

# Air Quality Action Plan

**Environment Act 2021** 

**Environment Act 1995** 

Local Air Quality Management

January 2025

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## Executive summary

This Air Quality Action Plan (AQAP) has been produced as part of our statutory duties required by the Local Air Quality Management framework.

It outlines the action we will take to improve and further maintain air quality in Canterbury and Herne between 2024-2029.

Based on the latest modelling and monitoring evidence, it is considered that our air quality objectives will be achieved by 2025 at the latest but are likely to have already been achieved (i.e. in 2023/24).

Monitoring is showing that in 2023, the air quality objectives were achieved at all locations by a margin of at least 10%, in most cases by much more, and there is a long-term downward trend in concentrations.

The primary focus of this action plan is, therefore, to implement measures to ensure air quality continues to achieve compliance in our existing Air Quality Management Areas (AQMAs) in Canterbury and Herne village and to improve air quality more generally across the district.

Using the best-fit data available from ONS for Lower Super Output Areas, based on 2021 Census data, the resident population within the Canterbury AQMA boundary is approximately 6,400 residents and the resident population within the Herne village AQMA boundary is approximately 330 residents.

Should the monitoring evidence continue to demonstrate compliance is being achieved over the coming years, we will look to revoke the AQMAs and develop an Air Quality Strategy for the district.

#### **Background**

In Canterbury, as for the majority of local authorities, road traffic emissions of nitrous oxide  $(NO_x)$ , resulting in elevated nitrogen dioxide  $(NO_2)$  along major roads is the main issue identified by the city council in relation to compliance with air quality objectives.

City centre roads are subject to frequent congestion in peak hours due to the high volume of vehicle movements linked to business, schools, retail, the university and tourism, and the historic, narrow layout of roads.

In addition to the city centre, an air quality 'hotspot' at the mini roundabout in Herne has been identified, again as a result of traffic volumes giving rise to emissions of  $NO_x$  and the close proximity of the residential properties to the roadside at this specific location.

The largest contributors to NO<sub>x</sub> emissions for road sources within the AQMAs are diesel cars and diesel Light Goods Vehicles (LGVs) and these vehicle types will be the focus of our actions.

This action plan replaces the previous action plan which ran from 2018-2023.

Projects already delivered to improve air quality include:

1 2 3 4 5

- working with Kent County Council to deliver broadband to 140,000 homes and businesses across Kent with 95% of properties now having access to superfast broadband to facilitate more opportunities for home working
- promoting information on sustainable fuels that can be burnt. Communications include articles on the council's newsroom website and links to Defra (Department for the Environment, Farming and Rural Affairs) leaflets.
- introducing the Events Implementation Strategy which restricts use of solid fuel, petrol and diesel generators at events held on council land
- adopting the Kent and Medway Energy and Low Emission Strategy and implementing the strategy as part of our actions. Some of the key actions include:
  - Emission Reduction Pathways to 2050: setting five-year carbon budgets and pathways to achieve net-zero emissions by 2050
  - Public Sector Decision Making: integrating low emission considerations into public sector decisions
  - Climate Emergency Investment Fund: establishing a fund to support climate action projects
- completing works to subways, cycle paths and streets as part of our active travel plans to make walking and cycling links in the city more appealing
- the introduction of a new policy requiring all taxi and private hire vehicles to be Euro 6 compliant unless wheelchair accessible

<sup>&</sup>lt;sup>1</sup> October 2023 Environmental equity, air quality, socioeconomic status and respiratory health, 2010

<sup>&</sup>lt;sup>2</sup> 2: Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

 $<sup>^{</sup>m 3}$  Defra. Abatement cost guidance for valuing changes in air quality, May 2013

<sup>&</sup>lt;sup>4</sup> Air Quality Consultants- AQMA Review Canterbury

<sup>&</sup>lt;sup>5</sup> https://uk-air.defra.gov.uk/air-pollution/uk-limits

All new taxis and private hire vehicles are required to be Ultra-Low Emission Vehicle (ULEV) compliant by August 2026 and all new vehicle classes to be Battery Electric Vehicles (BEVs) by April 2030.

- Incentives have been introduced to help with a licence fee discount and a free overnight parking permit of £100 per annum
- the continued enforcement of industrial pollution control and nuisance legislation within the district
- completing our statutory inspections year on year all processes are compliant.

We are aiming to create a sustainable and environmentally-friendly travel network within the city and surrounding areas for a number of reasons, including helping to improve air quality.

Our focus is on ensuring safer and more accessible active travel routes for walking and cycling, implementing a bus-led transport strategy, improvements to rail and promoting cleaner vehicles for trips that people continue to make by car.

We need to achieve the targets set for NO<sub>2</sub> levels in the district, focusing particularly on the specific areas within our Air Quality Management Areas where the annual mean levels still exceed the air quality objective.

Specific actions for Canterbury are set out in Table 5.1 and for Herne in Table 5.1a.

In this AQAP we outline how we plan to effectively tackle air quality issues within our control.

However, we recognise there are many air quality policy areas that are outside of our influence, such as vehicle emissions standards agreed in Europe, but for which we may have useful evidence.

We will continue to work with regional and central government on policies and issues beyond Canterbury City Council's direct influence.

This action plan sets out actions that can be considered under seven broad categories:

- Promoting Travel Alternatives
- Transport Planning and Infrastructure
- Public Information
- Traffic Management
- Promoting Low Emission Transport
- Policy Guidance and Development Control
- Freight and Delivery Management

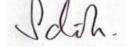
## Responsibilities and commitment

This AQAP was prepared by the Corporate Policy and Strategy Team at Canterbury City Council with the support and agreement of the following officers and departments:

- Transport and Environment
- Planning and Health
- Community Safety, Licensing Enforcement, Civil Enforcement and Environmental Crime
- Corporate Services

This AQAP has been approved by: Canterbury City Council Cabinet on 10 February 2025

This AQAP has been signed off by the Director of Public Health at Kent County Council.



Dr Ellen Schwartz – Deputy Director of Public Health (acting on behalf of the Director of Public Health Dr Anjan Ghosh) 17 December 2024

This AQAP will be subject to a review every five years, appraisal of progress and reporting to the Steering Group.

Progress each year will be reported in the Annual Status Reports (ASRs) produced by the Environmental Health team, as part of our statutory Local Air Quality Management duties.

