Canterbury City Council

Annual Status Report 2020

Bureau Veritas

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Document Control Sheet

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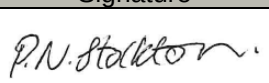
Prepared By	P Stockton	Graduate Consultant	
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Canterbury City Council

2020 Air Quality Annual Status Report (ASR)

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

June 2020

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Executive Summary: Air Quality in Our Area

Air Quality in Canterbury City Council

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

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

The Canterbury district is diverse in character and includes the historic city of Canterbury which encompasses a third of the district's population. The coastal towns of Whitstable and Herne Bay are to the north of the city centre and are also significant centres of population. The majority of the remaining areas covered by the Canterbury district are rural in character and comprised of several small villages.

The main source of air pollution in the district is road traffic emissions from major roads, notably the A2, A28 and A299. Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an Air Quality Strategy (AQS) objective, which are legally binding pollution limits to which the Council must adhere.

An AQMA was declared in April 2006 along parts of the A28 at Broad Street/Military Road, in Canterbury City Centre, where exceedances of the annual mean objective for nitrogen dioxide (NO_2) were predicted. This AQMA was then incorporated into an expanded area in 2011 (AQMA No.2 Canterbury City Centre), which also included two small areas of Broad Street and Wincheap where there were predicted exceedances of the NO_2 one hour mean AQS objective. The AQMA was expanded further in April 2018 to incorporate areas along Rheims Way, Old Dover Road, New Dover Road and Chaucer Road due to predicted exceedances of the annual mean NO_2 AQS objective. The boundaries of the updated AQMA (Air Quality Management Area – Canterbury 3) were conservatively selected to cover areas exceeding the annual mean air quality objective for NO_2, as well as those areas within 10% of the objective.

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

An additional AQMA in Herne (Air Quality Management Area – Herne 1) was also declared in April 2018 to cover the Canterbury Road/School Lane junction for predicted exceedances of the annual mean NO_2 objective.

The city centre suffers from significant congestion due to the large net inflow of commuters as well as secondary school children, shoppers, university students and tourists. The city centre roads are subject to frequent congestion in peak hours due to the high volume of vehicle movements along a historic layout of roads with residential properties in close proximity to the roadside. In Herne, there is an air quality 'hotspot' at the mini roundabout, again as a result of high traffic volumes with residential properties in close proximity to the roadside.

The 2019 automatic monitoring results show that both the long term and short term AQS objectives for PM_{10} and NO_2 were met at the automatic background station CM1. The automatic roadside site (CM3), which is located within the Canterbury City AQMA boundary, recorded a much higher concentration. However, the 1-hour mean and annual mean NO_2 AQS objectives continued to be met in 2019.

The 2019 diffusion tube results show that overall levels of NO_2 across the district remained similar to 2018, with some locations increasing slightly and some decreasing. However, exceedances of the annual mean NO_2 AQS objective were observed at six diffusion tube monitoring locations in 2019, three more exceedances than in 2018, these were all located within a declared AQMA:

- DT1 at 92b Broad Street, Canterbury (Canterbury 3 AQMA)
- DT4 at Old Tannery, Rheims Way, Canterbury (Canterbury 3 AQMA)
- DT27 at 44 Broad Street, Canterbury (Canterbury 3 AQMA)
- DT15 at 284 Wincheap, Canterbury (Canterbury 3 AQMA) – *new exceedance*
- DT23 at 10-16 Wincheap, Canterbury (Canterbury 3 AQMA) – *new exceedance following change in location*
- DT28 at 18 Herne Street, Herne (Herne 1 AQMA) – *new exceedance*

The monitoring locations DT1, DT4 and DT27 are not representative of exposure. Therefore, the NO_2 fall-off with distance calculator was used to estimate the NO_2 concentration at the nearest location with relevant exposure for the three monitoring locations. Following distance corrections, the annual mean NO_2 concentrations at

receptors closest to DT1 remained above the annual mean NO_2 AQS objective (reporting 43.2µg/m^3 in 2019, approximately the same concentration as in 2018, 43.4µg/m^3 following distance correction). Following distance-correction, DT27 was reduced to within 10% of the AQS objective (36.5µg/m^3) and DT4 reported below the AQS objective, at 26.1µg/m^3 at the nearest receptor location. The NO_2 fall-off with distance correction calculation for these three locations is detailed in Appendix C.

The annual mean NO_2 concentration did not exceed 60µg/m^3 at any monitoring location and therefore exceedances of the NO_2 AQS 1-hour mean objective of 200 µg/m^3 at these locations is unlikely. Furthermore, the two continuous NO_2 monitoring sites did not record any exceedances of the 1-hour mean objective in 2019.

Canterbury City Council produced an Air Quality Action Plan 2018-2023 at the end of 2018. The plan summarises the current state of the declared AQMAs, including a source apportionment study, and puts forward a suite of measures to tackle air quality issues within the AQMAs and in the Council area as a whole.

There has been a growing number of planning applications submitted in recent years for new residential and commercial developments within Canterbury. To ensure air quality is considered thoroughly, an annual review of diffusion tube placement is undertaken to highlight the potential areas where no monitoring is being carried out but air quality impacts are likely to occur. In 2019, one additional diffusion tube was added (DT60 – Canterbury Bus Station), this is in addition to the fourteen additional diffusion tube locations that were commissioned in 2018 throughout the Canterbury District to provide better data and to aid air quality assessments within the planning process. Additionally DT23 moved location at the beginning of the monitoring year from a lamppost to the façade of the nearest building, therefore negating the need for the result to be corrected for distance.

Details of major planning applications which have been granted in 2019 are presented in Appendix C.

Actions to Improve Air Quality

The Council published the Air Quality Action Plan 2018 – 2023 in December 2018. It provides various measures to work towards achieving the Air Quality Objectives within the AQMAs through jointly working with its partners including Kent County Council (KCC), transport operators, schools and local businesses.

There are a number of relevant policies and strategies as below, which can help contribute to overall improvements in air quality and reducing transport emissions:

- South East Plan (Regional Spatial Strategy) (2006-2026)
- Canterbury District Transport Strategy (2014-2031)
- The Kent Environment Strategy: Implementation Plan (2017)
- The Kent and Medway Energy and Low Emissions Strategy (ELES) (Draft 2019)
- Local Transport Plan for Kent (2016-2031)
- Canterbury District Local Plan (2017)

Conclusions and Priorities

Although the 2019 monitoring results show that the annual mean NO_2 AQS objective has been met at the majority of the monitoring locations, six locations were observed to have exceeded the annual mean objective for NO_2. Once distance correction was taken into consideration, four diffusion tubes (DT1, DT15, DT23 and DT28) still exceeded the AQS objective at locations of relevant exposure. Three of these diffusion tubes are located within the Canterbury City AQMA (DT1, DT15, and DT23) and one diffusion tube is located within the Herne AQMA (DT28).

Following annualisation, bias adjustment and distance-correction, there were three new exceedances reported in 2019 and one exceedance that has been consistently exceeding since monitoring began (DT1). The new exceedances were:

- DT28 at 18 Herne Street, Herne (Herne 1 AQMA)
- DT23 at 10-16 Wincheap, Canterbury (Canterbury 3 AQMA)
- DT15 at 284 Wincheap, Canterbury (Canterbury 3 AQMA)

Trends over the past five years at DT28, located within the Herne AQMA, have shown a gradual increase in NO_2 concentrations whilst remaining below the AQS objective of 40µg/m^3, however this location exceeded the AQS objective in 2019.

It is worth noting that DT23 was relocated in January 2019 to the façade of a building of relevant exposure, and is now situated further from the road but at a slightly lower height; therefore, previous years have used a correction factor for the distance to the nearest receptor, which has not been necessary this year.

The monitoring site DT15 exceeded for the four years previous to 2018, but reduced to 39µg/m^3 in 2018. This location returned to above the AQS Objective in 2019, recording 42.5µg/m^3; however, this is lower than the last exceedance in 2017 of 48.5µg/m^3.

The main priority and challenge for the Council is to tackle poor air quality within the AQMAs and identify any further areas of poor air quality. The current air quality action plan will ensure appropriate measures are implemented within the AQMAs to help reduce congestion and improve air quality.

Local Engagement and How to get Involved

The main source of air pollution within Canterbury City Council is from road traffic emissions. Therefore the best way for members of the public to help improve air quality in Canterbury is to adjust their normal travel patterns to be more sustainable.

The following are suggested alternatives to private travel that would contribute to improving the air quality within the City:

- Use public transport where available – This reduces the number of private vehicles in operation reducing pollutant concentration through the number of vehicles and reducing congestion;
- Walk or cycle if your journey allows – From choosing to walk or cycle for your journey the number of vehicles is reduced and also there is the added benefit of keeping fit and healthy;
- Car/lift sharing – Where a number of individuals are making similar journeys, such as travelling to work or to school car sharing reduces the number of vehicles on the road and therefore the amount of emissions being released.

This can be promoted via travel plans through the workplace and within schools; and

- Alternative fuel / more efficient vehicles – Choosing a vehicle that meets the specific needs of the owner, fully electric, hybrid fuel and more fuel efficient cars are available and all have different levels benefits by reducing the amount of emissions being released.

Canterbury City Council publishes air quality information on its news website at https://news.canterbury.gov.uk/airquality/

For more information on LAQM and the work being done by DEFRA to tackle air pollution, please visit https://uk-air.defra.gov.uk/.

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Local Air Quality Management

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

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

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

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 Canterbury City Council can be found in Table 2.1. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=46. Alternatively, see Appendix D: Maps of Monitoring Locations and AQMAs, which provides for a map of air quality monitoring locations in relation to the AQMAs.

Table 2.1 - Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	City / Town	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance (maximum monitored/modelled concentration at a location of relevant exposure)		Action Plan		
						At Declaration	Now	Name	Date of Publication	Link
Air Quality Management Area – Canterbury 3	AQMA No.2 Canterbury City Centre was declared in 2011, extended to contain AQMA Canterbury 3 in April 2018	NO_2 Annual Mean	Canterbury	Larger City Centre AQMA	No	55.0 µg/m^3	44.1 µg/m^3	Canterbury AQAP	01/04/2018	https://democracy.canterbury.gov.uk/documents/s99842/Appendix%201%20Air%20Quality%20Action%20Plan.pdf
Air Quality Management Area – Herne 1	01/04/2018	NO_2 Annual Mean	Herne	Junction of the A291 and School Lane	No	38.2 µg/m^3	41.3 µg/m^3	Canterbury AQAP	01/04/2018	https://democracy.canterbury.gov.uk/documents/s99842/Appendix%201%20Air%20Quality%20Action%20Plan.pdf

Note: The NO_2 concentrations shown in the table above are from the monitoring sites, within the AQMAs, where the highest concentration was reported in the year of declaration and the current year. The maximum concentration will not necessarily be at the same monitoring site for both years. In 2019, the greatest exceedance was at DT23 in AQMA - Canterbury 3 and DT28 in AQMA - Herne 1

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

Progress and Impact of Measures to address Air Quality in Canterbury City Council

Defra's appraisal of last year's ASR, which was accepted, concluded that the report was well structured, detailed, and provided the information specified in the Guidance. A comment regarding the colour of the AQMA boundary in Figures D.1 and D.3 has been addressed.

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

More detail on these measures can be found in the Action Plan (2018 – 2023). Key measures Canterbury City Council have been working on to reduce emissions are:

- Improving traffic management by working with partners at KCC and Highways England to make improvements to traffic flow through the city centre;
- Development of a new A2 slip road at Wincheap - planning consent received but progress stalled due to problems with the Wincheap Park and Ride extension scheme;
- Enhanced park and ride provision including 28 Park and Pedal spaces in a secure cycle compound at the Wincheap Park and Ride, proven effective as there is a waiting list for the service. Park and Pedal Sturry is nearly ready for launch;
- Increased parking charges in the city centre and 20% discount for electric and plug-in hybrid vehicles at all main car parks;
- Awarded £156,000 Defra air quality grant funding to install 17 dual 22kw charge points into car parks and park and ride sites, including the first one adjacent to the Herne village AQMA at School Lane car park. The grant will also go towards two further projects in Herne – new anti-idling signs across the village, and an education and awareness project in partnership with Herne infants and junior schools;
- Working with the Quality Bus Partnership to improve the local public transport network and get the cleanest fleet in terms of emissions. The remaining Euro 3 buses were replaced by Euro 5 buses in July 2019. The Park and Ride contract

is now up for renewal and the specification for the new tender document includes options for electric buses, longer operating times and alternative routes;

- Home-working encouraged and facilitated by the roll out of upgraded broadband infrastructure across 138,000 homes and businesses, 96% of properties across Kent now have access to superfast broadband;
- Cleaner Air for Schools assemblies and banners delivered to 8 primary schools;
- Think Park Smart, an anti-idling education campaign for schools was launched in October 2019 and 8 primary schools were visited during Road Safety Week;
- Anti-idling social media campaign launched in January 2020 to support the installation of anti-idling road signs at three level crossings;
- The district's first electric taxi was registered with CCC in March 2019;
- Publishing a new anti-idling webpage at https://news.canterbury.gov.uk/airquality;
- Mitigation measures to reduce air pollution are considered for new developments with reference to the Kent and Medway Air Quality Partnership guidance for developments which may have an impact on the AQMA. Ensuring that 54 electric vehicle charging points are installed across six new commercial and industrial developments.

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

- Explore feasibility of introducing a low emission zone in Canterbury City Centre;
- Explore opportunities to enhance the sustainable transport hub at Canterbury West station, proposals include enlarged cycle storage and more ticket machines;
- Review taxi/private hire vehicle policy with a sliding scale of fees based on emissions so that the cleanest cars will pay the lowest fees (The consultation on the up-dated policy took place between 3 February and 30 April 2020 but there have been delays in progressing due to Covid-19);
- New Park and Ride contract to be renewed in October 2020 and include consideration of air quality issues (delays possible due to Covid-19);

- Installation of on street and off street electric charging points; and
- New car club operating from 5 car parks in Canterbury to reduce car ownership
- Installation of electric charging points, included within the new Transport Strategy

These measures will contribute towards increasing the public's awareness of air quality and encouraging positive behaviour change to assist with reducing transport emissions and reducing children's exposure to high levels of air pollution.

Canterbury City Council anticipates that the measures stated above and in Table 2.2 will achieve compliance in the majority of the AQMA in Canterbury city by 2023. Improvements in Herne AQMA are also anticipated by 2023, with the focus on reducing the concentration at DT28.

The principal challenges and barriers to implementation that Canterbury City Council anticipates facing are associated with Covid-19 causing delays in progress with measures in 2020.

