

# Cheshire West and Chester Council Air Quality Action Plan for Chester city centre

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

September 2019



## Cheshire West and Chester Council

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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 air quality in Cheshire West and Chester Council (CWAC – the Council) between 2019 and 2022.

This AQAP is to be produced in response to the declaration of Chester city centre AQMA in May 2017.

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<sup>1,2</sup>.

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion<sup>3</sup>. CWAC is committed to reducing the exposure of people in CWAC to poor air quality in order to improve health.

We have developed actions that can be considered under 5 broad topics:

- **Transport** – Provision of additional transport infrastructure; changes to road layout or operation; formulation of traffic plans with the aim being to encourage the use of greener modes of transport, and/or reduce congestion and associated vehicle emissions
- **Public health** – Encouragement of wider behavioural changes in local population with respect to their travel choices, raise awareness and educate members of the public on the impact of air pollution
- **Planning and infrastructure** – Mitigate potential air quality impacts effectively by being involved in decision making early on for future developments required to support the growth of CWAC.

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<sup>1</sup> Environmental equity, air quality, socioeconomic status and respiratory health, 2010

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

<sup>3</sup> Defra. Abatement cost guidance for valuing changes in air quality, May 2013

## Cheshire West and Chester Council

- **Strategies and policy guidance** – Working with partners and stakeholders to direct the use of legislation and targeted enforcement to control air pollution
- **Air quality monitoring** – Ensure satisfactory air quality monitoring data is available to track outcomes of the implemented AQAP measures.

The primary focus of the AQAP is to implement measures which will ensure levels of nitrogen dioxide (NO<sub>2</sub>) across Chester, and specifically within the AQMA, are consistently below the threshold of 40 micrograms per cubic metre (µg/m<sup>3</sup>) expressed as an annual mean – this is the level currently regarded as safeguarding the most vulnerable in society against the impacts of NO<sub>2</sub>.

In this AQAP we outline how we plan to effectively tackle air quality issues within our control. However, we recognise that there are a large number of 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, and so we will continue to work with regional and central government on policies and issues beyond CWAC's direct influence.

## Responsibilities and commitment

This draft AQAP was prepared by the Bureau Veritas on behalf of CWAC with the support and collaboration of officers in the following Council service departments:

- Licensing;
- Transport Commissioning;
- Regulatory;
- Parking;
- Strategic Transport;
- Planning Policy;
- Planning – Development Control;
- Economic Development;
- Highways;
- Fleet Management; and
- Public Health.

## **Cheshire West and Chester Council**

Once adopted, this AQAP will be subject to an annual review, appraisal of progress and reporting to the relevant Council committee. Progress each year will be reported in the Annual Status Reports (ASRs) produced by CWAC, as part of our statutory Local Air Quality Management duties.

If you have any comments on this AQAP please send them to Environmental Protection at:

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# 1. Introduction

This report outlines the actions that Cheshire West and Chester Council (CWAC) will seek to deliver between 2019-2022 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 CWAC's administrative area.

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 Plan will be reviewed every five years at the latest and progress on measures set out within this Plan will be reported on annually within CWAC's air quality ASR.



## **2. Summary of current air quality in Cheshire West and Chester Council**

Cheshire West and Chester covers a large geographic and demographically diverse area and is the fourth largest authority in the North West. It is home to over 329,000 people who live in Cheshire West with over 160,000 people working in the borough.

The area is characterised by attractive countryside, varied landscapes and diverse settlements ranging from the historic city of Chester to small rural hamlets. Chester, Ellesmere Port and Northwich dominate the northern part of the borough and sit within or adjoining the North Cheshire Green Belt which covers 42 percent of the borough's land area.