### 1. Introduction

This report outlines the actions that Canterbury City Council will deliver between 2024-2029 in order to reduce concentrations of air pollutants and exposure to air pollution thereby positively impacting on the health and quality of life of residents and visitors to the Canterbury district.

It has been developed in recognition of the legal requirement on the local authority to work towards Air Quality Strategy (AQS) objectives under Part IV of the Environment Act 1995 and relevant regulations made under that part and to meet the requirements of the Local Air Quality Management (LAQM) statutory process.

This AQAP will be reviewed every five years for the period it remains in place and the latest and progress on measures set out within this plan will be reported on annually within Canterbury City Council's air quality Annual Status Report which is informed by data hosted by the Kent Air data website.

## 2. Summary of current air quality

Canterbury City Council (CCC) currently has two Air Quality Management Areas (AQMAs) within the district: one covers major roads in Canterbury city centre and the other covers a small section of Herne Street in Herne.

Canterbury is an attractive and popular regional centre and, although traffic flows on A roads are lower now than they have been historically, the city still attracts a large volume of daily commuters as well as school children, shoppers, university students and tourists, many of whom travel by private car.

The city centre roads are subject to frequent congestion in peak hours due to the high volume of vehicle movements on a historic layout of roads with residential properties in close proximity to the roadside and this also impacts on bus schedules.

In Herne, there is an air quality 'hotspot' at the mini roundabout. This is also because of high traffic volumes with residential properties in close proximity to the roadside.

#### **Modelling**

The council completed a review of air quality within both AQMAs in October 2023.

Dispersion modelling used a baseline year of 2022 to model concentrations without any actions from the AQAP.

Figure 1 and Figure 2 show modelled annual mean NO<sub>2</sub> concentrations at specific receptors in the 2022 baseline<sup>6</sup>.

<sup>&</sup>lt;sup>6</sup> Figures 1 and 2 are taken from https://www.canterbury.gov.uk/sites/default/files/2024-04/Air%20Quality%20Modelling%20Report.pdf

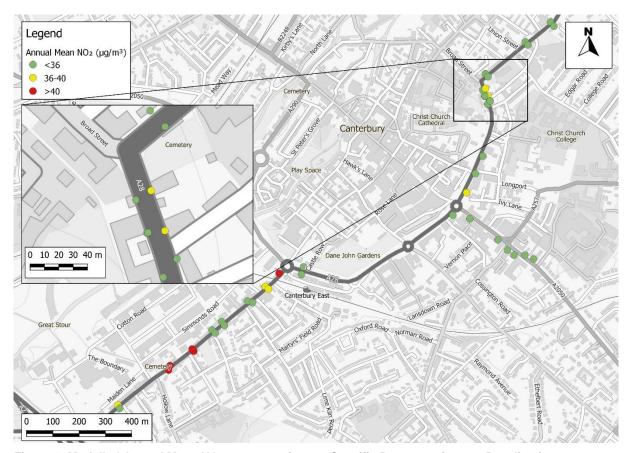


Figure 1: Modelled Annual Mean  $NO_2$  concentrations at Specific Receptors in 2022 Baseline in Canterbury.

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Figure 2: Modelled Annual Mean NO<sub>2</sub> Concentrations at Specific Receptors in 2022 Baseline in Herne

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#### **Annual Monitoring**

Nitrogen dioxide monitoring results show concentrations across the district are reducing overall.

In early 2020, activity in the UK was disrupted by the Covid-19 pandemic.

As a result, concentrations of traffic-related air pollutants fell appreciably<sup>6</sup>.

While the pandemic may cause long-lasting changes to travel activity patterns, it is reasonable to expect that more typical activity levels have returned.

Thus, 2020 is an atypically low pollution year for roadside pollutant concentrations, as is 2021.

Taking the long-term trend outside of these years, concentrations are reducing.

This is supported by work undertaken nationally, looking at long term trends in roadside concentrations<sup>7</sup>.

The 2023 automatic monitoring results show that both the long-term and short-term AQS objectives for NO<sub>2</sub> were met at the background station (CM1) and the roadside station (CM3) which are located within the Canterbury City AQMA boundary.

The 2023 diffusion tube results, which can be found at NO2 diffusion tube data - KentAir, show that measured annual mean NO2 concentrations were lower than 2022 results, with all the concentrations remaining below the annual mean objective for NO2. There is also no measured annual mean concentration that is within 10% of the objective<sup>8</sup>.

Measurements across the UK have shown that the one-hour mean nitrogen dioxide objective is unlikely to be exceeded at roadside locations where the annual mean concentration is below  $60 \mu g/m^3$ .

The annual mean NO<sub>2</sub> concentration did not exceed 60µg/m<sup>3</sup> at any monitoring location and therefore exceedances of the NO<sub>2</sub> one-hour mean objective at these locations is unlikely.

In addition, neither of the continuous NO<sub>2</sub> monitoring sites recorded any exceedances of the one-hour mean objective in 2023.

7 8 9

#### Conclusions

Although the review has shown that there has been a positive shift in air quality within the AQMAs, the modelling work indicates that there are still specific receptors that may have had exceedances of the annual mean objective in 2022.

These areas are in Wincheap at locations alongside the A28 (where concentrations remain within 10% of the objective in 2022) and in Herne close to the junction as shown in red on Figures 1 and 2, where levels are close to, or in one case exceeding, the annual mean objective.

For these reasons, the modelling indicates the AQMAs are still currently required and both the AQMAs remain as declared.

However, monitoring information from the recent ASR data is indicating that the situation is continuing to improve.

Further information on local air quality can be found in our ASR which is hosted on: https://www.kentair.org.uk/reports

<sup>&</sup>lt;sup>7</sup> Defra Air Quality Expert Group (2020) Estimation of changes in air pollution emissions, concentrations and exposure during the COVID-19 outbreak in the UK- Rapid evidence review

<sup>&</sup>lt;sup>8</sup> AQC (2022) Trends in UK NOx and NO<sub>2</sub> Concentrations – May 2022 Update, Available at <a href="https://www.aqconsultants.co.uk/getattachment/cfaa1005-0241-4f22-9f7e-c51f174d35bd/Trends-in-UK-NOx-and-NO2-Concentrations-May-2022-Update">https://www.aqconsultants.co.uk/getattachment/cfaa1005-0241-4f22-9f7e-c51f174d35bd/Trends-in-UK-NOx-and-NO2-Concentrations-May-2022-Update</a> .pdf.aspx?lang=en-GB

<sup>&</sup>lt;sup>9</sup> Canterbury City Council. (2023). 2023 Air Quality Annual Status Report (ASR).