Table 2.2 - Progress on Measures to Improve Air Quality

Measure No.	Measure	EU Category	EU Classification	Date Measure Introduced	Organisations involved	Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
1	Anti-idling education campaign followed by adoption of district wide anti idling enforcement powers	Traffic management	Anti-idling enforcement	October 2019	CCC	CCC	Number of promotions Number of Fixed Penalty Notices issued	NO2	Think Park Smart campaign for schools launched in October 2019 and 8 primary schools visited on 20 November 2019 during Road Safety Week. Anti-idling road signs at three level crossings installed in January 2020. Anti-idling communications campaign from January to mid March 2020.	Summer 2020	First phase successful, second phase on-going
2	Cleaner Air for Schools Campaign	Promote travel alternatives	Active travel	September 2019	CCC	CCC Defra Air Quality Grant	Number of awareness raising events	NO2	8 School assemblies delivered and schools presented with Clean Air Banners. Year 4 class at Sturry Primary School took part in a clean air walk to Sturry railway crossing in February 2020.	Ongoing	-
3	Promote travel alternatives such as walking and cycling, car share, park and pedal, Canterbury car club, cycle hire options	Promote travel alternatives	Active travel	November 2018	CCC KCC	CCC	Take up of park and pedal Canterbury Car club usage Cycle hire usage	NO2	Park and Pedal Wincheap is full and has a waiting list. Park and Pedal Sturry is very nearly ready to launch and awaiting final technical input. A new partner has been found for the car club which will launch later in 2020. We will be going out to tender later this year for a partner to operate a cycle hire scheme.	Ongoing	-
4	Support improvement in broadband infrastructure across the district enabling more home working and reducing vehicle movement into Canterbury	Promote travel alternatives	Encourage and facilitate Home working	November 2018	KCC	KCC	Annual update from KCC	NO2	To date 138,000 homes and businesses across Kent have had upgraded broadband infrastructure. 95% of properties across Kent now have access to superfast broadband.	2021	-
5	Review use of wood burning stoves and promote Defra “Ready to Burn” guide	Promote low emission plant	Regulations for fuel quality	November 2018	CCC	CCC	No of promotion events	PM10 and PM2.5	Wood burning article posted on the newsroom and social media in December 2019. Air quality webpages also include information on wood burning and links to Defra leaflets.	Ongoing	Campaign will run each winter
6	Work with event venues to restrict use of generators / equipment using solid fuel, diesel or petrol	Environmental permits	Permits based on environmental criteria	April 2018	CCC	CCC	No petrol / diesel generators in use	NO2	Events Implementation Strategy 2019-21 requires minimum environmental standards which restricts the use of generators/equipment using solid fuel, diesel or petrol. Action complete and KPI reported under action 35.	Ongoing	Monitoring of impact to inform review of strategy at end year 1
7	Promote and implement CCC staff travel plan	Promote travel alternatives	Workplace travel plans	October 2018	CCC	CCC	Reduction in number of staff driving to work	NO2	The travel plan will be reviewed as part of the office accommodation project which will result in significantly fewer parking spaces. Representatives from Active Mobility attended the staff conference in November 2019 to follow up on their ‘Let’s Talk Travel’ engagement event at the council offices in June 2019.	Ongoing	-
8	Continue to enforce industrial pollution control and nuisance legislation	Promoting Low Emission Plant	Regulations for fuel quality	April 2018	CCC	CCC	100% statutory inspections and no enforcement actions	NO2	All 9 statutory inspections were completed by 31.03.2020 and all processes were compliant.	Ongoing	-
9	Explore expansion of smoke control area	Promoting Low Emission Plant	Regulations for fuel quality	October 2019	CCC	CCC	Progress reported to AQ Steering Group	PM10 and PM2.5	Work has not started. Defra advice received to wait for the Environment Bill as there will be new enforcement powers within it.	2021	-
10	Explore feasibility of introducing a low emission zone in Canterbury City Centre	Traffic management	Road User Charging (RUC)/ Congestion charging	November 2018	CCC KCC	CCC KCC	Progress reported to AQ Steering Group	NO2	The proportion of trips made by car is falling, and the volume of all traffic on key routes in the city has flatlined since 2000 and is now decreasing. Demand to travel is being taken up by other modes of transport - principally bus and walking. Investigations into the	2020	-

Measure No.	Measure	EU Category	EU Classification	Date Measure Introduced	Organisations involved	Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
									feasibility of a LEZ or CAZ have been delayed but will shortly be progressing.		
11	Explore opportunities to enhance sustainable transport hub at Canterbury West station	Alternatives to private vehicle use	Rail based Park & Ride	November 2018	CCC	CCC	Progress reported to AQ Steering Group	NO2	Concept drawing for an integrated transport hub has been produced as a result of discussions between the council, bus company Stagecoach, train operator Southeastern and Network Rail. Proposals include increased space for a transport interchange, enlarged cycle storage and improvements to the station cafe/waiting room and more ticket machines. Potential area for taxis and passenger drop off and an access to the northern side of the station only possible when Network Rail's operational building is demolished in five to 10 years.	2020/21	-
12	Review Taxi / Private Hire Vehicle Policy licence fees. Promote low emission vehicles by ranking charges based on emission levels. (Lowest fees / lowest emissions)	Environmental permits	Permits as economic instrument	February 2020	CCC	CCC	Increase in number of taxis in cleaner emissions classes	NO2	2019/20 Fleet composition: 51% Euro 6 (up from 41% in 2018/19), 43% Euro 5 and 6% Euro 4. The consultation on the up-dated policy took place between 3 February and 30 April 2020 but due to COVID the planned drop-ins did not take place. Only 13 responses from licence holders were received. The consultations responses will be reviewed and a decision on undertaking another consultation will be taken later this year.	2020/21	-
13	Work with Quality Bus Partnership to Review bus routes and links to train stations Introduce low emission buses and technology Supporting socially necessary bus routes Contactless tickets for public transport network Improve technology and bus infrastructure such as boarders/ shelters/ signage	Traffic management	Strategic highway improvements	November 2018	KCC-led partnership with Bus operators	KCC Bus operators	Increase in number of buses in cleaner emissions classes	NO2	Fleet replacement - the remaining Euro 3 buses were replaced by Euro 5 buses in July 2019. The Park and Ride contract is now up for renewal and the specification for the new tender document includes options for electric buses, longer operating times and alternative routes. Improvements to bus stop infrastructure continues	Ongoing	-
14	Implement intelligent transport system such as: Linking traffic signals, interactive car parking signs, variable messages to give motorists up to date information	Traffic management	Congestion management	November 2018	KCC CCC	KCC CCC	Number of real time car parking signs giving accurate parking information	NO2	All real time car parking signs now give accurate parking information. Kent Car Share being promoted on VMS from January 2019 and Park and Ride being promoted from May 2019.	Ongoing	-
15	Incentivise car parking fees to reduce city centre car parking	Traffic management	Emission based parking or permit charges	June 2019	CCC	CCC	Increase in park and ride take-up	NO2	Parking strategy review undertaken and approved in February 2020. Increased parking charges in the city centre and 20% discount for electric and plug-in hybrid electric vehicles at all main car parks.	2020	-
16	Promote strategic routes for freight - link from CCC website to http://www.freightjourneyplanner.co.uk/	Freight and delivery management	Route management plans	September 2018	KCC	KCC	Reduction on HGVs using inappropriate routes	NO2	Link on CCC air quality website page created and referred to in relevant communications	Ongoing	-
17	Work with local freight companies and visiting coaches to promote driver education, training and engine cleaning to reduce emissions	Freight and delivery management	Other	November 2018	KCC	KCC	Number of local freight companies engaged	NO2	Planning phase of an initiative to local hauliers and visiting coaches	Ongoing	-
18	Promote the reporting of "dirty" freight vehicles to DfT (https://www.gov.uk/report-smoky-vehicle)	Freight and delivery management	Other	November 2018	CCC	CCC	DfT data on number of reported vehicles	NO2	Reporting of dirty vehicles form on CCC website. Annual statistics from DVSA show that around 600 reports are received each year but they cannot be broken down into geographic areas.	Ongoing	-

Measure No.	Measure	EU Category	EU Classification	Date Measure Introduced	Organisations involved	Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
19	Review of Park and Ride bus contract to include consideration of air quality issues - low emission buses, routes to train stations etc	Alternative to private vehicle use	Park and Ride	2019	CCC	CCC	New contract to include low emission buses	NO2	New contract to begin in October 2020 - may be subject to delay as a result of the Covid crisis.	2020	-
20	Promote all development sites to have electric charging points for electric / hybrid vehicles	Promote low emission transport	Low emission infrastructure	April 2018	CCC	CCC	Number of sites with ECPs permitted per year	NO2	Air quality mitigation is being secured for all new strategic development sites, including the installation of electric vehicles charging points, which will help to incentivise and accelerate the uptake of electric vehicles. Six applications for large commercial and industrial developments including 54 ECPs were permitted this year.	Ongoing	-
21	Undertake a programme of facilitating electric charging points	Promote low emission transport	Low emission infrastructure	July 2018	CCC	CCC	Number of Electric Charging Points installed	NO2	Installation of EV charging points is to be included within the new Transport Strategy. The recent installation of 9 on street chargers has proved very successful and has had a high take up. Usage is good and rising each month. Awaiting payment from OLEV for second tranche of off street chargers. Currently compiling requests for second tranche of on street chargers.	2020/21	No progress on persuading private operators to install chargers.
22	Increase park and ride capacity at New Dover Road, Wincheap and Sturry Road sites	Alternative to private vehicle use	Park and Ride	November 2018	CCC	CCC	Progress reported to AQ Steering Group	NO2	Planning application for the expansion of Wincheap P&R was considered in late 2019 but stalled owing to objections and a Judicial Review.. Provision of New Dover Road relocated and expanded P&R site is linked to Mountfield Park planning application. The Park and Ride site is to be available prior to the occupation of 1600 dwellings.	2023	It has not been possible to issue the planning consent owing to ongoing legal challenges so the trigger point cannot be estimated. Sturry Road expansion is likely to be funded through CIL and no start date is available.
23	Develop public realm improvements to increase walking opportunities	Transport planning and infrastructure	Walking cycle network	November 2018	CCC	CCC	Number of schemes completed	NO2	Remedial works to all three subways required and ordered for later this year. Repaving work in St Margaret's Street due to start later this year. Consultation on repaving works to St George's Street to begin shortly. Rising bollard scheme, designed as a counter terrorism initiative will also remove all extraneous vehicles from the city centre	2023	-
24	Develop programme of cycle route improvements	Transport planning and infrastructure	Walking cycle network	November 2018	CCC	CCC	Number of routes completed	NO2	Riverside and Crab and Winkle routes continue to be delayed by habitat surveys required prior to construction. We hope to start both schemes later this year.	Ongoing	-
25	Work with KCC to enhance bus lanes	Transport planning and infrastructure	Bus route improvements	November 2018	KCC	KCC	Improved bus journey times and increased patronage	NO2	Sturry Road mid section of bus lane - land acquisition and initial design work to begin later this year. Funding for the Sturry Road western section has not been identified.	Ongoing	Funding
26	Develop road network improvements	Traffic management	Strategic highway improvements	2019	KCC CCC	KCC CCC	Report on completion of works and change to traffic flows	NO2	Planning consent granted for A2 off slip road. Progress stalled because of problems with the Wincheap Park and Ride extension scheme.	March 2021	-
27	Investigate reducing traffic delays at level crossings and minimise time that level crossing gates are down	Transport planning and infrastructure	Walking cycle network	November 2018	Network rail	Network rail	Reduced waiting time	NO2	Network Rail currently seeking funding to go towards two trackside detectors at £10k each	Summer 2023	-

Measure No.	Measure	EU Category	EU Classification	Date Measure Introduced	Organisations involved	Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
28	Deliver Herne relief road	Traffic Management	Strategic highway improvements	2019/20	KCC	KCC	Reduction in volume of traffic through Herne	NO2	This scheme is linked to planning consent for sites in Herne and Hillborough. Funding is part secured.	2023	-
29	Reporting of air quality in Corporate Annual Report and the Annual Status Report on the assessment of air pollution in the area	Policy guidance and development control	Other policy	July 2018	CCC	CCC	Reports published	NO2	Annual monitoring report will be included in corporate annual report which will go to Committee in July	Ongoing	-
30	Introduce and implement measures to improve air quality in all strategies, when each strategy is reviewed	Policy guidance and development control	Other policy	November 2018	CCC	CCC	Number of strategies having due regard to air quality	NO2	Central to the review of the Parking Strategy and the consultation on the draft Licensing Policy	Ongoing	-
31	Work with KMAQP to introduce a county wide Energy & Low Emissions Strategy	Policy guidance and development control	Other policy	November 2018	KCC/CCC & Kent LAs	KCC/CCC & Kent LAs	Development of guidance and strategy	NO2	Kent and Medway Energy and Low Emission Strategy adopted and being implemented	December 2019	-
32	Embed air quality in the Procurement process especially relating to vehicles / plant. For CCC vehicles and plant as well as those related to contracts	Promote low emission transport	Vehicle procurement	November 2018	CCC	CCC	Number of contracts issued with air quality as part of contract	NO2	Alternative fuel options investigated when purchasing or leasing vehicles. Current contract information for all contracted services with large vehicle fleets gathered and contract managers informed of new vehicle emissions standards (Euro 4 petrol and Euro 6 diesel). Officers are asked to consider battery electric vehicles when leases expire. Currently 1 officer has swapped to a battery electric vehicle. Park and Ride will either be battery electric vehicles if these can be procured within budget or another fuel type that will meet low emissions. The Waste vehicles specification will consider low emissions as preferable. We will continue to discuss emissions of vehicles and air quality with client officers as new procurements occur.	Ongoing	-
33	Ensure permits and licences issued by the Council for Markets, Concessions and Events include standard terms and conditions to ensure good air quality.	Environmental permits	Permits based on environmental criteria	November 2018	CCC	CCC	No of permits and licensed issued reported annually	NO2	Events Implementation Strategy 2019-21 requires minimum environmental standards which restricts the use of generators/equipment using solid fuel, diesel or petrol. Consistent standard terms and conditions are applied to all permits and licenses.	Ongoing	-
34	Work with neighbouring authorities on Kent wide Energy and Low Emission Strategy	Policy guidance and development control	Area wide strategies to reduce emissions	November 2018	KCC	KCC	KPIs in countywide strategy	NO2	Kent and Medway Energy and Low Emission Strategy adopted and KCC travel plan monitoring officer appointed.	December 2019	-
35	Work with stakeholders on awareness raising projects	Public Information	Other	July 2018	CCC / Local universities	CCC Defra Air Quality Grant	Number of projects delivered	NO2	Promotion of University of Kent research on anti-idling messages in a press release on 27 June 2019. Anti-idling road signs installed at St Stephens, St Dunstans and Sturry railway crossings in January 2020. Working with Herne Parish Council and the University of Kent on another project in 2020/21.	Ongoing	-
36	Dedicated web page with graphics, maps, information and links.	Public Information	Part of promotional campaign	November 2018	CCC	CCC	Number of views	NO2	Webpages updated and improved with a new anti-idling webpage.	March 2019	-

Measure No.	Measure	EU Category	EU Classification	Date Measure Introduced	Organisations involved	Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
37	Promotion of national initiatives	Public Information	Part of promotional campaign	November 2018	CCC	CCC	Number of promotions	NO2	Clean Air Day promotion on social media on 20 June 2019. Car Free Day promotion on social media on 22 September 2019.	Ongoing	-
38	Promotion of local initiatives	Public Information	Part of promotional campaign	November 2018	CCC	CCC	Number of promotions	NO2	An air quality communications plan has been developed. Internal communication on what help there is available to employees to clean up the air in the city on 10 April 2019. New electric vehicle charging points article on newsroom and on social media on 20 June 2019. Air Quality Grant Award article on newsroom and social media on 19 March 2020. Increased messaging around local initiatives with anti-idling, Clean Air For Schools and Think Park Smart from early January to mid March.	Ongoing	-

Note: Measures have been colour-coded based on the efficacy of the approach:

Most Effective | Somewhat Effective | Least Effective

$PM_{2.5}$ – 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.

Canterbury City Council does not currently undertake any monitoring of $PM_{2.5}$. However, PM_{10} monitoring is undertaken in the district and can therefore be used to estimate $PM_{2.5}$ concentrations, as recommended in box 7.7 of LAQM.TG(16). The national factor of 0.7 was applied to the 2019 PM_{10} annual mean concentration to estimate the $PM_{2.5}$ annual mean concentration. The estimated $PM_{2.5}$ annual mean concentration, based on the PM_{10} monitored data was calculated as 11.8µg/m^3 for 2019, which is well below the $PM_{2.5}$ obligatory standard of 25µg/m^3.

