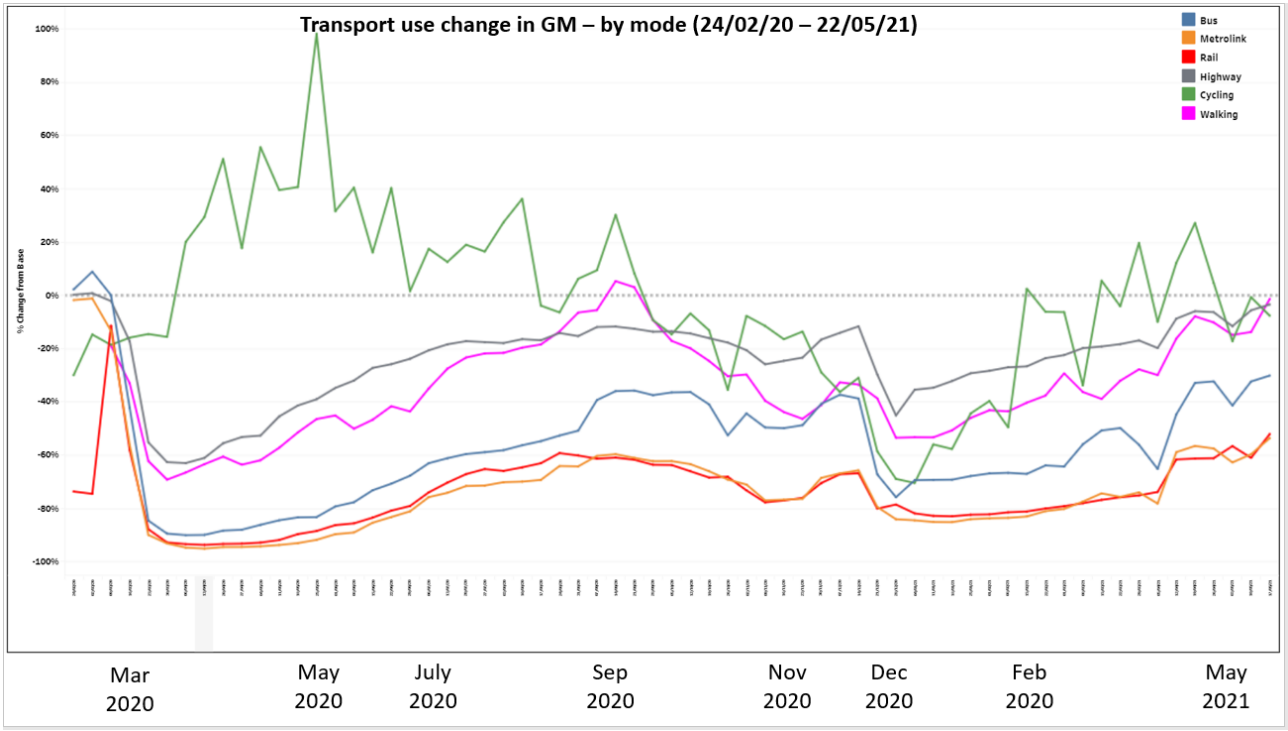
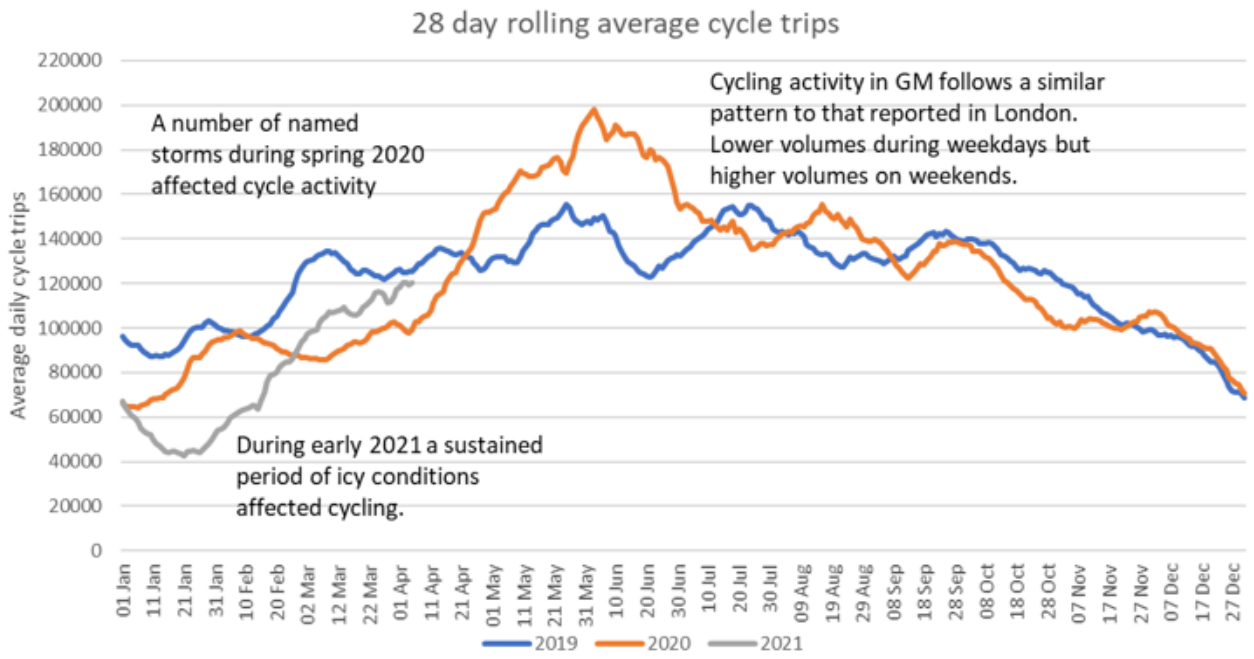