# 3. Canterbury City Council's air quality priorities

#### 3.1 Public health context

Air pollution is a major public health risk ranking alongside cancer, heart disease and obesity.

The Department of Health and Social Care's advisory Committee on the Medical Effects of Air Pollutants (COMEAP) has estimated that long-term exposure to manmade air pollution in the UK has an annual impact on shortening lifespans, equivalent to 28,000 to 36,000 deaths (COMEAP, 2018).

Those most at risk from air pollution are the young, the elderly and those with predisposed medical conditions.

Poor air quality also disproportionately affects the poorest and most vulnerable in our communities.

The extent to which air pollution affects health is dependent upon time and duration of exposure, and air quality objectives are set to reflect both the short-term (acute) impacts on health, and those that are longer term (chronic) effects.

#### 3.2 Planning and policy context

#### Canterbury City Council Corporate Plan 2024 to 2028

The Corporate Plan sets out the council's ambitions to return pride to our district and has been developed to reflect the UN Sustainable Development Goals.

The Corporate Plan sets out four key priorities:

- Greener
- Fairer
- Better
- Stonger

Improving air quality is a key objective for the council and the Corporate Plan sets out a range of measures to complement the Air Quality Action Plan.

#### Canterbury Air Quality Action Plan 2018 - 2023

Our previous Air Quality Action Plan included measures to encourage faster uptake of less-polluting vehicles through provision of electrical charging points and incentives to adopt cleaner vehicle technologies using vehicle licensing arrangements.

Regionally and nationally, it was anticipated that actions in the <u>National Roadside</u> <u>NO<sub>2</sub> plan</u> and in the <u>2018 Clean Air Strategy</u> would have led to an improvement in the levels of background NO<sub>2</sub> across the district including the two AQMAs.

The 2018 AQAP aimed to achieve compliance by 2023 (the final year of the original plan) for the majority of the AQMA in Canterbury city and wholly achieve compliance in the Herne AQMA.

Trends show concentrations have been reducing significantly, as outlined in section 2 and compliance has been largely achieved, if not wholly achieved, in 2023.

#### Canterbury District Local Plan (2017) and Transport Strategy (2017)

The council's adopted Local Plan and Transport Strategy includes measures to improve air quality in the district, alongside the delivery of new development.

The Local Plan covers the period to 2031 and identifies a number of strategic development sites and associated infrastructure, such as for public transport and highways.

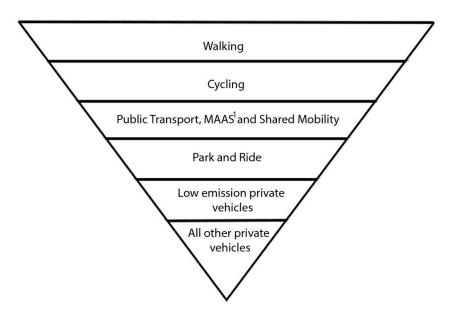
The 2018 AQAP reflected some of these key measures and, although the pace of housing delivery has been somewhat slower than expected many of these important infrastructure improvements are now progressing,

The Local Plan includes a range of policies to support improvements in air quality in the district, including ensuring that any proposals which might affect the designated AQMAs are appropriately mitigated.

#### Draft Canterbury District Local Plan (2040) and Draft Transport Strategy (2040)

A draft Local Plan was published for consultation (Regulation 18) in Spring 2024 and the council expects to reach Regulation 19 stage in Autumn 2025.

The draft Local Plan set out a clear hierarchy of transport modes which prioritises walking and cycling along with public transport.



**Figure 3: Hierarchy of Transportation:** mobility as a service (**MAAS**) means multi modal transportation services on one digital payment platform and includes cycle hire, car clubs, car sharing and public transport fares

Policy DS16 - Air quality in the draft Local Plan states proposals for major development in the district will be required to undertake an emissions mitigation assessment and cost calculation in line with the council's air quality guidance.

Proposals for major development within, or which would impact upon, designated Air Quality Management Areas will also be required to undertake an air quality assessment, in accordance with the guidance.

The new Local Plan and Transport Strategy are expected to be in place in 2027.

#### 3.3 Source apportionment

The AQAP measures presented in this report are intended to be targeted towards the predominant sources of emissions within the AQMAs based on a source apportionment exercise undertaken in 2023, as part of a wider modelling exercise<sup>10</sup>.

Using the outputs of the modelling (average fleet emissions across Canterbury and Herne AQMAs) and the background emissions from Defra background maps (see <a href="https://laqm.defra.gov.uk/air-quality/air-quality-assessment/background-maps/">https://laqm.defra.gov.uk/air-quality/air-quality-assessment/background-maps/</a> source contributions to the concentrations at those receptors modelled as exceeding the air quality objective in 2022 have been estimated.

<sup>&</sup>lt;sup>10</sup> For full report see https://www.canterbury.gov.uk/sites/default/files/2024-04/Air%20Quality%20Modelling%20Report.pdf

It is recognised there are some limitations to the methodology, in that proportion of emissions have been ascribed to concentrations and hence do not take into account the NO<sub>x</sub> to NO<sub>2</sub> relationship.

However, Figure 4 shows the background and road contribution to overall concentrations at six receptors in 2022, using the methodology set out in Technical Guidance TG22 (Box 7.5). It should be noted that vehicle categories which contribute less than 1% have been excluded from the graph for ease of interpretation.

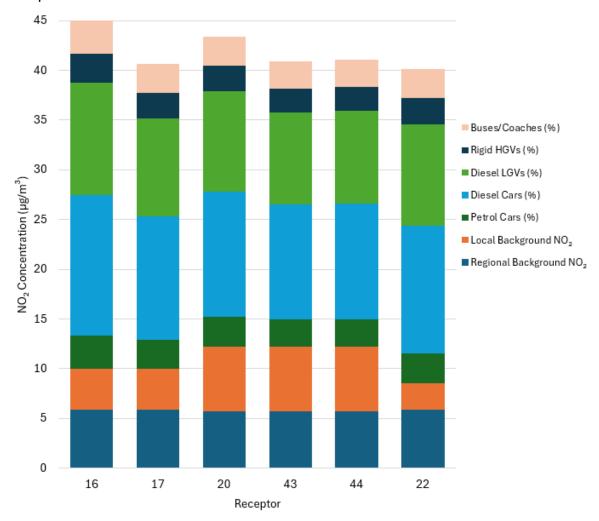


Figure 4: Source Apportionment at modelled receptors predicted to be exceeding the annual mean  $NO_2$  objective in 2022

The results shown in Figure 5 indicate that the highest proportion of road  $NO_x$  emissions in 2022 were produced by Diesel Cars, followed by Diesel LGVs, with Petrol Cars, Buses/Coaches and Rigid Heavy Goods Vehicles (HGVs) having a lesser contribution.