The current Defra 2019 background maps for Canterbury City Council (2017 based[4]) show that all background concentrations of $PM_{2.5}$ are well below the 2020 annual mean AQS objective for $PM_{2.5}$. The highest concentration is predicted to be 10.6µg/m^3 within the 1 x 1km grid square with the centroid grid reference of 615500, 158500. This point is located close to Wincheap Roundabout within the Canterbury 3 AQMA, an area known for traffic congestion.

The Public Health Outcomes Framework data tool[5] compiled by Public Heath England quantifies the mortality burden of $PM_{2.5}$ within England on a county and local authority scale (latest available data: 2018). The 2018 fraction of mortality attributable to $PM_{2.5}$ pollution in Canterbury is 5.3%. This is below the fractions reported for Kent and the South East region of England which are both 5.6% but slightly higher than the fraction across England which is 5.2%.

[4] Defra Background Mapping data for local authorities (2017-based), available online at https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2017

[5] Public Health Outcomes Framework, Public Health England. data tool available online at https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/3/gid/1000043/pat/6/par/E12000008/ati/201/are/E07000106/iid/30101/age/230/sex/4/cid/4/page-options/eng-vo-0_eng-do-0_ovw-do-0_cin-ci-4_car-do-0

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

Summary of Monitoring Undertaken

Automatic Monitoring Sites

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

Canterbury City Council undertook automatic (continuous) monitoring at 2 sites during 2019. Table A.1 in Appendix A shows the details of the sites. National monitoring results are available at https://uk-air.defra.gov.uk/networks/search-site-info.

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.

Non-Automatic Monitoring Sites

Canterbury City Council undertook non- automatic (passive) monitoring of NO_2 at 59 sites during 2019. Table A.2 in Appendix A shows the details of the sites.

In January 2019, one new diffusion tube was commissioned at Canterbury bus station (DT60) and one diffusion tube was relocated (DT23 was moved to the façade of the nearest building at the beginning of the monitoring period for 2019, therefore now representing relevant exposure).

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[6], “annualisation” (where the data capture falls below 75%), and distance correction[7]. Further details on adjustments are provided in Appendix C.

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

Nitrogen Dioxide (NO_2)

Table A.3 in Appendix A compares the ratified and adjusted monitored NO_2 annual mean concentrations for the past 5 years with the air quality objective of 40µg/m^3. Note that the concentration data presented in Table A.3 represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the full 2019 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 includes distance corrected values where relevant, i.e. those exceeding, or within 10% of, the AQS Objective of 40µg/m^3.

Table A.4 in Appendix A compares the ratified continuous monitored NO_2 hourly mean concentrations for the past 5 years with the air quality objective of 200µg/m3, not to be exceeded more than 18 times per year.

The monitoring results from the urban background Chaucer Technology School automatic monitoring station (CM1) show that NO_2 concentrations were well below the 1-hour and annual mean objective levels during the monitoring years 2015-2019. The trend at this site shows that annual mean concentrations have remained at similar values to 2018 (reporting 12.3µg/m^3 in 2019) which is equivalent to levels in 2015. There was a slight increase in results in 2016 and 2017, where concentrations increased to 14µg/m^3 and 14.9µg/m^3, respectively.

The roadside Military Road automatic monitoring station (CM3), which is located within the current AQMA, recorded much higher concentrations. Nonetheless, the annual mean NO_2 AQS objective has been met at this site for the past 5 years. Similar to CM1, annual mean concentrations peaked in 2016 and 2017 but have decreased to 27µg/m^3 in 2018 and decreased further to 25.3µg/m^3 in 2019. These concentrations are also similar to levels in 2015 at 27.8µg/m^3. A small decrease has been noticed since 2018 but further monitoring at both sites will help determine whether the trends are shifting downwards. Figure A.1 shows the trend in automatic monitoring results over the past five years.

Figure A.2 and Figure A.3 in Appendix A show trends in annual mean NO_2 concentrations measured at non-automatic sites inside the AQMAs. The 2019 diffusion

tube results show that overall levels of NO_2 across the district have remained similar to concentrations reported in 2018, with some locations improving marginally and others worsening. The monitoring results indicate that the annual mean NO_2 AQS objective was exceeded at the following six locations in 2019, three more exceedances than 2018:

- DT1 at 92b Broad Street, Canterbury (Canterbury 3 AQMA)
- DT4 at Old Tannery, Rheims Way, Canterbury (Canterbury 3 AQMA)
- DT27 at 44 Broad Street, Canterbury (Canterbury 3 AQMA)
- DT15 at 284 Wincheap, Canterbury (Canterbury 3 AQMA) – *new exceedance*
- DT23 at 10-16 Wincheap, Canterbury (Canterbury 3 AQMA) – *new exceedance following change in location*
- DT28 at 18 Herne Street, Herne (Herne 1 AQMA) – *new exceedance*

The monitoring locations DT1, DT4 and DT27 are not representative of exposure. Therefore, the NO_2 fall-off with distance calculator was used to estimate the NO_2 concentration at the nearest location with relevant exposure for the three monitoring locations. Following distance corrections, the annual mean NO_2 concentrations at receptors closest to DT1 remained above the annual mean NO_2 AQS objective (43.2µg/m^3). Following distance-correction, DT27 was reduced to within 10% of the AQS objective (36.5µg/m^3) and DT4 reduced to below the AQS objective, reporting 26.1µg/m^3 at the nearest receptor location. The NO_2 fall-off with distance correction calculation for these three locations is detailed in Appendix C.

Trends over the past five years at DT28, located within the Herne AQMA, have shown a gradual increase in NO_2 concentrations whilst remaining below the AQS objective of 40µg/m^3; however, this location exceeded the AQS objective in 2019, recording a concentration of 41.3µg/m^3 (see Figure A.3).

It is worth noting that DT23 was relocated in January 2019 to the façade of a building of relevant exposure, and is now situated further from the road but at a slightly lower height. Previous years have used a correction factor for the distance to the nearest receptor, which has not been necessary this year. In 2018, DT23 recorded a concentration of 48.5µg/m^3, which was reduced to 37.0µg/m^3 following correction for distance to the nearest receptor. The new diffusion tube location on the façade of a

building gives a more accurate representation of the concentration experienced at the receptor; this was 44.1µg/m^3 in 2019.

In 2019, DT15 recorded an exceedance where it had not in 2018. This location recorded exceedances for the four years previous to 2018, but reduced to 39.0µg/m^3 in 2018. DT15 returned to above the AQS Objective in 2019, recording 42.5µg/m^3, which is lower than the last exceedance in 2017 of 48.5µg/m^3.

Figure A.4 shows trends in annual mean NO_2 concentrations measured at non-automatic sites outside the AQMAs. The monitoring results indicate that the annual mean NO_2 AQS objective was not exceeded at any location in 2019 and all sites reported concentrations that were less than 36µg/m^3 (10% of the annual mean NO_2 AQS objective).

The annual mean NO_2 concentration did not exceed 60µg/m^3 at any monitoring location and therefore exceedances of the NO_2 1-hour mean AQS objective (200µg/m^3) are unlikely at these locations. Additionally, no exceedances of the 1-hour mean AQS objective were noted at either of the continuous monitoring sites, CM1 and CM3 during 2019.

Particulate Matter (PM_{10})

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

Table A.6 in Appendix A compares the ratified continuous monitored PM_{10} 24-Hour mean concentrations for the past 5 years with the air quality objective of 50µg/m^3, not to be exceeded more than 35 times per year.

Both annual mean and 24-hour mean PM_{10} AQS objectives have been met in all of the past five years.

Figure A.5 in Appendix A shows trends in annual mean PM_{10} concentrations measured at the Canterbury site. It can be seen that the annual mean PM_{10} concentration was stable at 17µg/m^3 in 2015, 2016 and 2017. The 2018 reported annual mean PM_{10} concentration increased to 21µg/m^3, but then returned to 17µg/m^3 in 2019 which is well below the AQS objective of 40µg/m^3.

Figure A.6 in Appendix A shows the number of exceedances of the PM_{10} 24-hour mean air quality objective of 50µg/m^3. It can be seen that the number of exceedances was

stable at two exceedances between 2015 and 2017, decreasing to one exceedance in 2018. The number of exceedances increased to three in 2019, which is still well below the 35 exceedances per year limit.

Appendix A: Monitoring Results

Table A.1 - Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
CM1	Chaucer Technology School	Urban background	616186	157320	NO_2, PM_{10}	NO	Chemiluminescence, TEOM	0	26.2	2.6
CM3	Military Road	Roadside	615401	158169	NO_2	YES (Canterbury 3)	Chemiluminescence	0	3.2	1.75

Notes:

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

(2) N/A if not applicable

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

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) (1,2)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
DT1	92b Broad Street	ROADSIDE	615295	158001	NO2	YES (Canterbury 3)	0.4	1.4	NO	2
DT6	75 Sturry Road	ROADSIDE	615655	158696	NO2	YES (Canterbury 3)	9.5	3.7	NO	2.6
DT7	31 St Dunstans	ROADSIDE	614355	158267	NO2	YES (Canterbury 3)	0.2	2.1	NO	2.3
DT8	Albany House 115 High St, Herne Bay	ROADSIDE	617785	168231	NO2	NO	1.8	0.4	NO	2.6
DT9	100 High Street, Whitstable	ROADSIDE	610686	166421	NO2	NO	2.7	0.7	NO	2.95
DT11	28 High Street, Littlebourne	ROADSIDE	620909	157426	NO2	NO	4.5	1.85	NO	2.1
DT2	95 Wincheap	KERBSIDE	614229	157091	NO2	YES (Canterbury 3)	1	0.4	NO	2.6
DT5	Nr Bus Stop Rheims Way	ROADSIDE	614043	158016	NO2	YES (Canterbury 3)	40	3.3	NO	2.7
DT13(4)	Spring Lane, Canterbury	URBAN BACKGROUND	616186	157320	NO2	NO	0	0	YES	2.7
DT3	48 North Lane	ROADSIDE	614675	158219	NO2	YES (Canterbury 3)	2.4	0.3	NO	2.2
DT4	Old Tannery Rheims Way	ROADSIDE	614410	157702	NO2	YES (Canterbury 3)	11	0.6	NO	2.6
DT10	Kingsmead Road, Canterbury	ROADSIDE	615123	158630	NO2	NO	97	1.7	NO	2

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) (1,2)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
DT27	44 Broad Street	ROADSIDE	615295	158030	NO2	YES (Canterbury 3)	2	0.6	NO	2.4
DT12	Green Island, Military Road	ROADSIDE	615390	158180	NO2	YES (Canterbury 3)	0	1.75	NO	2.95
DT14	Non Conformist Burial Ground, Wincheap,	ROADSIDE	614065	156976	NO2	YES (Canterbury 3)	0	1.75	NO	2.55
DT15	284 Wincheap, Canterbury	ROADSIDE	613902	156851	NO2	YES (Canterbury 3)	0	1.7	NO	2.6
DT16(4)	Military Road Monitoring Station	ROADSIDE	615401	158169	NO2	YES (Canterbury 3)	0	3.2	YES	1.4
DT17	170 Sturry Road	ROADSIDE	616169	159067	NO2	YES (Canterbury 3)	0	2	NO	2.45
DT18	25 Old Dover Road	KERBSIDE	615106	157382	NO2	YES (Canterbury 3)	0	1.8	NO	2.4
DT19	72 St Dunstans	ROADSIDE	614454	158180	NO2	YES (Canterbury 3)	0	1.8	NO	2.6
DT20	St Mildred Court, St Peter S Place	ROADSIDE	614479	157857	NO2	YES (Canterbury 3)	2	2.8	NO	2
DT21	The Old Raj, 25-26 North Lane	ROADSIDE	614688	158251	NO2	YES (Canterbury 3)	1	1.1	NO	2.45
DT22	Opp 9 St Martin S Hill	ROADSIDE	615851	157672	NO2	NO	0	1.2	NO	2.6
DT23(3)	Opp 10-16 Wincheap, Canterbury,	KERBSIDE	614501	157338	NO2	YES (Canterbury 3)	2.6	0.5	NO	2.7

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) (1,2)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
DT24	Jct Of Sturry Hill/field Way,	ROADSIDE	617748	160331	NO2	NO	0	1.3	NO	2.45
DT26	11 Herne Street, Herne	ROADSIDE	618242	165948	NO2	YES (Herne 1)	5.7	1	NO	2.9
DT28	18 Herne Street, Herne	ROADSIDE	618241	165928	NO2	YES (Herne 1)	0	0.9	NO	2.4
DT29	Opp 247 Canterbury Road, Herne	ROADSIDE	618125	166309	NO2	NO	18	1.65	NO	2.16
DT31	Lay By On A2990 Thanet Way, Herne Bay,	ROADSIDE	617217	167155	NO2	NO	20	3.45	NO	2.82
DT32	66 London Road	KERBSIDE	614055	158242	NO2	NO	2	0.55	NO	2.65
DT30	O/s 230 Canterbury Road, Herne Bay	KERBSIDE	618073	167085	NO2	NO	4.4	0.64	NO	2.23
DT33	Opp 17 Nackington Road, Canterbury	KERBSIDE	615777	156402	NO2	NO	22.4	0.8	NO	2.4
DT34	Falstaff Hotel 8-10 St Dunstans, Canterbury	ROADSIDE	614541	158137	NO2	YES (Canterbury 3)	0.5	5.2	NO	2.4

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) (1,2)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
DT35	47 New Dover Road, Canterbury	ROADSIDE	615645	157192	NO2	NO	24	0.3	NO	2.4
DT36	Westside Apts, Station Road West, Canterbury	KERBSIDE	614522	158240	NO2	NO	2.6	0.3	NO	2.6
DT37	Red House Nursing Home, A2050, Canterbury	ROADSIDE	613621	158073	NO2	YES (Canterbury 3)	33.3	2.2	NO	2.3
DT38	Ten Perch Road, Canterbury	KERBSIDE	613722	156784	NO2	NO	103	0.6	NO	2.5
DT39	1 Pippins Place, Ashford Rd, Thanington	ROADSIDE	612923	156682	NO2	NO	9.6	1.5	NO	2.4
DT40	155/157 Cromwell Road, Whitstable	KERBSIDE	611070	166555	NO2	NO	6.4	0.4	NO	2.3
DT41	Old Thanet Way Eastbound, Whitstable	ROADSIDE	610696	164570	NO2	NO	110.5	2.1	NO	2.2
DT42	Reeves Way Roundabout, Chestfield	ROADSIDE	613484	166687	NO2	NO	73.8	2.6	NO	2.3

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) (1,2)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
DT43	Bullockstone Road, Herne Bay	KERBSIDE	617091	165749	NO2	NO	22.4	0.9	NO	2.3
DT44	17 New Dover Road, Canterbury	KERBSIDE	615445	157408	NO2	NO	3.7	0.4	NO	2.3
DT45	St Gregory's Court, Chaucer Road, Canterbury	ROADSIDE	615749	158342	NO2	YES (Canterbury 3)	17.8	1.6	NO	2.4
DT46	Westmeads School, Cromwell Road, Whitstable	SUBURBAN	611032	166712	NO2	NO	4	2.2	NO	2.03
DT47	23 Harbour Street, Whitstable	ROADSIDE	610665	166785	NO2	NO	0	3.6	NO	2.43
DT48	9 - 11 High Street, Whitstable	ROADSIDE	610647	166658	NO2	NO	0	2.1	NO	2.23
DT49	St Alphege School, Oxford Street, Whitstable	ROADSIDE	610670	166252	NO2	NO	3.5	1.8	NO	2.36
DT50	53 Shalloak Road, Broad Oak	KERBSIDE	616728	161469	NO2	NO	2.2	0.8	NO	1.91

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) (1,2)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
DT51	Island Road, Rear of 5 Ashendene Grove, Sturry	ROADSIDE	618487	160927	NO2	NO	7	1.5	NO	2.24
DT52	Island Road/The Poplars, Hersden	ROADSIDE	620633	162100	NO2	NO	7	1.32	NO	2.09
DT53	Sturry Court Mews, Sturry Hill, Canterbury	ROADSIDE	617674	160475	NO2	NO	5.2	1.4	NO	2.25
DT54	St Johns Place, Canterbury	ROADSIDE	615152	158288	NO2	NO	0	1.3	NO	2.27
DT55	Old Ruttington Lane, Canterbury	KERBSIDE	615402	158088	NO2	NO	0	1	NO	2.22
DT56	Havelock Street, Canterbury	ROADSIDE	615426	158052	NO2	NO	0	1.4	NO	2.07
DT57	St Stephen's Road South, Canterbury	KERBSIDE	614927	158813	NO2	NO	12	0.4	NO	2.23
DT58	St Stephen's Road, North, Canterbury	KERBSIDE	614867	158899	NO2	NO	13	0.3	NO	2.23
DT59	Herne Bay Infants' School, Stanley Road, Herne Bay	ROADSIDE	617879	167895	NO2	NO	3.5	2.1	NO	2.34

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) (1,2)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
DT60	Canterbury Bus Station	ROADSIDE	615044	157557	NO2	NO	N/A	1.7	NO	2.5

Notes:

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

(2) N/A if not applicable.