The city of Chester is the borough's largest settlement with over 81,000 residents and is a key centre for employment, retail, education and tourism as well as being a main transport interchange and gateway, with direct routes to London, Manchester, Merseyside and North Wales. The city is internationally renowned as a historic city with unique heritage assets particularly Roman remains, the City Walls and medieval Rows. The role of the city as a destination for shoppers has weakened due to increased competition not only from larger centres such as Liverpool but at a local level from the significant expansion and changing retail offer from out of centre retail parks and out of town shopping centres, in particular Cheshire Oaks.

### **2.1 Chester city centre AQMA**

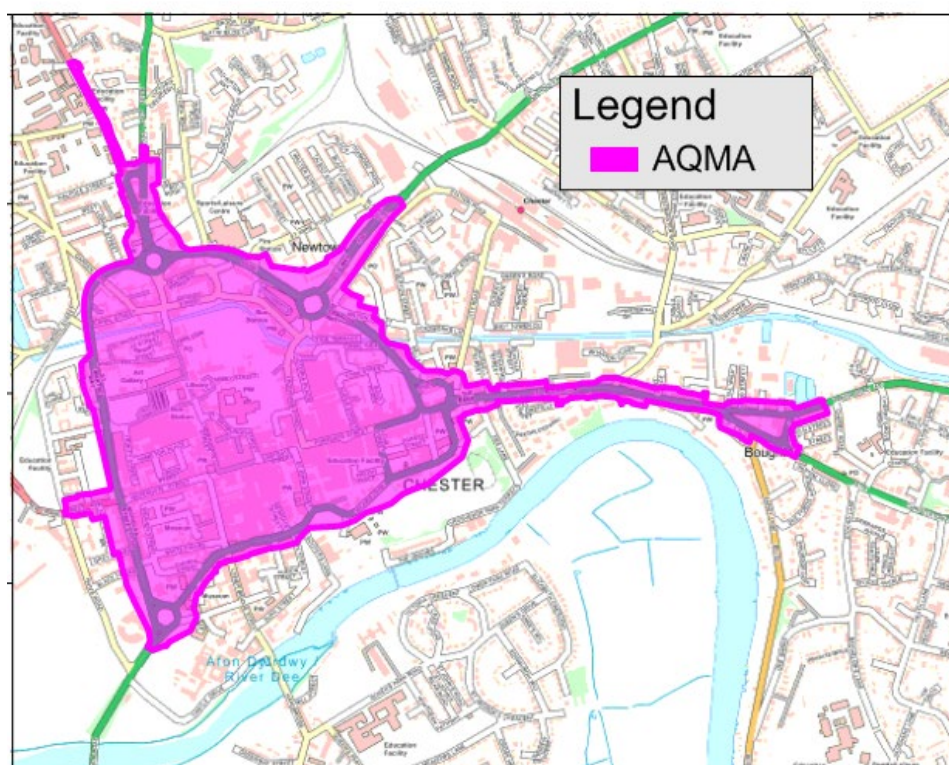
There are currently four air quality management areas (AQMA's) in the borough. They are namely:

- Whitby Road / Station Road, Ellesmere Port – declared in May 2005
- Fluin Lane, Frodsham – declared in November 2015
- Thornton-le-Moors – declared in September 2016
- Chester City Centre – declared in May 2017

Across three of the AQMA's (Whitby Road / Station Road, Fluin Lane and Chester City Centre) the source of the problem is nitrogen dioxide (NO<sub>2</sub>) from road traffic. In Thornton-le-Moors it is sulphur dioxide (SO<sub>2</sub>) from industrial sources that has led to our declaration of an AQMA.

This AQAP focuses on measures to improve air quality within the Chester city centre AQMA, with the pollutant of principal focus therefore being NO<sub>2</sub>. Our on-going plans to improve air quality in the other AQMAs are presented elsewhere<sup>4</sup>. The boundaries of the Chester city centre AQMA are illustrated in Figure 2.1.