Vehicle Type	NOx (%)						
Petrol Cars	9.3						
Diesel Cars	39.3						
Petrol LGVs	0.0						
Diesel LGVs	31.4						
Rigid HGVs	8.0						
Artic HGVs	1.4						
Buses/Coaches	9.1						
Full Hybrid Petrol Cars	0.2						
Plug-In Hybrid Petrol Cars	0.1						
Full Hybrid Diesel Cars	0.9						
CNG Buses	0.0						
Hybrid Buses	0.1						

Figure 5: Air Quality Consultants, AQMA Review: Canterbury December 2023- Percentage Contribution of Total Road Emissions by Vehicle Type (2022)

It should be considered that Figure 4 considers background contributions and NO<sub>2</sub>, whereas Figure 5 considers percentage of road NO<sub>x</sub>.

#### 3.4 Required reduction in emissions

Based on the latest available evidence, it is considered he air quality objectives will be achieved by 2025 at the latest but are likely to have been achieved now (i.e. in 2023/24).

Monitoring is showing that in 2023 the air quality objectives were achieved at all locations by a margin of at least 10% (in most cases by much more), and there is a long-term downward trend in concentrations.

In terms of the modelling work undertaken, at the worst-case modelled receptor in Canterbury, a 16.4% decrease in 2022 road  $NO_x$  emissions <u>was modelled</u> as required to meet the objective.

The highest concentration in the 2022 modelling was also measured at this site, which is located at the roadside of Wincheap.

In the Herne AQMA, a modest 0.6% reduction in road  $NO_x$  emissions <u>was modelled</u> as required to achieve the objective, based on 2022 emissions.

The improvement in road NO<sub>x</sub> emissions required in order to meet the objective at model locations where concentrations exceeded the objective in 2022, is shown in Table 2, categorised by AQMA.

Modelled receptor		Annual Mean Contribution (μg/m³)												
	Modelled NO₂	Road NO <sub>x</sub> -	Road NO <sub>x</sub> -	· ·		% Decrease In								
	concentration	current (a)	required (b)	NO <sub>2</sub> (for	between a	road NO <sub>x</sub> to								
		(u)	(2)	information)	and b	meet objective								
	Canterbury AQMA													
16	46	76.2	63.7	10	12.5	16.4								
17	41.5	65.2	63.7	10	1.5	2.3								
20	44.3	67.3	58.8	12.2	8.4	12.5								
43	41.7	61	58.8	12.2	2.2	3.5								
44	41.9	61.5	58.8	12.2	2.6	4.3								
			Herne AQM	A										
22	41.1	67.2	66.9	8.5	0.4	0.6								

Table 2: Percentage Decrease in Road  $NO_x$  required to meet Annual Mean  $NO_2$  Objective at relevant modelled receptors( $\mu g/m^3$ ) in 2022.

The modelled concentrations in Table 2 have been run through the <u>roadside</u> <u>projection factors</u> issued by Defra, and all the modelled exceedances were resolved by 2023 other than at receptor 16 (objective predicted to be achieved by 2025) and receptor 20 (objective predicted to be achieved by 2024).

#### 3.5 Points to note

As set out in LAQM.TG (22) (Defra, 2022) paragraph 7.116, the required percentage reductions of local emissions are expressed in terms of NO<sub>x</sub> due to local road traffic.

This is because the primary emission is  $NO_x$  and there is a non-linear relationship between  $NO_x$  concentrations and  $NO_2$  concentrations.

The calculations use the 2022 modelled NO<sub>2</sub> concentrations, and the methodology set out in LAQM.TG (22) Box 7.6.

The road NO<sub>x</sub> - current concentration has been predicted using dispersion modelling.

The road NO<sub>x</sub> concentration required to give a total NO<sub>2</sub> concentration of 40  $\mu$ g/m<sup>3</sup> (road NO<sub>x</sub>-required) has been calculated using the NO<sub>x</sub> to NO<sub>2</sub> calculator by entering a total NO<sub>2</sub> concentration of 40  $\mu$ g/m<sup>3</sup>, along with the background NO<sub>2</sub> concentration.

The ratio of 'road NO<sub>x</sub>-required' to 'road NO<sub>x</sub>-current' gives the required percentage reduction in local road NO<sub>x</sub> emissions to achieve the objective.

#### 3.6 Key priorities

As outlined above, it is likely that the air quality objectives have been achieved at relevant locations. However, the need to reduce concentrations, even below the current air quality objective level is recognised, to maximise health improvements.

In terms of NO<sub>2</sub>, road transport is the largest source and therefore to reduce NO<sub>2</sub> concentrations, reductions need to focus particularly on diesel vehicles, cars.

As a result, the following priorities have been identified:

- implement committed infrastructure schemes to improve air quality;
- cars modal shift and sustainable transport strategies
- LGVs and HGVs explore low-emission vehicles for CCC fleet and last-mile delivery

# 4. Development and implementation of Canterbury City Council AQAP

#### 4.1 Consultation and stakeholder engagement

In developing this AQAP, we have worked with other local authorities, agencies, businesses, and the community to improve local air quality.

Schedule 11 of the Environment Act 1995 requires local authorities to consult the bodies listed in Table 4.1. In addition, the council undertook a 12-week public consultation which ran from March to May 2024.

The response to our consultation is summarised in Appendix A.

Table 4.1 – Consultation undertaken

Consultee	Consultation Undertaken
The Secretary of State	Yes

Consultee	Consultation Undertaken
The Environment Agency	Yes
The highways authority	Yes
All neighbouring local authorities	Yes
Other public authorities as appropriate, such as Public Health officials	Yes
Bodies representing local business interests and other organisations as appropriate	Yes

#### 4.2 Steering group

The AQAP officer steering group was created to help develop this AQAP and will continue to be involved in its implementation and monitoring.