(3) DT23 was relocated in January 2019

(4) Triplicate site

Table A.3 – Annual Mean NO_2 Monitoring Results

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	NO_2 Annual Mean Concentration (µg/m^3) (3) (4)				
							2015	2016	2017	2018	2019
CM1	616186	157320	Urban background	Automatic	99%	99%	11	14	14.9	12	12.3
CM3	615401	158169	Roadside	Automatic	97%	97%	27.8	33	37.2	27	25.3
DT1	615295	158001	ROADSIDE	Diffusion Tube	50%	50%	**43.4**	**49.2**	**51.9**	**45.1**	**45.1**
DT6	615655	158696	ROADSIDE	Diffusion Tube	100%	100%	31.5	33.6	32.9	29.2	29.3
DT7	614355	158267	ROADSIDE	Diffusion Tube	83%	83%	24.3	30.3	31.7	26.2	25.2
DT8	617785	168231	ROADSIDE	Diffusion Tube	100%	100%	26.3	28.6	28.7	25.0	25.0
DT9	610686	166421	ROADSIDE	Diffusion Tube	75%	75%	26.7	30.0	27.0	23.8	25.2
DT11	620909	157426	ROADSIDE	Diffusion Tube	100%	100%	17.2	20.6	21.8	18.0	19.2
DT2	614229	157091	KERBSIDE	Diffusion Tube	100%	100%	30.2	33.9	33.1	29.3	28.3
DT5	614043	158016	ROADSIDE	Diffusion Tube	83%	83%	24.1	25.9	29.3	27.1	29.6
DT13(6)	616186	157320	URBAN BACKGROUND	Diffusion Tube	100%	100%	11.1	15.2	15.2	11.7	11.9
DT3	614675	158219	ROADSIDE	Diffusion Tube	100%	100%	38.2	36.2	36.9	34.1	32.6
DT4	614410	157702	ROADSIDE	Diffusion Tube	100%	100%	**49.9**	**49.6**	**50.5**	**43.9**	**44.6**
DT10	615123	158630	ROADSIDE	Diffusion Tube	100%	100%	24.4	26.7	28.4	24.3	25.8

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	NO_2 Annual Mean Concentration ($\mu g/m^3$) (3) (4)				
							2015	2016	2017	2018	2019
DT27	615295	158030	ROADSIDE	Diffusion Tube	100%	100%	**52.3**	**48.2**	**49.0**	**46.3**	**45.9**
DT12	615390	158180	ROADSIDE	Diffusion Tube	100%	100%	39.0	**42.1**	**43.2**	37.5	38.3
DT14	614065	156976	ROADSIDE	Diffusion Tube	83%	83%	**44.3**	**43.3**	**43.5**	39.4	39.8
DT15	613902	156851	ROADSIDE	Diffusion Tube	100%	100%	**48.8**	**49.0**	**48.5**	39.0	**42.5**
DT16(6)	615401	158169	ROADSIDE	Diffusion Tube	100%	100%	25.5	33.6	37.1	27.3	26.0
DT17	616169	159067	ROADSIDE	Diffusion Tube	92%	92%	38.3	**42.0**	**41.4**	39.4	38.6
DT18	615106	157382	KERBSIDE	Diffusion Tube	100%	100%	35.3	38.2	37.0	34.1	33.1
DT19	614454	158180	ROADSIDE	Diffusion Tube	100%	100%	**41.9**	**43.9**	**42.7**	38.1	38.8
DT20	614479	157857	ROADSIDE	Diffusion Tube	67%	67%	31.4	38.6	34.5	33.6	30.6
DT21	614688	158251	ROADSIDE	Diffusion Tube	92%	92%	25.3	29.7	27.0	26.3	25.7
DT22	615851	157672	ROADSIDE	Diffusion Tube	50%	50%	30.4	35.7	39.6	32.8	31.2
DT23	614501	157338	KERBSIDE	Diffusion Tube	100%	100%	**63.0**	**57.6**	**63.4**	**48.5**	**44.1**(5)
DT24	617748	160331	ROADSIDE	Diffusion Tube	75%	75%	29.7	31.4	32.7	26.5	29.2
DT26	618242	165948	ROADSIDE	Diffusion Tube	92%	92%	25.9	28.3	28.4	24.8	24.6
DT28	618241	165928	ROADSIDE	Diffusion Tube	100%	100%	28.0	31.5	38.2	39.9	**41.3**

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	NO_2 Annual Mean Concentration ($\mu g/m^3$) (3) (4)				
							2015	2016	2017	2018	2019
DT29	618125	166309	ROADSIDE	Diffusion Tube	100%	100%	19.7	21.8	20.6	19.2	20.2
DT31	617217	167155	ROADSIDE	Diffusion Tube	92%	92%	29.0	29.4	30.3	26.7	28.0
DT32	614055	158242	KERBSIDE	Diffusion Tube	92%	92%	28.8	31.3	31.9	25.2	28.1
DT30	618073	167085	KERBSIDE	Diffusion Tube	100%	100%	26.4	28.9	30.0	25.3	24.6
DT33	615777	156402	KERBSIDE	Diffusion Tube	67%	67%	-	24.0	23.6	20.8	23.5
DT34	614541	158137	ROADSIDE	Diffusion Tube	100%	100%	-	33.4	30.3	29.1	30.7
DT35	615645	157192	ROADSIDE	Diffusion Tube	75%	75%	-	-	33.7	32.6	31.9
DT36	614522	158240	KERBSIDE	Diffusion Tube	83%	83%	-	-	27.5	28.2	27.6
DT37	613621	158073	ROADSIDE	Diffusion Tube	100%	100%	-	-	24.3	21.3	23.1
DT38	613722	156784	KERBSIDE	Diffusion Tube	100%	100%	-	-	22.9	27.2	24.2
DT39	612923	156682	ROADSIDE	Diffusion Tube	100%	100%	-	-	26.0	22.8	22.7
DT40	611070	166555	KERBSIDE	Diffusion Tube	83%	83%	-	-	17.3	17.1	17.9
DT41	610696	164570	ROADSIDE	Diffusion Tube	100%	100%	-	-	**40.8**	29.1	29.7
DT42	613484	166687	ROADSIDE	Diffusion Tube	100%	100%	-	-	27.8	24.4	23.9
DT43	617091	165749	KERBSIDE	Diffusion Tube	92%	92%	-	-	12.8	12.8	12.6

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	NO_2 Annual Mean Concentration ($\mu g/m^3$) (3) (4)				
							2015	2016	2017	2018	2019
DT44	615445	157408	KERBSIDE	Diffusion Tube	83%	83%	-	-	36.7	36.4	35.2
DT45	615749	158342	ROADSIDE	Diffusion Tube	100%	100%	-	-	21.9	16.7	16.9
DT46	611032	166712	SUBURBAN	Diffusion Tube	75%	75%	-	-	-	16.0	18.3
DT47	610665	166785	ROADSIDE	Diffusion Tube	100%	100%	-	-	-	19.0	18.9
DT48	610647	166658	ROADSIDE	Diffusion Tube	67%	67%	-	-	-	26.3	23.8
DT49	610670	166252	ROADSIDE	Diffusion Tube	100%	100%	-	-	-	21.1	20.9
DT50	616728	161469	KERBSIDE	Diffusion Tube	100%	100%	-	-	-	22.9	20.0
DT51	618487	160927	ROADSIDE	Diffusion Tube	100%	100%	-	-	-	31.6	31.2
DT52	620633	162100	ROADSIDE	Diffusion Tube	92%	92%	-	-	-	19.4	19.3
DT53	617674	160475	ROADSIDE	Diffusion Tube	100%	100%	-	-	-	31.1	35.3
DT54	615152	158288	ROADSIDE	Diffusion Tube	67%	67%	-	-	-	15.2	15.2
DT55	615402	158088	KERBSIDE	Diffusion Tube	67%	67%	-	-	-	16.8	16.6
DT56	615426	158052	ROADSIDE	Diffusion Tube	92%	92%	-	-	-	18.8	20.4
DT57	614927	158813	KERBSIDE	Diffusion Tube	100%	100%	-	-	-	29.2	30.1
DT58	614867	158899	KERBSIDE	Diffusion Tube	83%	83%	-	-	-	25.0	22.8

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	NO_2 Annual Mean Concentration ($\mu g/m^3$) (3) (4)				
							2015	2016	2017	2018	2019
DT59	617879	167895	ROADSIDE	Diffusion Tube	100%	100%	-	-	-	15.2	15.3
DT60	615044	157557	ROADSIDE	Diffusion Tube	83%	83%	-	-	-	-	34.6

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

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

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

Notes:

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

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

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

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

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

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

(5) DT23 was relocated in January 2019 to the façade of a building and further from the road therefore the 2019 concentration cannot be compared with previous years

(6) Triplicate sites

Figure A.1 - Trends in Annual Mean NO_2 Concentrations: Automatic Monitoring Sites

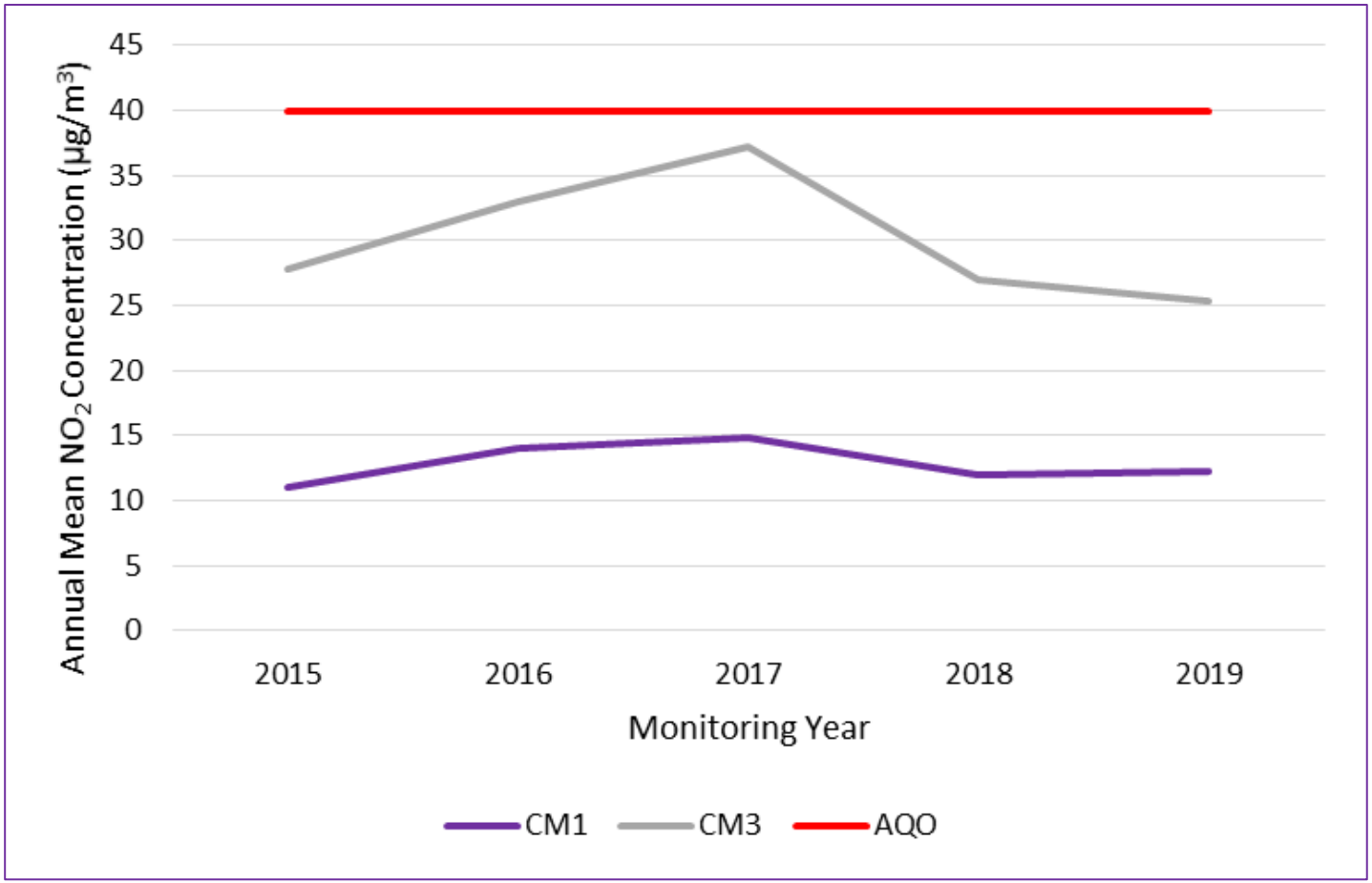
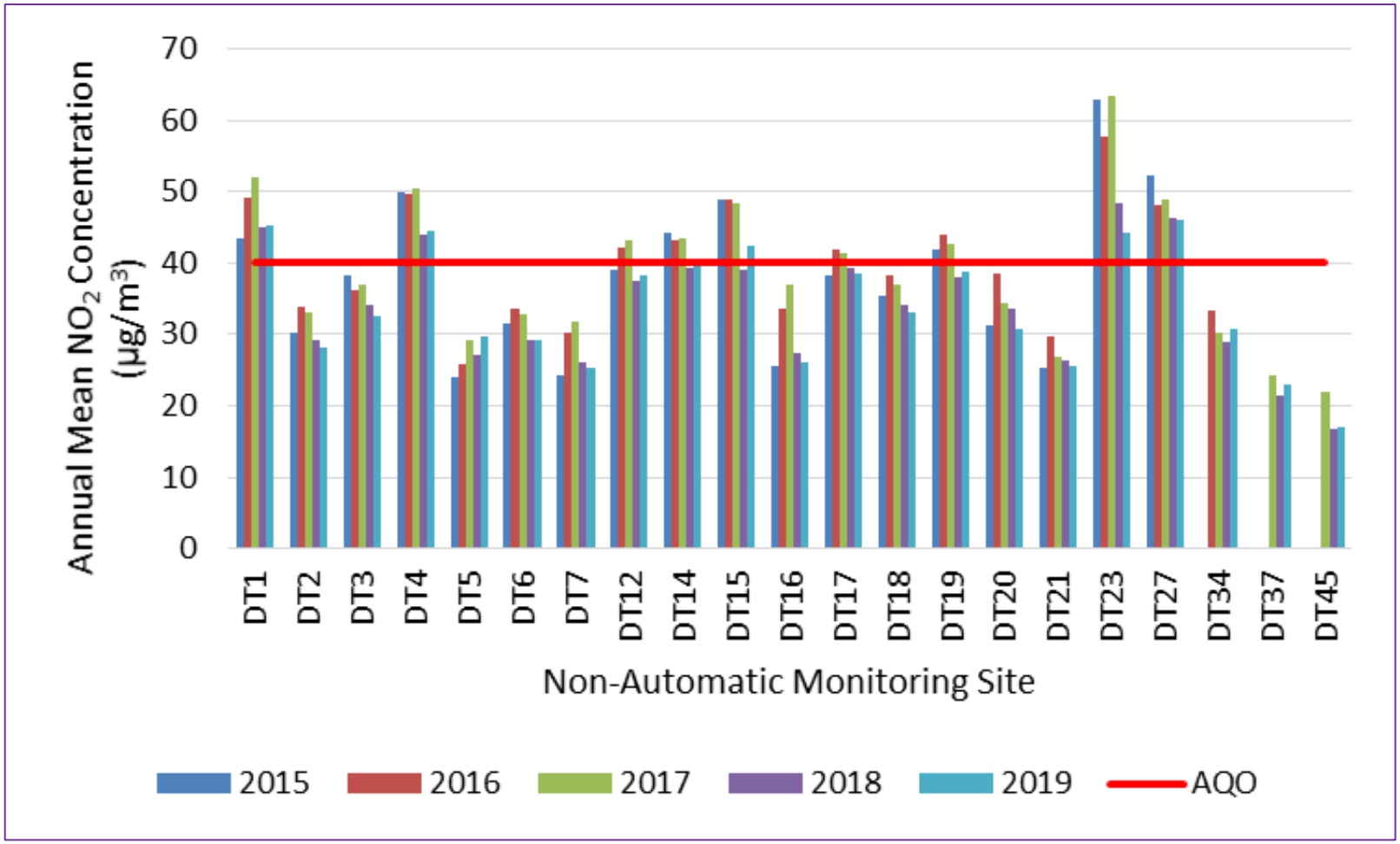