**Figure 2.1 – Chester city centre AQMA**



## 2.2 Recent monitoring

The Council continues to monitor levels of air pollution across the borough. In 2018 we undertook automatic (continuous) monitoring at seven sites and non-automatic (passive) monitoring of NO<sub>2</sub> at 85 sites. In addition, monitoring is undertaken for particulate matter (PM) and sulphur dioxide (SO<sub>2</sub>), although these do not form the focus of the city-wide AQMA.

There are forty four diffusion tubes and two automatic monitoring stations within the Chester city centre AQMA. Two sets of the diffusion tubes are collocated with the automatic monitoring sites for the purposes of cross comparison: diffusion tubes are less accurate in their determination of levels of NO<sub>2</sub> and comparing results between

<sup>4</sup> Action plans for the Ellesmere Port, Fluin Lane and Thornton le Moors AQMA are available at: <https://www.cheshirewestandchester.gov.uk/residents/pests-pollution-food-safety/pollution-and-air-quality/air-quality-review-and-assessm.aspx>

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these and the more accurate continuous methods allow us to understand any issues with precision and bias in diffusion tubes that can subsequently be taken into account.

Exceedances of the NO<sub>2</sub> annual mean objective were recorded at a number of relevant locations in 2018, all of which lie within the existing AQMA. As no exceedances were recorded outside of the AQMA, there is no need to declare or extend the AQMA based on monitoring alone.

In 2018, the NO<sub>2</sub> annual average objective was exceeded at ten locations in the Chester City Centre AQMA as shown in Table 2.1. Following distance correction to locations of nearby relevant exposure, the results from six of these locations (C11, C36, OB, PG, RM and T6) are deemed to be representatively exceeding at locations of relevant exposure within the AQMA.

**Table 2.1 – NO<sub>2</sub> Annual mean concentrations above 40µg/m<sup>3</sup> within Chester city centre AQMA**

Site ID	Site name	Road type	Monitoring type	Grid ref		Annual mean concentration
				X	Y	
CBI	Chester	Roadside	AM	340645	366802	40.0
C11	Christleton Road (11)	Roadside	DT	341915	366427	41.1
C36	Christleton Road (36)	Roadside	DT	342000	366374	47.6
OB	Boughton (105)	Roadside	DT	341633	366510	44.8
OW	St Oswalds Way	Roadside	DT	340623	366823	43.6
PA	Parkgate Rd (19)	Roadside	DT	340313	367014	41.2
PG	Parkgate Road (5)	Roadside	DT	340322	366989	45.2
RM	Rock Mount	Roadside	DT	340291	367108	45.7
ST	St Annes Place	Kerbside	DT	340794	366778	42.4
T6	Tarvin Road (6)	Roadside	DT	341926	366446	43.6

Although the AQMA is not declared on particulate matter, the Council continues to monitor PM. Results for PM<sub>10</sub> – a size fraction of PM no more than 10 microns in diameter - are complied with in the borough. Local data also suggests that PM<sub>2.5</sub> levels at background sites are well below the UK objective and EU limit values. Further details of the monitored PM<sub>10</sub> and PM<sub>2.5</sub> concentrations within our jurisdiction are available within our Annual Status Reports<sup>4</sup>.

## 2.3 Source apportionment

The AQAP measures presented in this report are intended to be targeted towards the predominant sources of emissions within the AQMA. A source apportionment exercise was carried out using an air dispersion model to assess the overall emissions profile of vehicles moving through the Chester city centre AQMA and to establish whether a particular class of vehicle is a key contributor to high levels of pollution in the AQMA.

Emission sources of NO<sub>2</sub> are dominated by a combination of direct NO<sub>2</sub> (f-NO<sub>2</sub>) and oxides of nitrogen (NO<sub>x</sub>), the latter of which is chemically unstable and rapidly oxidised upon release to form NO<sub>2</sub>. Reducing levels of NO<sub>x</sub> emissions therefore reduces levels of NO<sub>2</sub>. As a consequence, the source apportionment study has considered the emissions of NO<sub>x</sub> which are assumed to be representative of the main sources of NO<sub>2</sub>.