The aim of the steering group was to collaborate and identify measures for inclusion within the AQAP that would be effective and deliverable.

The steering group typically meets on a quarterly basis to track progress and share information.

The steering group membership comprises representation from across CCC, including:

- Transport and Environment Team;
- Housing and Community Team;
- Corporate Services Team;
- Planning and Health Team;
- and Policy and Communications Team.

Kent County Council (public health) have also requested to be invited to future steering group meetings.

Measures identified in table 5.1 have been designed, discussed and agreed by the steering group.

## 5. AQAP measures

Table 5.1 shows the Canterbury City Council AQAP measures. It contains:

- a list of the actions that form part of the plan
- the responsible individual and departments/organisations who will deliver this action
- estimated cost of implementing each action (overall cost and cost to the local authority)
- expected benefit in terms of pollutant emission and/or concentration reduction
- the timescale for implementation
- how progress will be monitored

**NB:** The ASRs will provide annual updates on the progress we have made implementing these measures.

**Table 5.1 – Air Quality Action Plan Measures** 

Measur e No.	Measure	Category	Classification	Estimated year measure to be introduced	Estimated / actual completion year	Organisations involved	Funding source	Defra AQ grant funding	Funding status	Estimated cost of measure	Measure status	Target reduction in pollutant / emission from measure	Key performance indicator	Progress to date	Comments / potential barriers to implementation
1	Review, promote and Implement CCC staff travel plan to encourage active and sustainable modes of transport	Promoting travel alternatives	Workplace travel planning	2024	2025	CCC/ Stagecoach	Internal	No	Notfunded	<£10k	Planning	>0.5µg/m³	Uptake of alternative travel schemes by CCC staff	The staff travel plan has been updated as part of the office accommodation project which offers no on-site parking spaces.	Office move to a central location with no on-site parking is programmed for spring 2025. The staff travel plan will then be fully implemented. Alternative modes of transport include park and ride and cycling
2	Plan and promote Active Travel measures across the district	Transport Planning and Infrastructure	Cycle network	Ongoing	2029	CCC/KCC	CCC/KC C	No	Funded	£500k - £1 million	Planning	0.5-1 μg/m³	Number of improvements delivered	Various cycle infrastructure projects from District Transport Strategy already completed including: Canterbury Riverside cycle improvements first and second stages completed by 2021. Longport to Burgate cycle	Cycle Hire Scheme under development. Additional schemes include: Canterbury Riverside additional works. Wincheap and Thanington network improvements. Improvements to existing routes for the Tannery, St Stephens.

														route improvements.	
3	Behaviour change campaigns to reduce idling at key areas across the district	Public Information	Other	Ongoing	2029	ccc	ccc	No	Funded	<£10k	Implementati on	>0.5µg/m³	Number of warnings, number of campaign events	Campaign ongoing. Anti- idling enforcement started in June 2022.	Signage installed at major locations. School safety operations conducted regularly. Currently 100% compliance with anti-idling enforcement.
4	Road network improvements	Traffic Management	Strategic highways improvements	2025	2028	CCC/KCC	Developer s	No	Funded	> £10 million	Implementati on	>1 μg/m³	Report on completion of works and change to traffic flows	Stage 1 Herne Relief Road completed 2023/24 Further improvements ongoing	Delivery of schemes dependent on pace of development.  Wincheap slip road and gyratory expected to be delivered by 2026/7. Sturry Relief Road expected to be delivered by 2027. Herne Relief Road Stage 2 expected to be delivered by 2028.
5	Work with stakeholders to improve bus services and routes and encourage uptake of use	Transport Planning and Infrastructure	Bus route improvements	2025	2029	CCC/KCC/ Stagecoach	CCC/ Developer s/ KCC	No	Partially Funded	£1million - £10million	Planning	0.5-1 μg/m³	Improved journey times and increased patronage	Various bus infrastructure projects from District Improvements made to bus	Wincheap Gyratory bus lane expected to be delivered by 2026. Completion of Sturry bus lanes

														stop infrastructure at various locations in the district.  Park and Ride bus services procured to Euro 6 Standard in 2020.	expected to be completed by 2028.  New Dover Road bus lane and Fast bus scheme linked to South Canterbury Development. Expected to be delivered within 5-10 years.
6	Transition CCC fleet vehicles, including HGVs, to low emission alternatives	Promoting Low Emission Transport	Company Vehicle Procurement- Prioritising uptake of low emission vehicles.	2024	2026	CCC/ Canenco	CCC/ Canenco	No	Partially Funded	£500k - £1 million	Planning	0.5-1 µg/m³	Number of fleet vehicles switched to low emission alternatives	Nine electric vans already delivered.	Scheme for fuel alternatives for RCVs within the refuse fleet form's part of 2025/26 budget proposals.  Consider further options for decarbonisation of CCC fleet, including HGVs, such as through vehicle or fuel alternatives.
7	Development/impro vement of low emission (EV) infrastructure	Promoting Low Emission Transport	Procuring alternative refuelling infrastructure to promote low-emission vehicles, EV recharging, gas fuel recharging	Ongoing	Ongoing	ccc/kcc	ccc	No	Funded	£100k - £500k	Implementati on	>0.5µg/m³	Number of EV charging points installed per year	Various EV charging points secured and installed on new development sites through planning consents. Approximately 50 EV charging points installed in CCC car parks across the district.	Additional schemes include:  New programme underway to secure further roll out of charging points installation in CCC car parks.  KCC roll out of onstreet EV charging expected to commence in 2025/26.
8	Local Plan policy and guidance	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2025	Ongoing	ccc	ccc	No	Funded	<£10k	Planning	>0.5µg/m³	Implementation of policy	Air quality mitigation is being secured for all new strategic development	Draft Local Plan, Transport Strategy and Parking Standards now under development and expected to

														sites, including EV points in line with adopted planning policies.	further strengthen policy requirements.
9	Plan and implement innovative solutions to reduce freight traffic in the city centre	Freight and Delivery Management	Freight partnerships for city centre deliveries	2027	Ongoing	ccc	ccc	No	Not Funded	£1million - £10million	Planning	>0.5µg/m³	Reduction of non-EV freight vehicles in the city	Planning phase	Draft Local Plan and Transport Strategy now under development and expected to identify specific projects such as for goods transfer stations and last mile delivery.
10	Implement air quality campaigns	Public Information	Other	Ongoing	Ongoing	ccc	ccc	No	Funded	<£10k	Implementati on	>0.5µg/m³	Number of campaigns and projects delivered	Ongoing	Various actions including:  Webpages kept updated and improved with anticidling and Electric Vehicle charging information  Clean Air Day promotion on social media and Variable Message Signs.  Promotion of Park and Ride
11	Local air quality monitoring within district	Public Information	Other	2022	2027	CCC/ Ricardo	DEFRA	Yes	Funded	£100k - £500k	Implementati on	N/A	Recorded concentration	Ongoing	Successful delivery of new air quality monitoring devices. Annual publication of ASR recording air quality.