Fig. F2 Average Daily Cycle Trips in Greater Manchester, (TfGM, GMTRADS, 2021)



A significant increase in cycling activity was recorded in Greater Manchester during summer 2020 compared with 2019, but this tailed off once restrictions were lifted. A number of schemes were put into place to accommodate the increased demand for cycling around GM. Further information is given by district below.

The contents of the ASR report explore in more detail some of the trends observed as a result of the pandemic and associated lockdown by local authority area. The impact of lockdown measures on ambient air quality data has also been explored, along with simulated normal concentrations, in the report '[COVID-19 lockdown effects on air quality]'.[26]

Opportunities Presented by COVID-19 upon LAQM within Greater Manchester

Bolton Metropolitan Borough Council

Temporary cycle lanes were implemented on Chorley New Road between the Beehive Roundabout and Queens Park. There has been mixed feedback on the cycle lanes and consultation has been undertaken during 2021 on cycle lane enhancements in the area.

[26] Ricardo Energy & Environment, 'COVID19 lockdown effects on air quality', (LINK)

Emergency Active Travel funding has also been allocated to implement a cycling scheme on the A6 Manchester Road/Salford Road from the Salford/Bolton boundary to Chequerbent roundabout.

Bury Metropolitan Borough Council

Bury Council was keen to use the opportunity of changes to living patterns brought on by the pandemic to promote lasting positive change and implemented the following measures to make active travel a safer, more attractive option:

- Introduced two new combined pedestrian/cycling crossings on the A56.
- Introduced a Low Traffic Neighbourhood in Brandlesholme.
- Re-lined some of the borough's cycle lanes.
- Put LED halo heads on some zebra crossings.
- Cut back vegetation and swept most off-road routes.
- Carried out a traffic calming scheme in Holcombe village.
- Funding allocated for five new crossings at strategic points in walking and cycling infrastructure.