Figure A.2 - Trends in Annual Mean NO_2 Concentrations: Canterbury City AQMA



Note: DT23 has been moved to the façade of a building, further from the road to reflect relevant exposure. The concentration reported will therefore be lower than previous years.

Figure A.3 - Trends in Annual Mean NO_2 Concentrations: Herne AQMA

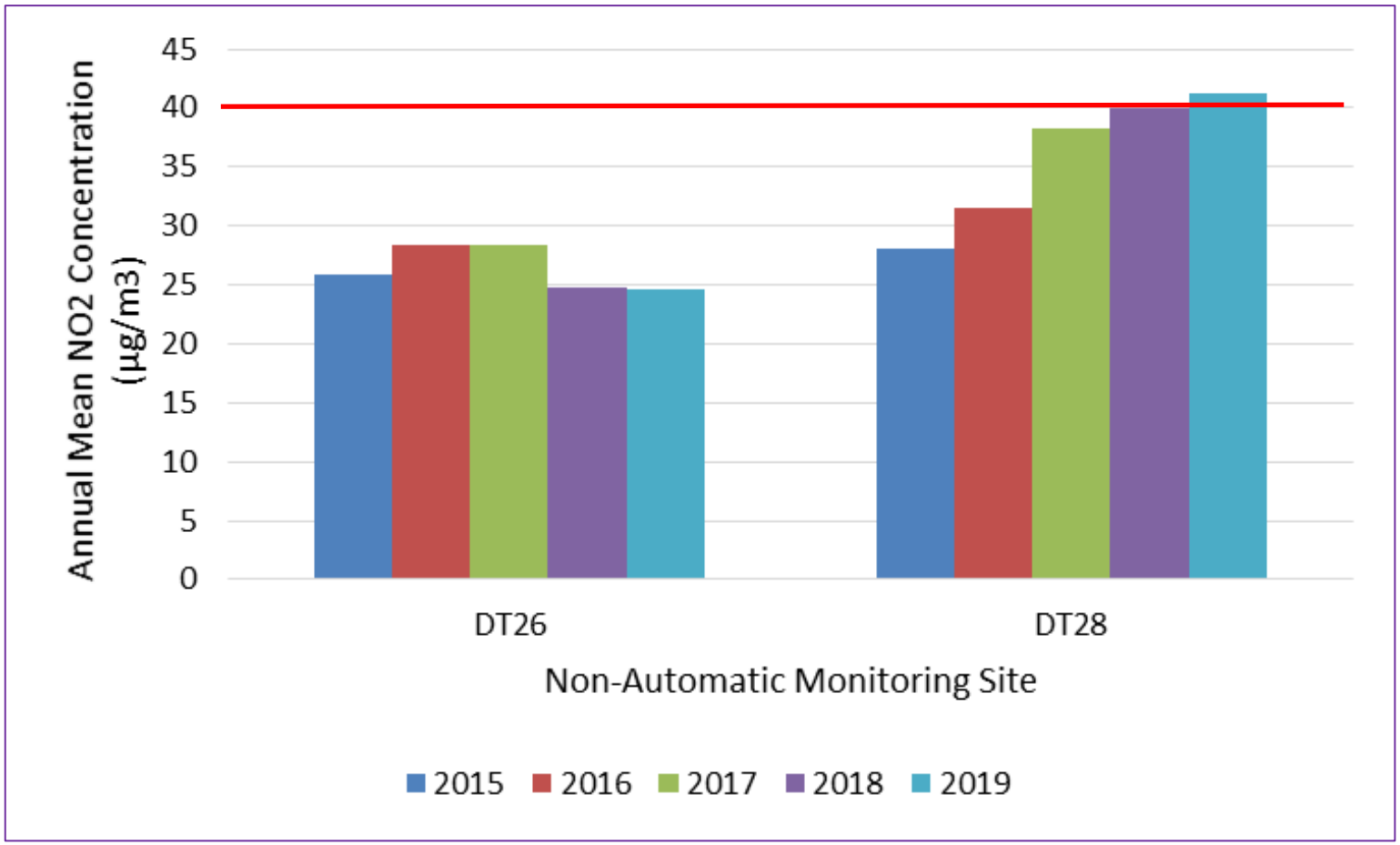


Figure A.4 - Trends in Annual Mean NO_2 Concentrations: Outside the AQMAs

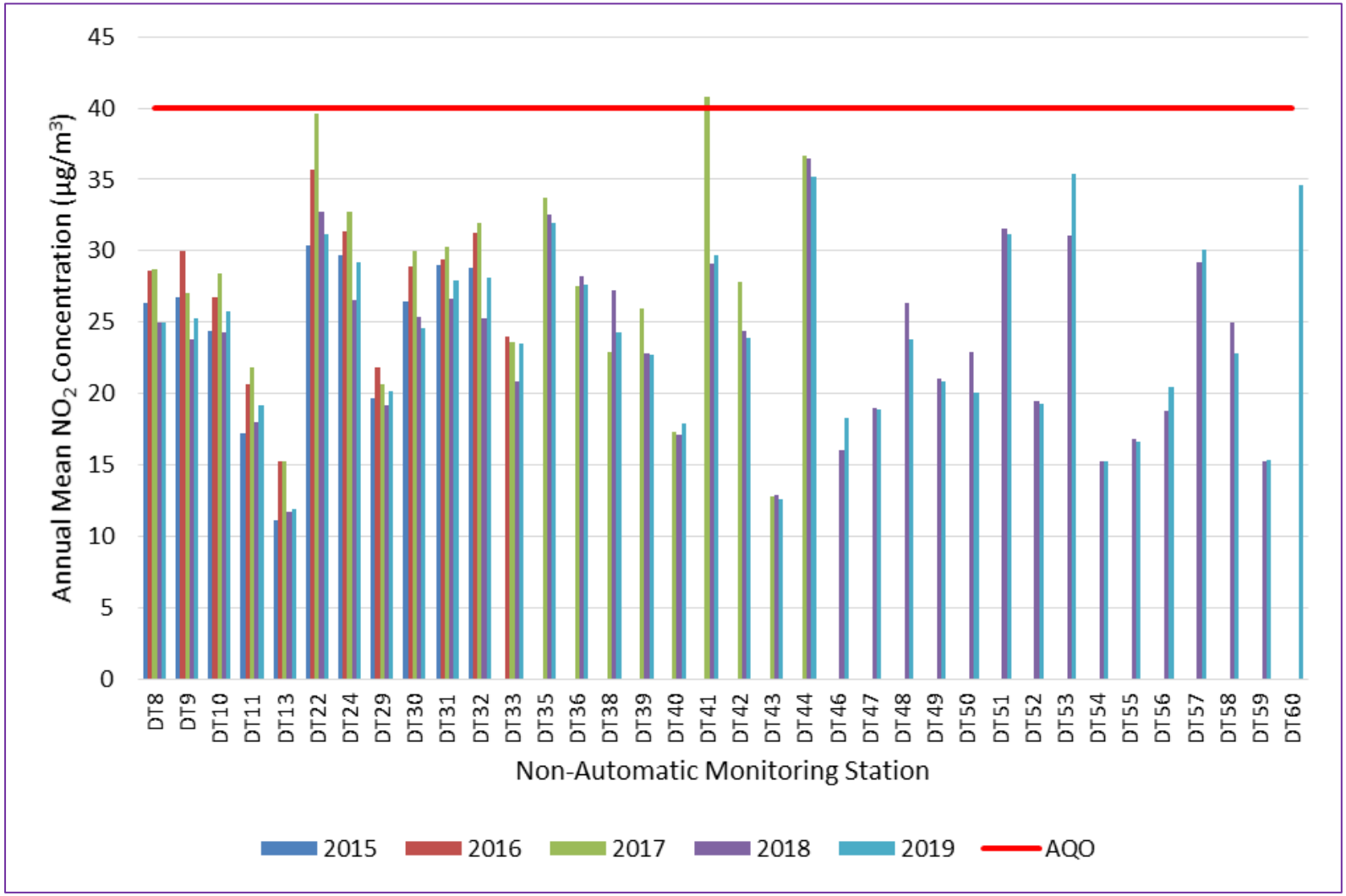


Table A.4 – 1-Hour Mean NO_2 Monitoring Results

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	NO_2 1-Hour Means > 200µg/m^3 (3)				
							2015	2016	2017	2018	2019
CM1	616186	157320	Urban background	Automatic	99%	99%	0	0	0	0	0
CM3	615401	158169	Roadside	Automatic	97%	97%	0	0	0	0	0

Notes:

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

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

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

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

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	PM_{10} Annual Mean Concentration ($\mu g/m^3$) (3)				
						2015	2016	2017	2018	2019
CM1	616186	157320	Urban Background	98.4	98.4	17	17	17	21	17

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

Notes:

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

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

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

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

Figure A.5 - Trends in Annual Mean PM_{10} Concentrations

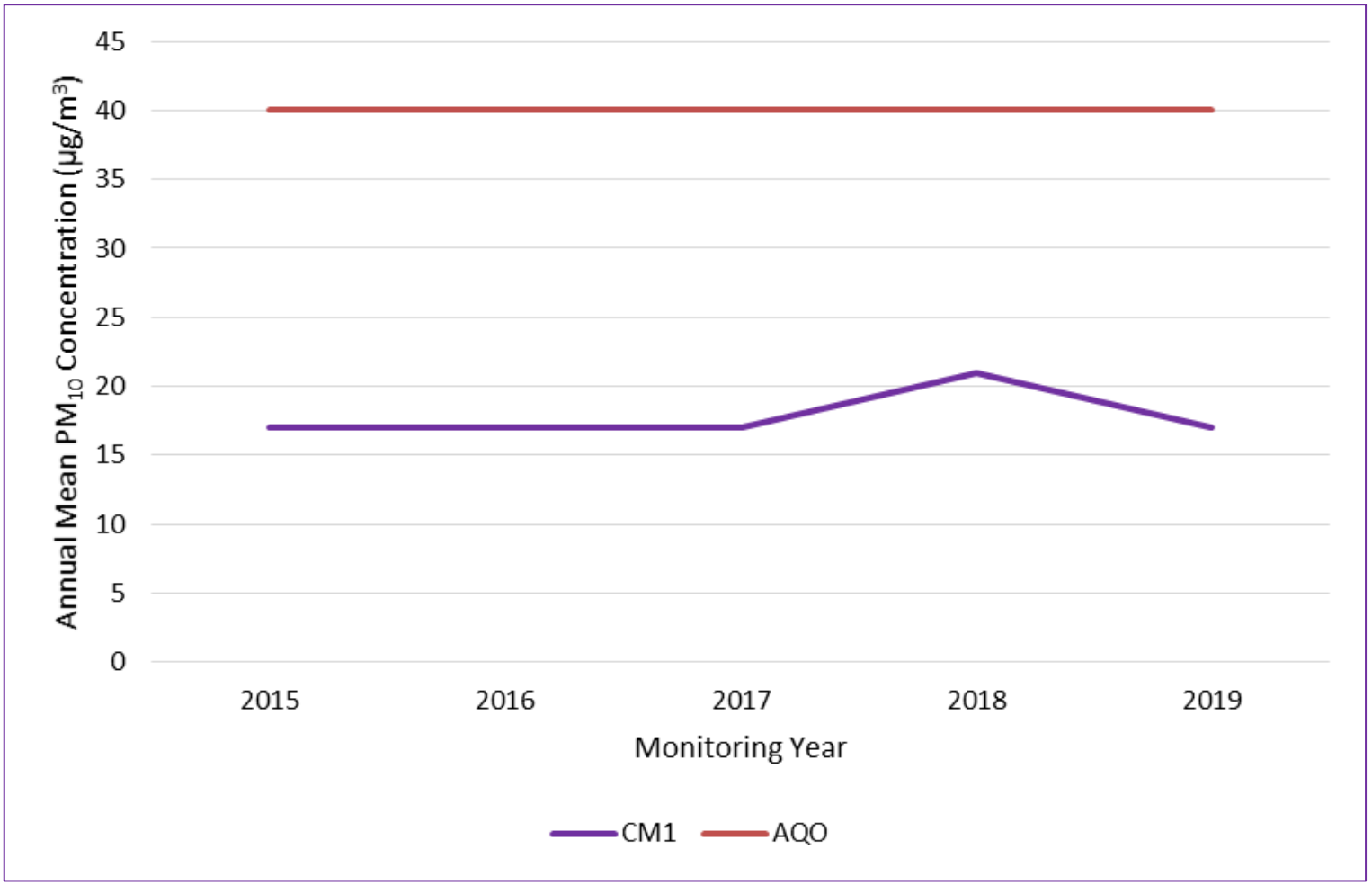


Table A.6 – 24-Hour Mean PM_{10} Monitoring Results

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	PM_{10} 24-Hour Means > 50µg/m^3 (3)				
						2015	2016	2017	2018	2019
CM1	616186	157320	Urban Background	98.4	98.4	2	2	2	1	3

Notes:

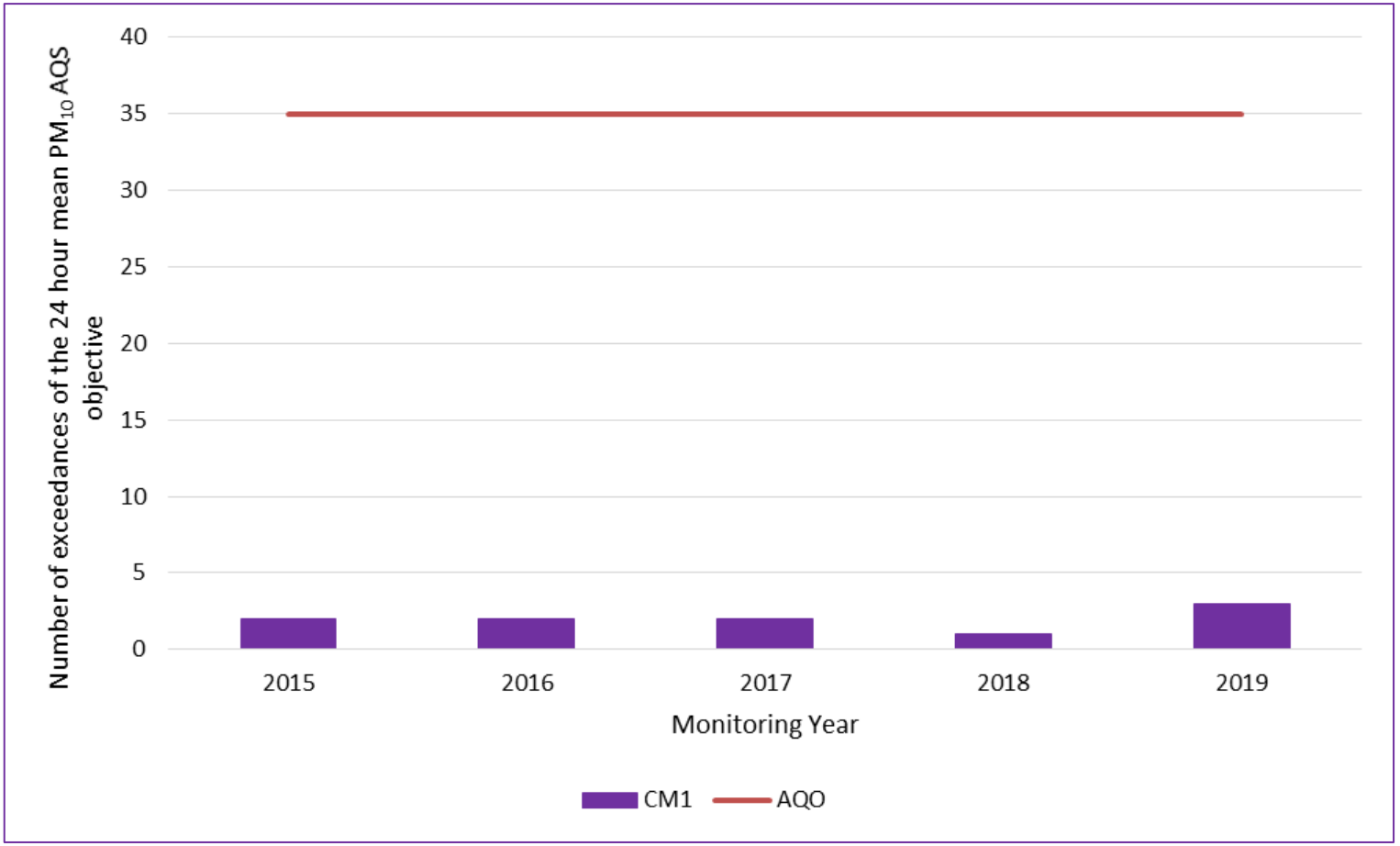
Exceedances of the PM_{10} 24-hour mean objective (50µg/m^3 not to be exceeded more than 35 times/year) are shown in **bold.**

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

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

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

Figure A.6 - Trends in Number of 24-Hour Mean PM_{10} Results >50µg/m^3



Appendix B: Full Monthly Diffusion Tube Results for 2019

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	NO_2 Mean Concentrations ($\mu g/m^3$)														
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean		
															Raw Data	Bias Adjusted (0.76) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
DT1	615295	158001	54.5	78.8	-	56.8	62.1	59.2	-	-	-	-	-	78.6	65.0	**45.1**	**43.2**
DT6	615655	158696	47.7	43.7	35.8	42.2	35.3	33.7	29.6	33.5	35.0	39.0	43.6	43.8	38.6	29.3	
DT7	614355	158267	37.6	40.0	-	34.7	31.0	30.8	25.3	27.3	28.3	32.6	44.5	-	33.2	25.2	
DT8	617785	168231	39.1	36.5	32.7	37.8	32.2	34.3	27.5	28.5	26.8	28.0	37.6	33.9	32.9	25.0	
DT9	610686	166421	41.5	-	29.6	32.4	-	28.7	29.9	30.5	-	30.8	37.9	37.5	33.2	25.2	
DT11	620909	157426	36.8	30.0	25.0	24.0	20.8	19.6	20.4	22.7	20.4	24.5	30.6	27.7	25.2	19.2	
DT2	614229	157091	43.9	42.6	31.5	42.9	31.8	38.2	33.6	32.9	30.3	34.5	43.1	40.8	37.2	28.3	
DT5	614043	158016	45.9	51.5	-	27.8	31.4	31.3	29.1	42.6	29.5	40.2	60.4	-	39.0	29.6	
DT13	616186	157320	20.4	21.5	17.2	17.6	12.2	10.8	12.6	11.9	11.4	14.3	21.3	17.2	15.7	11.9	
DT3	614675	158219	46.4	53.3	41.7	42.2	38.9	43.3	35.8	41.1	37.9	42.9	50.1	41.9	43.0	32.6	
DT4	614410	157702	41.2	66.8	56.6	53.4	60.6	55.3	59.1	64.4	54.8	59.1	66.5	65.8	58.6	**44.6**	26.1
DT10	615123	158630	34.5	41.5	37.7	34.2	27.2	28.7	26.1	31.9	29.4	34.5	42.9	38.2	33.9	25.8	
DT27	615295	158030	63.0	67.2	59.2	65.6	57.0	60.6	56.0	57.8	56.1	60.3	63.6	58.8	60.4	**45.9**	36.5
DT12	615390	158180	48.8	60.0	50.4	48.5	45.2	48.2	45.3	51.2	46.5	52.6	55.3	53.3	50.4	38.3	

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	NO_2 Mean Concentrations ($\mu g/m^3$)														
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean		
															Raw Data	Bias Adjusted (0.76) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
DT14	614065	156976	-	49.1	53.4	56.8	49.0	52.0	52.6	53.3	49.1	51.4	57.3	-	52.4	39.8	
DT15	613902	156851	57.5	63.5	60.9	55.0	51.0	53.2	52.7	56.0	50.0	58.5	61.7	51.7	56.0	**42.5**	
DT16	615401	158169	36.5	34.5	35.1	45.2	32.4	34.9	28.1	28.2	31.3	34.0	38.8	31.6	34.2	26.0	
DT17	616169	159067	-	50.3	42.2	55.5	53.5	52.6	47.7	49.1	44.8	52.1	55.0	55.9	50.8	38.6	
DT18	615106	157382	51.6	44.6	40.5	51.6	46.3	45.9	38.0	35.1	38.6	43.0	51.0	36.6	43.6	33.1	
DT19	614454	158180	57.8	63.9	53.1	48.1	47.2	47.2	46.8	52.9	39.9	52.0	54.3	49.2	51.0	38.8	
DT20	614479	157857	45.3	44.8	-	45.5	32.9	-	35.4	37.6	37.1	-	-	44.4	40.4	30.6	
DT21	614688	158251	34.9	-	34.9	42.2	30.0	33.0	27.3	31.8	30.1	33.4	39.2	34.8	33.8	25.7	
DT22	615851	157672	47.1	53.8	-	45.8	-	40.3	39.9	-	-	-	52.8	-	46.6	31.2	
DT23	614501	157338	67.1	60.5	63.7	53.1	55.4	54.6	54.2	56.6	55.3	60.4	62.3	53.9	58.1	**44.1**	
DT24	617748	160331	43.4	47.5	-	36.9	32.8	31.6	34.3	33.8	-	-	42.6	42.5	38.4	29.2	
DT26	618242	165948	37.4	41.5	31.8	-	28.4	27.7	26.6	27.5	27.9	30.4	39.7	37.0	32.4	24.6	
DT28	618241	165928	60.2	58.9	53.4	52.9	53.0	52.7	53.5	49.8	49.6	53.1	57.7	57.5	54.4	**41.3**	
DT29	618125	166309	41.4	33.3	30.0	25.3	20.8	21.7	19.3	22.7	20.3	24.2	29.4	30.1	26.5	20.2	
DT31	617217	167155	36.0	43.6	40.7	38.3	29.6	29.3	-	35.5	29.6	38.0	45.3	38.7	36.8	28.0	
DT32	614055	158242	-	53.9	42.3	39.2	33.4	30.8	30.7	33.4	31.9	32.1	46.2	32.6	37.0	28.1	
DT30	618073	167085	36.5	37.5	29.7	31.6	25.6	29.4	25.7	31.8	26.8	35.1	39.1	39.5	32.4	24.6	
DT33	615777	156402	-	-	27.8	-	-	27.4	21.9	26.6	24.6	27.6	35.7	29.6	27.7	23.5	
DT34	614541	158137	46.5	46.3	42.6	54.8	39.3	38.6	31.2	30.6	33.3	38.9	47.2	35.6	40.4	30.7	

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	NO_2 Mean Concentrations (µg/m^3)														
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean		
															Raw Data	Bias Adjusted (0.76) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
DT35	615645	157192	51.3	36.5	46.4	37.3	43.2	40.1	-	42.3	38.5	-	-	42.2	42.0	31.9	
DT36	614522	158240	33.5	42.3	-	43.6	31.9	34.7	28.9	30.4	-	36.9	45.8	35.8	36.4	27.6	
DT37	613621	158073	41.4	40.6	32.9	26.9	24.0	22.5	22.1	27.7	24.3	30.4	36.9	34.8	30.4	23.1	
DT38	613722	156784	34.3	41.2	33.6	34.4	26.5	29.7	25.1	27.4	25.2	31.5	38.8	35.1	31.9	24.2	
DT39	612923	156682	37.9	36.7	27.7	28.1	26.2	25.1	24.4	28.0	25.5	29.2	37.5	32.0	29.9	22.7	
DT40	611070	166555	31.0	33.9	-	24.5	16.4	17.3	-	19.0	15.9	23.2	28.3	26.2	23.6	17.9	
DT41	610696	164570	51.1	50.3	31.3	29.7	33.5	33.1	35.0	41.7	30.0	40.6	45.5	46.8	39.1	29.7	
DT42	613484	166687	35.3	40.8	38.2	33.9	28.8	27.5	27.5	27.3	23.6	25.8	33.1	35.1	31.4	23.9	
DT43	617091	165749	21.9	22.2	13.4	20.9	-	13.8	11.4	15.2	11.3	13.8	20.7	17.3	16.5	12.6	
DT44	615445	157408	54.1	39.0	47.8	45.7	48.0	46.0	-	47.2	45.6	-	50.6	39.6	46.4	35.2	
DT45	615749	158342	23.9	31.5	26.0	22.1	17.0	16.1	15.5	19.2	17.8	21.6	30.1	26.8	22.3	16.9	
DT46	611032	166712	31.9	31.8	26.1	-	15.3	16.7	-	18.4	-	20.7	27.5	28.4	24.1	18.3	
DT47	610665	166785	28.7	35.2	22.5	27.1	19.6	21.0	19.7	23.2	18.7	25.0	27.9	29.3	24.8	18.9	
DT48	610647	166658	34.9	-	25.9	-	29.4	29.9	29.9	-	-	27.5	37.6	31.2	30.8	23.8	
DT49	610670	166252	32.5	34.5	23.6	33.0	24.7	25.0	23.8	22.0	20.9	25.3	34.0	30.0	27.4	20.9	
DT50	616728	161469	29.8	35.4	18.7	25.2	24.6	24.1	23.0	22.3	20.9	25.2	36.3	30.5	26.3	20.0	
DT51	618487	160927	47.3	48.7	43.5	40.2	38.0	37.9	38.2	41.2	37.4	35.9	42.4	42.0	41.1	31.2	
DT52	620633	162100	29.0	41.5	-	22.4	19.2	21.1	24.8	19.9	19.1	21.9	28.5	32.2	25.4	19.3	
DT53	617674	160475	50.8	54.9	47.7	43.5	37.7	42.2	44.8	49.9	42.6	47.6	45.2	51.1	46.5	35.3	

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	NO_2 Mean Concentrations ($\mu g/m^3$)														
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean		
															Raw Data	Bias Adjusted (0.76) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
DT54	615152	158288	29.6	-	-	23.4	15.8	-	13.0	11.8	15.3	20.0	26.9	-	19.5	15.2	
DT55	615402	158088	24.6	-	-	23.7	16.2	18.1	14.1	16.7	19.0	22.9	-	-	19.4	16.6	
DT56	615426	158052	31.2	35.4	-	27.0	20.4	21.4	19.7	24.0	23.5	25.5	35.2	32.5	26.9	20.4	
DT57	614927	158813	51.3	44.6	44.3	35.7	30.8	32.5	30.6	34.2	33.8	41.5	49.9	45.7	39.6	30.1	
DT58	614867	158899	-	36.8	35.8	34.8	27.3	28.6	23.0	23.8	24.1	33.9	-	32.4	30.1	22.8	
DT59	617879	167895	27.6	27.5	22.8	23.8	14.6	15.9	13.6	16.0	14.4	15.3	25.5	25.3	20.2	15.3	
DT60	615044	157557	55.0	-	-	46.7	45.0	42.8	39.0	39.9	43.6	44.0	49.9	49.2	45.5	34.6	

☒ **Local bias adjustment factor used**

☐ **National bias adjustment factor used**

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

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

Notes:

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

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

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

(2) Distance corrected to nearest relevant public exposure.

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

Diffusion tube bias adjustment factors

The diffusion tubes are supplied and analysed by SOCOTEC (previously known as ESG Didcot) using the 50% triethanolamine (TEA) in acetone preparation method. A bias adjustment of 0.75 for the year 2019 (based on 24 studies, March 2020) has been derived from the national bias adjustment calculator.

For previous data, years 2015 to 2018, the bias adjustment factors have been taken from the Council's previous LAQM annual reports. The factors used were 0.75 (2015 - local), 0.77 (2016 - local), 0.78 (2017 - local) and 0.74 (2018 - local).

Factors from Local Co-location Studies

Canterbury City Council has triplicate tubes located at CM1 Chaucer Technology School (DT13) and CM3 Military Road (DT16) for the purpose of calculating a local combined bias adjustment factor.

A factor of 0.79 was produced from the Chaucer Technology School co-location survey using ten periods of data with good diffusion tube precision and good data capture for the 2019 monitoring period (see Figure C.2).

A factor of 0.74 was produced from the Military Road co-location survey using twelve periods of 2019 monitoring data with good diffusion tube precision and good data capture for the 2019 monitoring period (see Figure C.1).

The orthogonal regression of the two bias adjustment factors has been used, giving an overall bias adjustment factor of 0.76 for 2019.