#### 5.1 Timescales of the AQAP Measures

Several measures outlined in Table 5.1 started prior to the end of the current AQAP and the proposed introduction of this plan, with parts of the measures such as our antiidling campaigns being successfully implemented.

The target completion year for some our measures is 2029 but many will be delivered before that.

A small number of measures are linked to the adoption of the new Local Plan and Transport Strategy, and we may need to review the completion dates for these measures in due course.

For the measures which remain incomplete by this date, examination of implementation barriers will be conducted, and necessary resolutions will be designed with a new timetable posted and the measures reviewed.

#### 5.2 Future measures to maintain the objective

CCC will continue to monitor local air quality and providing analyses within the ASRs to ensure the objectives are maintained in the future.

Should monitoring continue to indicate ongoing compliance over the coming years, the council will look to revoke the AQMAs and develop an Air Quality Strategy for the district.

#### 6 Quantifications of measures

#### **6.1 Assumptions**

By virtue of their nature or type, most of the action plan measures set out in Table 5.1 will prove difficult to quantify in terms of specific values in emissions reductions.

No detailed studies have been completed of our measures however professional judgement has been applied, in line with Defra guidance.

On a highly-precautionary basis, we have taken conservative reduction values for emissions to not overstate the impact of any specific measure.

Some measures may allow for a high-level analysis or modelling to be used to illustrate a potential reduction in emissions, but this analysis can be undertaken as the schemes progress through delivery. A summary consideration of the measures and whether they can be quantified is contained in below.

Table 6.1 – Assumptions around quantification of measures

Measure	Measure	Assumptions for Quantification	Assumed reduction in AQMA		
No.			AQMA Wincheap	AQMA Herne Bay	
1	Review, promote and implement CCC staff travel plan to encourage active and sustainable modes of transport	We are assuming reduced direct travel due to office move and the lack of city-based parking available for staff which would lead to improved use of Park and Ride or alternative travel options. Reduction based on professional judgement. As our office move has been delayed no further detail is available at this time.	<0.5µg/m³	<0.5µg/m³	
2	Plan and promote Active Travel measures across the district	Reduction in emissions would be based on uptake of alternative transport measures taken. Currently we are unable to measure the number of private vehicles removed from the road in favour of more sustainable transport methods	0.5-1 μg/m <sup>3</sup>	0.5-1 μg/m <sup>3</sup>	
		Reduction is based on professional judgment.			
		Improvements to be monitored over time.			
3	Behaviour change campaigns to reduce idling at key areas across the district	Reductions would be localised. At key points in the city, we would expect to see an impact on emissions and a reduction in expose to emissions as idling would be stopped. Due to the restricted impact, there is insufficient modelling/monitoring so it is difficult to quantify the exact impact this measure would have. Insufficient detail to quantify measure. Reduction is based on professional judgment.	<0.5µg/m³	<0.5µg/m³	
4	Road network improvements	In terms of the Wincheap slip road and gyratory scheme, the Air Quality Assessment for Wincheap Slip Road application shows a modelled reduction of between 0% and 3% reduction based on the completion of the development. The assessment was undertaken by the developer to assess the implications for the proposal of air quality in the area. The work was subject to appraisal and verification by CCC AQ officers. It should be noted that this does not necessarily mean an overall reduction of emissions in the city, but more a dispersion based on the redirection of traffic flows.  Modelling is not available for the Herne relief road currently, but the any overall reduction could be again linked to dispersion and so direct impact to the Herne AQMA could be considered minimal. However, moving traffic flows to a road external to the town centre will lead	<0.5µg/m³	<0.5µg/m³	

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		to a reduction to emissions and potential exposure for residents of that area.		
		Although some modelling can be used to indicate impact on the AQMA reduction is primarily based on professional judgement due to lack of detailed studies.		
5	Work with stakeholders to improve bus services and routes and encourage uptake of use	Insufficient detail to quantify measure. Reduction is based on professional judgment.  Improvements to be monitored over time.	<0.5 μg/m³	0.5-1 μg/m <sup>3</sup>
6	Transition CCC fleet vehicles, including HGVs, to low emission alternatives	Impact of alternative fuel source or alternative vehicle technology for fleet will have a large impact on our direct fleet emissions and will help to reduce emissions and limit exposure in the longer term. However, insufficient detail to quantify measure at this stage as work is needed for feasibility and procurement studies, so reduction is based on professional judgement and is conservative estimate.	<0.5 μg/m³	<0.5 μg/m³
7	Development/improvement of low emission (EV) infrastructure	Reduction will be dependent upon uptake of new EV technologies and availability of charging facilities.  Currently with chargers installed in council operated car parks we are providing additional options for EV vehicle users. On road chargers provided by KCC will further increase charging options available and encourage adoption of electric vehicles. However, change will only be measurable based on the increased usage of EVs by district residents and visitors.	>0.5µg/m³	>0.5µg/m <sup>3</sup>
		Due to these factors' reduction based on professional judgement at this time with the potential to use any new survey material or ANPR data at the time of next review to provide modelling.		
8	Local Plan policy and guidance	Policy measures will lead to improvements in air quality and help to further reduce exposure in the district however it is not currently possible to quantify the overall effect the measure will have due to the time needed to implement and review the impact of guidance and ensure that every party involved acts based on that guidance. Reduction is based on professional judgement.	0.5-1µg/m³	0.5-1µg/m³
9	Plan and implement innovative solutions to reduce freight traffic in the city centre	Insufficient detail to quantify measure currently as measure is still developing as part of draft Local Plan and Transport Strategy for the district. Reduction is a conservative estimate based on professional judgment and scope of measure impact within the AQAP time frame.	>0.5µg/m³	N/A
10	Implement air quality campaigns	Measures will lead to improvements in air quality for the district however it is not possible to quantify the overall effect the measure will have as any reduction is dependent on behaviour change.  Reduction is based on professional judgement.	>0.5µg/m³	>0.5µg/m³
11	Local air quality monitoring within district	Measures will lead to improvements in air quality for the district however it is not possible to quantify the overall effect the measure will have. Reduction is based on professional judgement.	N/A	N/A

## **6.2 Cost Benefit Analysis of measures**

#### 6.2.1 Methodology

Using the above assumptions around the quantitative pollution reduction and assumed costs, each measure was given a score as set out below.