Manchester City Council

- Extensive schemes were undertaken across the city to close roads, widen pavements and facilitate socially-distanced walking and cycling during the initial lockdown.
- 63 trees were planted for the Great Ancoats Street project across various locations within the city, with urban green areas being beneficial in the reduction of air pollution.
- Air quality monitors (diffusion tubes and sensors) were installed for major highways projects to track baseline and post project completion data.
- The council engaged with the Urban Observatory team at the University of Manchester to show live air quality data on a platform by individual projects: manchester-i.com.
- Manchester residents anecdotally reported greatly appreciating the first lockdown when streets were empty of vehicles and air pollution seemed reduced.

Oldham Metropolitan Borough Council

The pandemic has seen an increase in the numbers of people visiting the picturesque Saddleworth area of Oldham. This led to pavements being overcrowded and a highway safety risk as shops saw queues on pavements outside and pedestrians often forced into the road. To combat this risk, several 20mph speed limits have been introduced in a number of villages, including Greenfield and Uppermill. This may lead to a reduction in air pollution levels which may result in the speed limits remaining post the pandemic. However, initially the increased number of visitors may have led to an increase in air pollution in this area.

Rochdale Metropolitan Borough Council

During the COVID-19 pandemic, Rochdale council offices were in the process of hosting the Dippy on Tour dinosaur in the main council offices, Number One Riverside. Due to the onset of the pandemic we closed the offices and staff were required to work from home.

Figures from ONS indicate that 80% of the main population of Rochdale still worked at their place of work during the pandemic and traffic data shows that traffic during the 1st lockdown actually went above pre-COVID levels, possibly due to the move away from public transport to private passenger transport. The reduction in NOx levels over the year show roughly a 50% reduction highlighting the impact from commuters entering Rochdale on the NOx levels in the borough. This gives us the opportunity to look at how the localised fleet operates within Rochdale and any actions we can take forward.

In an area in the centre of Rochdale around the town hall, Packer Street, the highway was closed and the taxi rank relocated to an alternative site via traffic regulation orders. This was done to pedestrianise the area and support the reopening of hospitality venues in July 2020. Tented, seated areas were created via pavement licences which created an increased footprint for the hospitality venues in the area. In doing so traffic was diverted away from this area in the town centre. An alternative taxi rank was created in a nearby by location, again supporting the pedestrianisation of this area in the town centre.

Emergency cycle schemes were put in place to promote cycling in the borough and funding has been sought to make permanent schemes in place from the Mayors fund.**Salford City Council**

As part of the response to the COVID-19 pandemic, Salford City Council is introducing infrastructure to promote safe walking and cycling across the city for all residents. The city saw a huge increase in cycling and walking during the first lockdown period and is keen to make sure this trend continues. Across GM, walking or running for exercise during the first lockdown increased by 120%. Cycling for exercise increased by 45%. There is also a strong

desire to promote the safety of key workers as they travel and improve the environment for residents on their local streets. The City Council has been awarded £0.5million from the Mayor's Cycling and Walking Challenge Fund programme for temporary walking and cycling improvements citywide. Implemented schemes include:

- Blackfriars Street - additional space created for pedestrians and cyclists.
- Liverpool Street - provision of a lightly segregated cycle route, improving access to employment opportunities at MediaCityUK and connections to Salford Royal Hospital and the University of Salford,
- Irwell Street - additional footway and cycle space created by extending the footways.
- Trinity and Islington modal filters - a number of trial modal filters have been implemented to restrict motorised access to properties and businesses.

Further information is available on the City Council's emergency active travel webpage.

Engagement with local councillors in Salford about air quality issues increased during the pandemic, due to several enquiries received regarding air pollution level reductions during the first lockdown period.

Most City Council staff have been working remotely from home during the pandemic and communicating through online means, with an associated reduction in commuting, business travel and deliveries to Council premises. It is envisaged that this arrangement will continue until at least Autumn 2021 and, following this, employees will have the opportunity to work in a blended way (mixture of home/office/other location).