Figure C.2 - Chaucer Technology School Local Bias Adjustment Factor Calculations

Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tubes Measurements

Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 µgm^{-3}	Tube 2 µgm^{-3}	Tube 3 µgm^{-3}	Triplicate Mean	Standard Deviation	Coefficient of Variation (CV)	95% CI of mean
1	09/01/2019	05/02/2019	18.1		22.7	20	3.3	16	29.2
2	05/02/2019	05/03/2019	21.1	22.5	20.8	21	0.9	4	2.3
3	05/03/2019	02/04/2019	18.6	16.3	16.8	17	1.2	7	3.0
4	02/04/2019	29/04/2019	17.5	17.8	17.6	18	0.2	1	0.4
5	29/04/2019	06/06/2019	11.3	12.2	13.1	12	0.9	7	2.2
6	06/06/2019	02/07/2019	10.8						
7	02/07/2019	06/08/2019		12.6					
8	06/08/2019	03/09/2019	11.2	12.3	12.3	12	0.6	5	1.6
9	03/09/2019	01/10/2019	11.7	11.1	11.5	11	0.3	3	0.8
10	01/10/2019	05/11/2019	14.7	14.1	14.0	14	0.4	3	0.9
11	05/11/2019	05/12/2019	23.4	22.3	18.1	21	2.8	13	6.9
12	05/12/2019	07/01/2020	17.5	17.1	17.0	17	0.3	2	0.7
13									

Automatic Method		Data Quality Check	
Period Mean	Data Capture (% DC)	Tubes Precision Check	Automatic Monitor Data
19.1	99.8	Good	Good
16.7	98.1	Good	Good
12.6	95.7	Good	Good
17.3	99.8	Good	Good
10	99.6	Good	Good
9	99.8		Good
8	99.5		Good
9	99.3	Good	Good
9	95.4	Good	Good
10	99.4	Good	Good
16.8	99.7	Good	Good
11	99.5	Good	Good
	Overall survey -->	Good precision	Good Overall

(Check average CV & DC from Accuracy calculations)

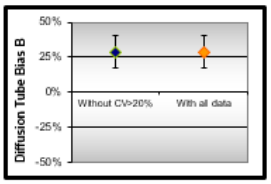
It is necessary to have results for at least two tubes in order to calculate the precision of the measurements

Site Name/ ID: Chaucer

Precision: 10 out of 10 periods have a CV smaller than 20%

Accuracy (with 95% confidence interval) without periods with CV larger than 20%	
Bias calculated using 10 periods of data	
Bias factor A	0.79 (0.73 - 0.87)
Bias B	26% (14% - 37%)
Diffusion Tubes Mean:	17 µgm^{-3}
Mean CV (Precision):	6
Automatic Mean:	13 µgm^{-3}
Data Capture for periods used:	99%
Adjusted Tubes Mean:	13 (12 - 14) µgm^{-3}

Accuracy (with 95% confidence interval) WITH ALL DATA	
Bias calculated using 10 periods of data	
Bias factor A	0.79 (0.73 - 0.87)
Bias B	26% (14% - 37%)
Diffusion Tubes Mean:	17 µgm^{-3}
Mean CV (Precision):	6
Automatic Mean:	13 µgm^{-3}
Data Capture for periods used:	99%
Adjusted Tubes Mean:	13 (12 - 14) µgm^{-3}



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Version 04 - February 2011

Figure C.1 - Military Road Local Bias Adjustment Factor Calculations

Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tubes Measurements

Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 µgm^{-3}	Tube 2 µgm^{-3}	Tube 3 µgm^{-3}	Triplicate Mean	Standard Deviation	Coefficient of Variation (CV)	95% CI of mean
1	08/01/2019	07/02/2019	33.5	39.1	37.0	37	2.8	8	7.0
2	07/02/2019	06/03/2019	35.7	37.9	29.8	34	4.2	12	10.4
3	06/03/2019	03/04/2019	32.7	38.6	34.1	35	3.1	9	7.7
4	03/04/2019	30/04/2019	40.7	45.1	49.8	45	4.6	10	11.3
5	30/04/2019	07/06/2019	35.9	28.7	32.5	32	3.6	11	8.9
6	07/06/2019	03/07/2019	34.1	35.2	35.3	35	0.7	2	1.7
7	03/07/2019	07/08/2019	28.9	27.2	28.1	28	0.9	3	2.1
8	07/08/2019	05/09/2019	29.5	27.4	27.7	28	1.1	4	2.8
9	05/09/2019	04/10/2019	27.6	36.0	30.4	31	4.3	14	10.6
10	04/10/2019	06/11/2019	33.8	34.2		34	0.3	1	2.5
11	06/11/2019	05/12/2019	41.2	33.8	41.4	39	4.3	11	10.8
12	05/12/2019	08/01/2020	32.2	31.7	31.0	32	0.6	2	1.5
13									

Automatic Method		Data Quality Check	
Period Mean	Data Capture (% DC)	Tubes Precision Check	Automatic Monitor Data
27.7	99	Good	Good
24.5	95.1	Good	Good
25.4	99.3	Good	Good
31.5	88.4	Good	Good
25	99.3	Good	Good
34	86.7	Good	Good
17	98.9	Good	Good
19	99.3	Good	Good
21	96.3	Good	Good
24	99.1	Good	Good
33.7	99.7	Good	Good
21.5	99.8	Good	Good
	Overall survey -->	Good precision	Good Overall

(Check average CV & DC from Accuracy calculations)

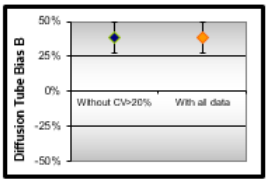
It is necessary to have results for at least two tubes in order to calculate the precision of the measurements

Site Name/ ID: Military Road

Precision: 12 out of 12 periods have a CV smaller than 20%

Accuracy (with 95% confidence interval) without periods with CV larger than 20%	
Bias calculated using 12 periods of data	
Bias factor A	0.74 (0.68 - 0.8)
Bias B	36% (25% - 46%)
Diffusion Tubes Mean:	34 µgm^{-3}
Mean CV (Precision):	7
Automatic Mean:	25 µgm^{-3}
Data Capture for periods used:	97%
Adjusted Tubes Mean:	25 (23 - 27) µgm^{-3}

Accuracy (with 95% confidence interval) WITH ALL DATA	
Bias calculated using 12 periods of data	
Bias factor A	0.74 (0.68 - 0.8)
Bias B	36% (25% - 46%)
Diffusion Tubes Mean:	34 µgm^{-3}
Mean CV (Precision):	7
Automatic Mean:	25 µgm^{-3}
Data Capture for periods used:	97%
Adjusted Tubes Mean:	25 (23 - 27) µgm^{-3}



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Version 04 - February 2011

Discussion of Choice of Factor to Use

Data has been corrected using a bias adjustment factor, which is an estimate of the difference between diffusion tube concentrations and continuous monitoring, the latter assumed to be a more accurate method of monitoring. The technical guidance LAQM.TG 16 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tubes. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data from NOx / NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

With regard to the application of a bias adjustment factor for the diffusion tubes, the technical guidance LAQM.TG 16 and LAQM Helpdesk recommends the use of a local bias adjustment factor where available and relevant to diffusion tube sites.

The national bias adjustment factor was calculated at 0.75 and the local bias adjustment factor calculated as 0.76 for the year 2019. In terms of calculating the local bias adjustment factor, automatic data capture was good for the two co-location studies used. There was overall good diffusion tube precision at both sites, additionally all periods of diffusion tube data were captured at the Military Road co-location site and Chaucer Technology School Site was only missing two months of full diffusion tube data. The bias factor of 0.76 is consistent with factors used in previous years and provides representative results for the local area. Therefore, the local adjustment factor has been used.

PM Monitoring Adjustment

The Council undertook monitoring for PM_{10} based on TEOM analysers at one location during 2019. The monitoring results for the TEOM have been VCM corrected prior to reporting.

Short-term to Long-term Data Adjustment

Data capture at all sites which recorded less than 75% data capture during 2019 has been annualised according to the method set out in LAQM TG(16) box 7.9. The details of the annualisation have been provided in Table C.1.

Table C.1 - Short-Term to Long-Term Monitoring Data Adjustment

Site	Uncorrected Mean (µg/m^3)	Canterbury AF	Rochester Stoke AF	Southend-on-Sea AF	Average AF	Annualised Data Average µg/m^3	Annualised Bias Adjusted (0.76) Concentration (µg/m^3)
DT1	65.0	0.8988	0.9232	0.9198	0.9139	59.4	45.1
DT20	40.4	0.9949	1.0013	0.9998	0.9987	40.3	30.6
DT22	46.6	0.8731	0.8752	0.8916	0.8800	41.0	31.2
DT33	27.7	1.1469	1.1123	1.0995	1.1196	31.0	23.5
DT48	30.8	1.0265	1.0069	1.0145	1.0160	31.3	23.8
DT54	19.5	1.0092	1.0205	1.0521	1.0273	20.0	15.2
DT55	19.4	1.0955	1.1457	1.1432	1.1281	21.9	16.6

QA/QC of Diffusion Tube Monitoring

SOCOTEC is a UKAS accredited laboratory and participates in the in the new AIR-PT Scheme (a continuation of the Workplace Analysis Scheme for Proficiency (WASP)) for NO_2 tube analysis and the Annual Field Inter-Comparison Exercise. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO_2 concentrations reported are of a high calibre. The lab follows the procedures set out in the Harmonisation Practical Guidance. In the latest available AIR-PT results, AIR-PT AR 030 (January to February 2019), AIR-PT AR031 (April to May 2019), AIR-PT AR033 (July to August 2019) and AIR-PT AR034 (September to November 2019). SOCOTEC has scored 87.5% for the January – February period and 100% for all remaining periods in 2019. The percentage score reflects the results deemed to be satisfactory based upon the z-score of < ± 2. Based on 24 studies, 96% of all local Authority co-location studies in 2019 were rated as 'good' (tubes are considered to have "good" precision where the coefficient of variation of duplicate or triplicate diffusion tubes for eight or more periods during the year is less than 20%).

Fall-off with Distance Correction of Sites Exceeding or within 10% of the NO_2 Annual Mean Objective

A total of ten monitoring sites recorded either an exceedance or were within 10% of exceeding the NO_2 AQS objective of 40µg/m^3. Five monitoring sites (DT1, DT4, DT27, DT15 and DT23) exceeding the NO_2 AQS objective were located within the Canterbury 3 AQMA and one monitoring site (DT 28) exceeding the NO_2 AQS objective was located within the Herne 1 AQMA. A further four sites (DT12, DT14, DT17, DT19) inside the Canterbury 3 AQMA reported concentrations within 10% of the annual mean NO_2 AQS objective.

The monitoring locations DT12, DT14, DT15, DT17, DT19, DT23 and DT28 are representative of exposure, therefore were not corrected for distance. The NO_2 fall-off with distance calculator was used to estimate the NO_2 concentration at the nearest locations with relevant exposure for the remaining diffusion tube monitoring sites. The NO_2 fall-off with distance correction calculation for these locations is shown in Figure C.3. No bias adjustment has been carried out on the values shown within the figure below.

Figure C.3 - Fall-off with Distance Correction

Enter data into the pink cells

Site Name/ID	Distance (m)		NO_2 Annual Mean Concentration ($\mu g/m^3$)			Comment
	Monitoring Site to Kerb	Receptor to Kerb	Background	Monitored at Site	Predicted at Receptor	
DT1/CA01	1.4	1.8	13.9	59.4	**56.9**	Predicted concentration at Receptor above AQS objective.
DT4/CA23	0.6	11.6	13.9	58.6	34.4	
DT27/CA25	0.6	2.6	13.9	60.4	**48.0**	Predicted concentration at Receptor above AQS objective.

Future Development in Canterbury City Council

The following developments were granted planning permission in 2019 (1 April 2019 to 31st March 2020):

Table C.2 - Future Planning Developments in Canterbury

Planning Reference Number	Development Location	Development details	Decision	Date of Decision	EV Charging
CA//18/02543	Motorline, Broad Oak Road, Canterbury, CT2 7RB	Proposed two-storey car showroom with ancillary workshop and MOT area, detached valet building, associated external works, car parking and formation of new access from Broad Oak Road and Vauxhall Road	Granted	01.05.2019	3 EV charging points
CA//18/02408	Land South of Joseph Wilson Industrial	Proposed 40 units to provide 7619 sq. metres of floor space for light industrial, general	Granted	16.12.2019	12 EV charging points

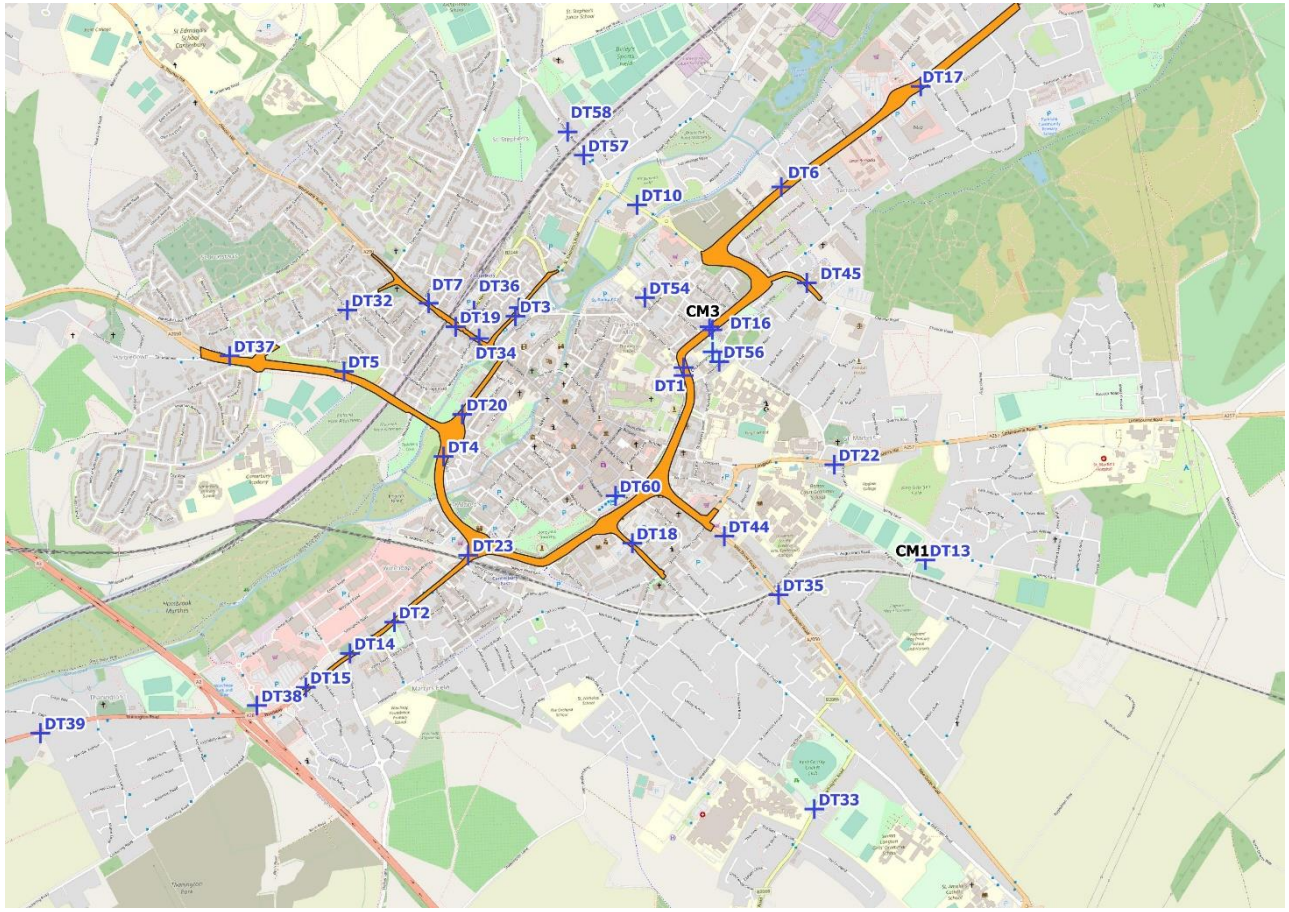
Planning Reference Number	Development Location	Development details	Decision	Date of Decision	EV Charging
	Estate, Millstrood Road, Whitstable	industrial, storage/distribution, builder's merchants and including a replacement retail unit, together with associated parking, servicing areas, landscaping and drainage balancing pond, following demolition of the existing unit 44.			
CA//19/00489	Plot At Thomas Way Lakesview Business Park Hersden Westbere	Proposed three buildings comprising 20 no. units for light industrial use.	Granted	27.02.2020	6 EV charging points
CA//19/01235	41- 45 Northgate Canterbury CT1 1BE	Proposed 5 no. commercial units with 10 no. almshouse flats above, following demolition of existing buildings at 41, 42 and 43-45 Northgate.	Granted	21.10.2019	1 EV charging point
CA//18/02551	Wincheap Park & Ride Ten Perch Road Canterbury CT1 3TQ	Proposed extension to existing park and ride facility to provide an additional 228 parking spaces, replacement terminal building, reconfiguration to access, together with fencing, lighting, landscaping and cycle storage.	Granted	16.10.2019	43 EV points with further 43 when utilisation reaches 85%
CA//18/00476	Goose Farm Shalloak Road Broad Oak Sturry CT2 0QE	Proposed 36 no. industrial units with associated parking, turning and landscaping following demolition of all industrial buildings and structures.	Granted	05.04.2019	13 EV charging points
CA//18/02290	Eddington Park Herne Bay Golf Club Thanet Way Herne Bay CT6 7PG	Proposed 93 residential dwellings, 1,179 sqm of office (B1a) floorspace and 372 sqm of retail (A1) set over 7 blocks of up to 2 and 3 storeys.	Granted	08.11.2019	19 EV charging points