The methodology to achieve this involves dispersion modelling of road traffic emissions. Emissions were attained using the traffic data obtained from a combination of sources – namely, that provided directly by the Council and figures taken from the Department for Transport (DfT) Traffic Counts web resource<sup>5</sup>. Traffic speed data was taken from the provided data where possible. Where speed data for free flowing links was not provided, the speed limit is assumed as being representative of the annual average speed of vehicles on the road link. Where appropriate, speeds have been reduced to simulate queues at junctions and traffic lights. With the use of the various data sources there comes a need to present a unified baseline. Some of the data provided by the Council represent the traffic flows in 2014 and 2018. The base year for dispersion modelling assessment is 2017 representing the year at which the declaration of the city-wide AQMA was made. Therefore, the data for 2014 and 2018 were adjusted using the growth factor of 1.0105 and 1.0445 calculated based on TEMPro Factor and National Traffic Model (NTM) factor to give representative flows for 2017. This data was then input into version 9.0 of the Emissions Factors Toolkit<sup>6</sup>. Road-NO<sub>x</sub> contributions for each source type at receptor locations are then modelled using the ADMS-Roads (Version 4.1) atmospheric dispersion model developed by Cambridge Environmental

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<sup>5</sup> Department for Transport – Traffic Counts (2017) <http://www.dft.gov.uk/traffic-counts/>

<sup>6</sup> EFT\_9.0 Available at - <https://laqm.defra.gov.uk/review-and-assessment/tools/emissions-factors-toolkit.html>

Research Consultants (CERC), utilising various other inputs including meteorological data.

The modelling approach to pollutant concentrations determined only the traffic related contribution to pollution levels at discrete locations. In order to determine the overall pollutant concentrations (for reporting compliance) the background levels of pollutants are needed to be added to the vehicle contribution element.

Background pollutant concentrations, as derived for the area from the UK-Air background maps have been added to the ADMS-Roads modelled road source output to calculate predicted total annual mean concentrations of NO<sub>x</sub> and NO<sub>2</sub>. For each location the total NO<sub>x</sub> from all vehicle classes as well as the percentage attributable to background sources has been predicted.

The following section describes the source apportionment results in the Chester city centre AQMA. Figure 2.2 shows that road vehicles provide the largest NO<sub>x</sub> contribution, corresponding to 49.2% of the total NO<sub>x</sub>, followed by local background at 40.4% then regional background at 10.4%. This means CWAC should be able to influence up to 89.6% of total NO<sub>x</sub> concentrations with targeted intervention measures and policies within the Chester city centre AQMA.

Figure 2.2 – Average NO<sub>x</sub> contribution across all modelled receptors - general breakdown