Table 6.2 - Cost Score

Costs			
Score	Approximate Cost (£)		
7	< £10k		
6	£10k - £50k		
5	£50k - £100k		
4	£100k - £500k		
3	£500k - £1m		
2	£1m - £10m		
1	> £10m		

Table 6.3 - Benefit Score

Air Quality Impacts				
Score	Indicative Reduction in NO <sub>2</sub> Concentrations			
7	>5 μg/m³			
6	4-5 μg/m³			
5	3-4 μg/m³			
4	2-3 μg/m³			
3	1-2 μg/m³			
2	0.5-1 μg/m³			
1	<0.5 μg/m³			

Using the scores above, the below matrix was implemented to work out the costbenefit. Higher scores are awarded for those measures which are cheapest with the greatest effect, with the lowest scores awarded for those which will be costly with limited reduction in pollution.

**Table 6.4 Cost Benefit Analysis Matrix** 

		Estimated Reduction in Pollutant Concentrations						
		>0.5µg/m <sup>3</sup>	0.5-1 μg/n	$1-2 \mu g/m^3$	2-3 μg/m <sup>3</sup>	$3-4 \mu g/m^3$	4-5 μg/m <sup>3</sup>	<5 μg/m³
	<	Ī						
	£10k	7	14	21	28	35	42	49
	£10k							
	-							
	£50k	6	12	18	24	30	36	42
41	£50k							
Ω̈́	-							
eas	£100k	5	10	15	20	25	30	35
Cost of Measure	£100k							
	-							
	£500k	4	8	12	16	20	24	28
	£500k							
	- £1m	3	6	9	12	15	18	21
	£1m -							
	£10m	2	4	6	8	10	12	14
	>							
	£10m	1	2	3	4	5	6	7

**Table 6.5 Feasibility Score** 

Feasibility Score	Score
Measure has already been started and just requires progressing	7
Very easy to implement, and political support, sufficient resources	6
Relatively easy to implement, resources available	5
Possible to implement but may require some learning/campaigning, moderately time intensive	4

Challenging but still feasible, may require additional support and resources	3
Difficult to implement, no political appetite, time and resource intensive	2
Very difficult to implement, no political appetite, time and resource intensive	1

#### **6.2.2 Cost Benefit Analysis**

Using the above methodology, we can present the findings of a cost benefit analysis. Measures can be ranked based on cost and feasibility, and this will be demonstrated in the table below. The feasibility of a measure has been judged by our steering committee by using the cost benefit and the barriers/progress outlined in the measures themselves.

**Table 6.6 Cost Benefit Analysis of Measures** 

Measure No.	Measure	Cost Score	Air Quality Effect Score	Feasibility Score	Overall Scoring
1	Review, promote and implement CCC staff travel plan to encourage active and sustainable modes of transport	7	1	6	42
2	Plan and promote Active Travel measures across the district	3	2	6	18
3	Behaviour change campaigns to reduce idling at key areas across the district	7	1	7	49
4	Road network improvements	1	1	5	5
5	Work with stakeholders to improve bus services and routes and encourage uptake of use	2	1	5	10

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6	Transition CCC fleet vehicles, including HGVs, to low emission alternatives	3	1	4	12
7	Development/improvement of low emission (EV) infrastructure	4	1	7	28
8	Local Plan policy and guidance	7	2	7	49
9	Plan and implement innovative solutions to reduce freight traffic in the city centre	2	1	3	6
10	Implement air quality campaigns	7	1	7	49
11	Local air quality monitoring within district	4	1	7	28

# • Appendix A: Response to Consultation

Table 7.1 – Summary of Responses to Consultation and Stakeholder Engagement on the AQAP

Consultee	Category	Response
Measure 1: Anti-idling enforcement	Not possible to enforce measure. Council must take a lead on communications and behaviour changes. Lack of timescales or cost/benefit analysis	Anti-Idling campaign is currently ongoing. Signage has been put in place at major locations such as railway crossings. Enforcement staff capacity is an ongoing challenge due to other engagement projects and statutory requirements. We conduct school safety operations regularly and as part of this educate the public with regards to switching their engine off when stationary. We have 100% compliance to date and no penalties issued.
Measure 2: Promote travel alternatives	Costly improvements to alternative transport do not work unless people use them. Cycle lane on Littlebourne Road is currently claimed to be unused. Interventions will not be sufficient to achieve the reductions of vehicular traffic which would impact emissions.	Modal shift is part of a transformative change which will encourage the behaviour of our residents to take up alternative transport options. The infrastructure and opportunities must be provided before we can actively encourage this shift.  Timescales will need to be flexible as some transport options will only be available as developers complete some sections of a planned development.  Although some people will still choose to use their own private vehicles, we aim to provide desirable and affordable alternatives that will encourage residents to choose sustainable transport options.

Consultee	Category	Response
	Lack of cost benefit analysis and timescales.	
Measure 3: CCC Staff Travel Plan	Park & Ride still requires driving to the allocated areas and so pollution is just moved instead of reduced.  As no bespoke parking for Council Officers it will likely increase use of buses and car shares for commuting.	Park and Ride is a fundamental step in offering affordable parking external to the city centre. Although residents and visitors will use their own cars to arrive at a Park and Ride, by offering parking sites outside of the city centre we can aim to improve air quality for our residents in the city. We will consider options for low emission vehicles over the period of the AQAP.  As some of our Park and Ride sites are already operational our staff would be using these when the office relocation is complete.
	Lack of timescales or cost benefit analysis.	
	Interventions planned will not be sufficient to	The adopted Transport Strategy has been designed with the modal shift at the forefront. Making public transport more available and accessible to everyone in the district is the first step in encouraging that change.
Measure 4: Improvements to bus services	create the modal shift required.  Lack of timescales/ cost benefit analysis	Replacing current transport infrastructure with low-emission transport options would help to reduce emissions. However, there are many more smaller scale changes which would help to encourage residents to choose these transport options and reduce the scale of private car use.