Stockport Metropolitan Borough Council

The council received funding to create a 3.3km parallel route along the A6 from Heaton Chapel to the town centre as part of the phase 1 funding of the DfT Emergency Active Travel Fund. Temporary works have been delivered in district centres using this funding to give space to social distance.

The council submitted projects as part of the second phase leading to the successful allocation of funds for the Stockport Town Centre Package - a series of physical interventions that will create a pedestrian- and cyclist-friendly environment in the historic marketplace and surrounding streets in Stockport town centre. The proposals will also help to support the regeneration of the area that also includes the much-loved Underbanks.

Tameside Metropolitan Borough Council

A ‘pop-up’ cycle lane was introduced on Lord Sheldon Way, Ashton-under-Lyne following a reduction in traffic. Plans to extend the lane were dropped following negative feedback during consultation.

Trafford Metropolitan Borough Council

Temporary cycle lanes were implemented on the A56 initially from Sale through Stretford and Old Trafford between April and November, reducing the road traffic by one lane. This was initially a temporary measure but due to usage levels and positive feedback the measure is currently still in place though covers only Stretford and Old Trafford. Consideration is being progressed as to whether this could become a permanent feature.

Wigan Metropolitan Borough Council

No LAQM related opportunities have arisen as a consequence of COVID-19 within Wigan Borough.

Challenges and Constraints Imposed by COVID-19 upon LAQM within Greater Manchester

- The implementation of the GM CAP was delayed. The statutory consultation that was originally planned for summer 2020 was delayed until winter 2020 and was largely restricted to online activities. The implementation of a charging Class C CAZ that was originally planned to launch in 2021 has also been delayed until 2022, however compliance by 2024 is still expected. **Medium Impact.**
- GM AQAP, Information & Resources Intervention 7.9: Awareness Raising: A public consultation on the GM CAP proposals and Minimum Licensing Standards was held between 8 October 2020 and 3 December 2020. The main method of engagement with stakeholders was through social media, other online material and a questionnaire due to COVID-19 social distancing restrictions. **Medium Impact.**
- The impact of COVID-19 led to delays in Bury Council progressing the replacement of the leaking cabinet at the automatic monitoring station at Prestwich. This delay was caused by problems arranging site visits and also relevant officers in the council having other priorities relating to the pandemic. **Medium Impact**
- GM AQAP, Travel Choices Intervention 5.1: Car Clubs - the fleet of 23 car club vehicles based at the civic centre, Swinton (Salford) which during working hours are reserved for staff travel has been reduced to 14 vehicles (10 petrol and 4 electric vehicles). **Small Impact.**

- GM AQAP, Intervention 6.3: Local Authority Parking Charges - a car parking permit scheme is currently in place at principal Salford city council office/depot locations. Under normal circumstances, monthly salary deductions are charged at 1% of employee annual salary to enable participating employees to utilise any free spaces on the car park. Due to the pandemic and staff working from home, salary charges are currently suspended. **Small Impact.**
- Trafford pollution officers continued to review and assess planning applications in relation to air quality and nuisance. Complaints regarding waste burning and Clean Air Act offences were investigated. However, due to the reallocation of council resources, several items within the GM AQAP did not receive the same level of attention as in previous years. **Small Impact**
- Some important partners and stakeholders of Manchester City Council were unable to undertake air quality improvement actions (for example anti-idling projects at schools, and play streets road closures). **Small impact.**
- No face-to-face public engagement or awareness-raising campaigns were run this year. **Small impact.**
- The pandemic has had an impact on Bolton Council resources which has meant that some staff time has been re-deployed to deal with the implications of the pandemic, which has been particularly badly affected by high infection rates and additional restrictions. The Council has managed to maintain the monitoring network and undertake measures, but it has impacted the ability to develop new actions and proactive engagement beyond that undertaken in relation to the GM CAP. **Small impact**

Table F 1 – Impact Matrix

Category	Impact Rating: None	Impact Rating: Small	Impact Rating: Medium	Impact Rating: High
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
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
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO_2	Sulphur Dioxide

References

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