Air quality is given due consideration in the planning process at the earliest possible stage. Air quality assessments are required in many instances and are required to take into account the cumulative effects of individual sites. Reference is made to the Kent and Medway Air Quality Partnership's document "Air Quality and Planning Technical Guidance" when considering development that may have an impact on the AQMAs. Air Quality mitigation measures in the form of Electric Vehicle Charging points, low NOx boilers and where feasible photovoltaic solar panels are requested as standard practice for all developments over 10 dwellings or 100 square metres. Quantification of the impact of mitigation measures (where possible) is now also a requirement for all

air quality assessments. In some instances, mitigation may not be appropriate or feasible and the development may be deemed to be unacceptable in terms of air quality. Developer contribution may be required in some instances to assist planned or on-going air quality improvement projects.

Appendix D: Maps of Monitoring Locations and AQMAs

Figure D.1 - Map of Automatic and Non-Automatic Monitoring Stations within Close Proximity of the Canterbury City AQMA



Legend

- Automatic Monitoring Stations
- Diffusion Tubes
- AQMA boundary

Contains Ordnance Survey Data Crown Copyright and Database Right [2020]

Location: Canterbury City AQMA

Title:
Map of Automatic and Non-Automatic Monitoring Stations within Close Proximity to the Canterbury City AQMA

Date:15/06/2020

Figure: D.1

Figure D.2 - Map of Non-Automatic Monitoring Stations in Herne Bay

Legend

Automatic Monitoring Stations

Diffusion Tubes

AQMA boundary

Location: Herne Bay

Title:
Map of Non-Automatic Monitoring Stations in Herne Bay

Date:15/06/2020

Figure: D.2

Figure D.3 - Map of Non-Automatic Monitoring Stations within Close Proximity of the Herne AQMA

Legend

Automatic Monitoring Stations

Diffusion Tubes

AQMA boundary

Location: Herne AQMA

Title:
Map of Non-Automatic Monitoring Stations within Close Proximity of the Herne AQMA

Date:15/06/2020

Figure: D.3

Figure D.4 - Map of Non-Automatic Monitoring Stations in Whitstable

Legend

Automatic Monitoring Stations

Diffusion Tubes

AQMA boundary

Contains Ordnance Survey Data Crown Copyright and Database Right [2020]

Location: Whitstable

Title:
Map of Non-Automatic Monitoring Stations in Whitstable

Date:15/06/2020

Figure: D.4

Figure D.5 - Map of Non-Automatic Monitoring Station on Thanet Way

Legend

Automatic Monitoring Stations

Diffusion Tubes

AQMA boundary

Location: Thanet Way

Title:
Map of Non-Automatic Monitoring Station on Thanet Way

Date:15/06/2020

Figure: D.5

Figure D.6 - Map of Non-Automatic Monitoring Station in Littlebourne

Legend

Automatic Monitoring Stations

Diffusion Tubes

AQMA boundary

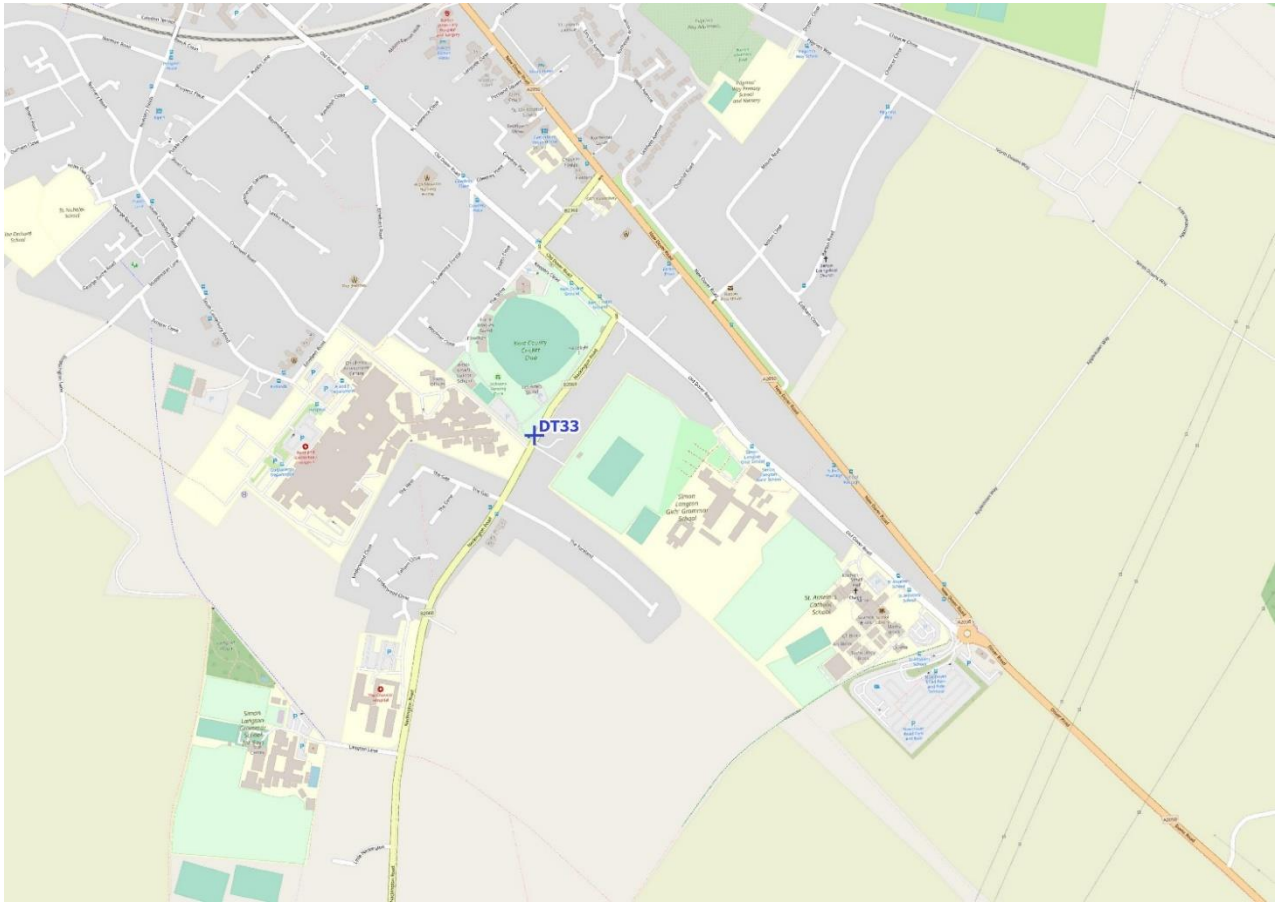
Location: Littlebourne

Title:
Map of Non-Automatic Monitoring Station in Littlebourne

Date:15/06/2020

Figure: D.6

Figure D.7 - Map of Non-Automatic Monitoring Station along Nackington Road



Legend

Automatic Monitoring Stations

Diffusion Tubes

AQMA boundary

Location: Nackington Road

Title:
Map of Non-Automatic Monitoring Station along Nackington Road

Date:15/06/2020

Figure: D.7

Figure D.8 - Map of Non-Automatic Monitoring Stations in Sturry

Legend

Automatic Monitoring Stations

Diffusion Tubes

AQMA boundary

Location: Sturry

Title:
Map of Non-Automatic Monitoring Stations in Sturry

Date:15/06/2020

Figure: D.8

Figure D.9 - Map of Non-Automatic Monitoring Stations in Thannington

Legend

Automatic Monitoring Stations

Diffusion Tubes

AQMA boundary

Location: Thannington

Title:
Map of Non-Automatic Monitoring Stations in Thannington

Date:15/06/2020

Figure: D.9

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective[8]	
	Concentration	Measured as
Nitrogen Dioxide (NO_2)	200 µg/m^3 not to be exceeded more than 18 times a year	1-hour mean
	40 µg/m^3	Annual mean
Particulate Matter (PM_{10})	50 µg/m^3, not to be exceeded more than 35 times a year	24-hour mean
	40 µg/m^3	Annual mean
Sulphur Dioxide (SO_2)	350 µg/m^3, not to be exceeded more than 24 times a year	1-hour mean
	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean
	266 µg/m^3, not to be exceeded more than 35 times a year	15-minute mean

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

Appendix F: Diffusion Tube Coding

Table F.1 below details the diffusion tube coding used within the Annual Status Reports, the coding used on the KentAir website and the location.

Table F.1 - Diffusion Tube Coding

ASR Site ID	Site Name	Site Location	Easting	Northing
DT1	CA01	92b Broad Street, Canterbury	615295	158001
DT6	CA08	75 Sturry Road, Canterbury	615655	158696
DT7	CA10	31 St Dunstans, Canterbury	614355	158267
DT8	CA11	Albany House 115 High St, Herne Bay	617785	168231
DT9	CA12	100 High Street, Whitstable	610686	166421
DT11	CA15	28 High Street, Littlebourne	620909	157426
DT2	CA16	95 Wincheap, Canterbury	614229	157091
DT5	CA17	nr Bus Stop Rheims Way, Canterbury	614043	158016
DT13	CA18/19/20	Spring lane, Canterbury	616186	157320
DT3	CA22	48 North Lane, Canterbury	614675	158219
DT4	CA23	Old Tannery Rheims Way, Canterbury	614410	157702
DT10	CA24	Kingsmead Road, Canterbury	615123	158630
DT27	CA25	44 Broad Street, Canterbury	615295	158030
DT12	CA26	Green island, Military Road, Canterbury	615390	158180
DT14	CA27	Non Conformist Burial Ground,Wincheap, Canterbury	614065	156976
DT15	CA28	284 Wincheap, Canterbury	613902	156851
DT16	CA29/30/31	Military Road Monitoring Stn., Canterbury	615401	158169
DT17	CA32	170 Sturry Road, Canterbury	616169	159067
DT18	CA35	25 Old Dover Road, Canterbury	615106	157382
DT19	CA37	72 St Dunstans, Canterbury	614454	158180
DT20	CA38	St Mildred Court, St Peter s Place, Canterbury	614479	157857
DT21	CA39	The Old Raj, 25-26 North Lane, Canterbury	614688	158251
DT22	CA40	opp 9 St Martin s Hill, Canterbury	615851	157672
DT23	CA41	Drainpipe on façade of Coombes (Formerly on lampost opp Coombes)	614501	157338
DT24	CA42	jct of Sturry Hill/Field Way, Canterbury	617748	160331
DT26	CA44	11 Herne Street, Herne	618242	165948
DT28	CA46	18 Herne Street, Herne	618251	165911
DT29	CA47	opp 247 Canterbury Road, Herne	618125	166309
DT31	CA48	lay by on A2990 Thanet Way, Herne Bay	617217	167155
DT32	CA49	66 London Road, Canterbury	614055	158242
DT30	CA50	o/s 230 Canterbury Raod, Herne Bay	618073	167085
DT33	CA51	opp 17 Nackington Road, Canterbury	615777	156402

ASR Site ID	Site Name	Site Location	Easting	Northing
DT34	CA52	Falstaff Hotel 8-10 St Dunstans, Canterbury	614541	158137
DT35	CA53	Lampost o/s 47 New Dover Rd, Canterbury	615645	157192
DT36	CA54	Lamppost o/s Westside Apts, Station Road West, Canterbury	614522	158240
DT37	CA55	Lamppost on A2050 inbound o/s Red House Nursing Home, Canterbury	613621	158073
DT38	CA56	Lamppost on Ten Perch Road, Canterbury	613722	156784
DT39	CA57	Lamppost o/s 1 Pippins Place, Ashford Rd, Thanington	612923	156682
DT40	CA58	School' sign o/s 155/157 Cromwell Rd, Whitstable	611070	166555
DT41	CA59	Lamppost on Old Thanet Way Eastbound, Whitstable	610696	164570
DT42	CA60	Lamppost on Reeves Way Roundabout, Chestfield	613484	166687
DT43	CA62	Outside Oakleigh, Bullockstone Road, Herne Bay	617091	165749
DT44	CA63	Outside 17 New Dover Road, Canterbury	615445	157408
DT45	CA64	Chaucer Road, Lamppost opposite St Gregory's Court, Cantebrury	615749	158342
DT46	CA65	Westmeads School, Cromwell Road, Whitstable	611032	166712
DT47	CA66	Outside 23 Harbour Street, Whitstable	610665	166785
DT48	CA67	Between 9&11 High Street, Whitstable	610647	166658
DT49	CA68	Outside St Alphege School, Oxford Street, Whitstable	610670	166252
DT50	CA69	Outside 53 Shalloak Road, Broad Oak	616728	161469
DT51	CA70	Island Road, Rear of 5 Ashendene Grove, Sturry	618487	160927
DT52	CA71	Corner of IslandRoad/The Poplars, Hersden	620633	162100
DT53	CA72	On Sturry Hill outside Sturry Court Mews, Canterbury	617674	160475
DT54	CA73	St John's Place, Canterbury	615152	158288
DT55	CA74	Old Ruttington Lane, Canterbury	615402	158088
DT56	CA75	Havelock Street, Canterbury	615426	158052
DT57	CA76	St Stephen's Road South, Canterbury	614927	158813
DT58	CA77	St Stephen's Road North, Canterbury	614867	158899
DT59	CA78	Herne Bay Infants' School, Stanley Road, Herne Bay	617879	167895
DT60	CA79	Canterbury Bus Station	615044	157557

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Air quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO_2	Sulphur Dioxide

References

- Department for Environment, Food and Rural Affairs (Defra) (2016) Local Air Quality Management Technical Guidance LAQM.TG16
- https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/0/gid/1000043/pat/6/par/E12000008/ati/202/are/E06000036/cid/4/page-options/ovw-do-0
- Canterbury City Council 2019 Air Quality Status Report
- Canterbury City Council Air Quality Action Plan 2018 – 2023
- Kent and Medway Energy and Low Emissions Strategy (ELES) https://kccconsultations.inconsult.uk/consult.ti/energyandlowemissionconsultation/consultationHome