Consultee	Category	Response
Measure 5: Managing freight traffic	Delivery transport in increasing.  Support for Last Mile delivery concept and use of low emissions delivery vehicles for onward delivery of goods.  Lack of timescales/cost benefit analysis	The concept of a last mile delivery or use of Park and Ride sites as hubs for onward delivery would help to limit the number of additional delivery vehicles entering city daily and would reduce congestion as well as reducing emissions.  As this is a long-term measure in concept phase there are no defined timescales or costs to be detailed.  This measure would likely evolve alongside the Transport Strategy together with technological innovations as a long-term consideration.
Measure 8: Park and ride	Support for the re- opening of Sturry Park & Ride and creation of further Park & Ride sites. Further development suggested to create secure cycle storage.  Lack of timescales and cost benefit analysis for measure.	Sturry Park and Ride has recently reopened. Options for additional Park and Ride facilities will be considered as part of the new Local Plan and Transport Strategy.  The emerging Transport Strategy envisages that park and ride sites will evolve as transport hubs with the potential to switch to more sustainable modes for last mile journeys into the more congested areas of the city with park and pedal being a potential part of this solution.
Measure 9: Cycle route improvements	Costly improvements to alternative transport do not work unless people use them. Expectation	Modal shift is part of a transformative change which will encourage the behaviour of our residents to take up alternative transport options.

Consultee	Category	Response
	of large uptake in cycling is unrealistic. Many deterrents such as weather, health, safety, and limited use.	
	Although cycling routes are commendable more needs to be done to reach the 85% increase in journeys. Comprehensive mapping of cycle routes and plan for improvements to signage and signposting for these routes.	
	Static and slow moving traffic increases pollution.	
Measure 11: Road network improvements	Measures of road network improvements are the most likely to have a swift reduction to pollutants. However implementation is likely	Current Annual Status Review of air quality is underway. However, the improvements planned for the A2 have not been completed and some projects are yet to start. The AQAP includes measures to monitor air quality over time.

Consultee	Category	Response
	to be time consuming and faster measure should be implemented where possible.	
	Lack of timescales and cost benefit analysis.	
	A2 Scheme at Wincheap and A2 interchange at Bridge. The A2 Harbledown scheme is listed as potential. Clarification needed on whether purposes of air quality assessments match with assumptions.	
Measure 12: Rail network improvements	Integration of rail and bus are essential if modal shift and the reduction of harmful emissions are to be achieved. Ticketing improvements, hopper bus service and accessible information	The adopted Transport Strategy focuses primarily on increasing access and improving the quality of public transportation across the district.

Consultee	Category	Response
	is needed for all stations and routes.	
	Lack of timescales and cost benefit analysis provided.	
Measure 14: CCC low emission fleet	Token Gesture when CANENCO remain (due to costs) diesel driven.	
	Lack of timescales and cost benefit analysis.	
	Lack of infrastructure at CANENCO depots which limits scope of transition to electric vehicles. Electric Vehicles are more expensive and models offered are not always suitable or available for service.	The AQAP includes measures to assess the scope for alternative fuel or vehicle technologies for the CCC fleet over the period of the AQAP.
	Expansion of electric hands tools for grounds maintenance purposes.	

# • Appendix B: Reasons for not pursuing action plan measures

Table 8.1 – Action plan measures not pursued and the reasons for that decision

Action category	Action description	Reason action is not being pursued (including stakeholder views)
Traffic management	Explore opportunities to enhance sustainable transport hub at Canterbury West station – as a result of new multi-storey	Instead of a transport hub as originally planned a new multi storey car park was introduced next to the station.
Freight and delivery management	Work with local freight companies and visit coaches to promote driver education, training and engine cleaning to reduce emissions	No freight relations network during the time of the AQAP. This may be something developing out of the new AQAP.
Transport planning and infrastructure	Work with KCC and developers to increase the number of bus lanes: Sturry Road bus lane missing links Wincheap relief road – bus lane through retail estate	These bus priority schemes together with additional measures are included in the draft Canterbury district transport strategy

	. New Dover Road bus lane associated with Phase 1 of Mountfield Park development site . Introduce a fast bus route between south Canterbury and city centre	
Regulations for fuel quality	Explore expansion of smoke control area	There are currently no plans in place to expand the smoke control area in place.
Traffic Management	Feasibility of low emission zone (LEZ): Explore feasibility of introducing a low emission zone in Canterbury City Centre (A LEZ can prohibit, or discourage, specific vehicle types in lower emissions classes from entering a geographic area.	Due to lack of inclusion in the draft LTP support for the use of CAZ and LEZ in Kent, and a lack of inclusion as a transport measure in the draft transport strategy, this is currently not being progressed as a CCC AQ action. We will review annually along with the action plan, should policy change.
Promoting Travel Alternatives	From adopted AQAP- 2017: 8 Investigate reducing traffic delays at level crossings and minimise time that level crossing gates are down - Trackside detectors - reduce crossing time  From Draft AQAP- 2023: Measure 12- Rail network improvements:	Canterbury Council recognises the importance of efficient rail travel and what it can offer to residents and visitors of the district and will continue to promote rail as an alternative transport measure outside of this AQAP.  The measures relating to rail travel have been removed as none of them are programmed for implementation within the period of this AQAP.

# Glossary of terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
AQS	Air Quality Strategy
ASR	Air quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
EU	European Union
LAQM	Local Air Quality Management
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Nitrogen Oxides
PM <sub>10</sub>	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM <sub>2.5</sub>	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
μm	Unit of measurement. Microns, known as micrometres, a length of measurement equal to one millionth of a metre. For reference 1,000µm is equal to 1 mm.

EFT	Emissions Factor Toolkit- It is a tool that allows users to calculate road vehicle pollutant emission rates for oxides of nitrogen (NO <sub>x</sub> ) and particulate matter (PM - PM10 and PM2.5), for a specified year, road type, vehicle speed and vehicle fleet composition.
ccc	Canterbury City Council
Maas	Mobility as a service means multi modal transportation services on one digital payment platform and includes cycle hire, car clubs, car sharing and public transport fares