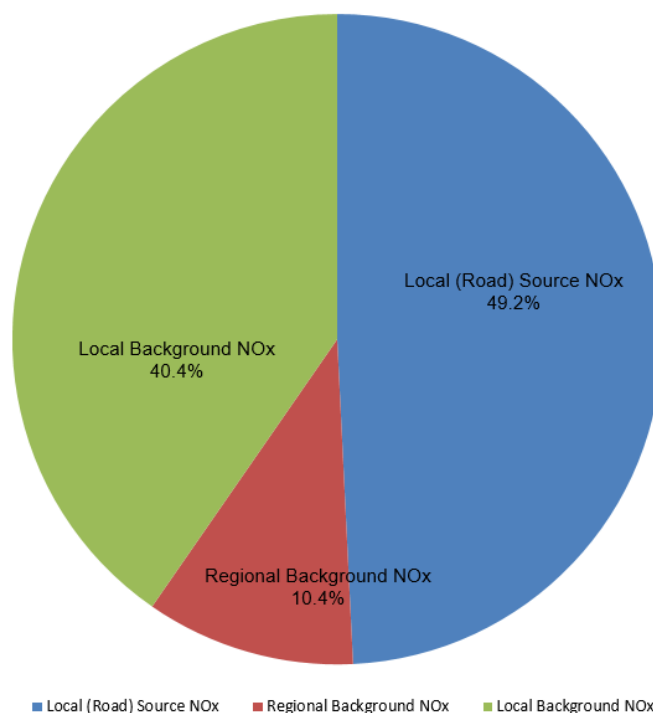


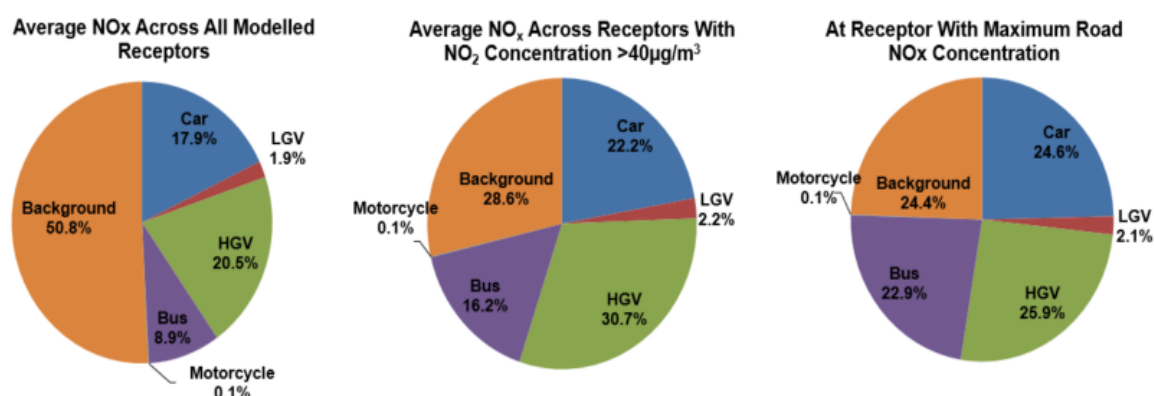
Table 2.2 and Figure 2.3 provide for a detailed breakdown of the localised road traffic emission sources and background sources in relation to NO<sub>x</sub> concentrations for the following criteria:

- Contributions based on average NO<sub>x</sub> levels across all modelled receptors;
- The average NO<sub>x</sub> levels across all receptors with annual mean concentration greater than 40 µg/m<sup>3</sup>; and
- Contributions based on NO<sub>x</sub> levels at the highest NO<sub>2</sub> concentration in the AQMA.

**Table 2.2 – Detailed source apportionment of NO<sub>x</sub> concentrations – Chester city centre AQMA**

Metric	All vehicles	Car	LGV	HGV	Bus	Motorcycle	Background
<b>Average across all modelled receptors</b>							
NO <sub>x</sub> concentration (µg/m <sup>3</sup> )	21.9	8.0	0.8	9.1	4.0	0.0	22.6
Percentage of total NO <sub>x</sub>	49.2%	17.9%	1.9%	20.5%	8.9%	0.1%	50.8%
Percentage contribution to road NO <sub>x</sub>	100.0%	36.3%	3.8%	41.6%	18.1%	0.1%	-
<b>Average across all receptors with annual mean concentration greater than 40 µg/m<sup>3</sup></b>							
NO <sub>x</sub> concentration (µg/m <sup>3</sup> )	62.3	19.4	2.0	26.8	14.1	0.1	25.0
Percentage of total NO <sub>x</sub>	71.4%	22.2%	2.2%	30.7%	16.2%	0.1%	28.6%
Percentage contribution to road NO <sub>x</sub>	100.0%	31.1%	3.1%	43.0%	22.7%	0.1%	-
<b>At receptor with maximum road NO<sub>x</sub> concentration</b>							
NO <sub>x</sub> concentration (µg/m <sup>3</sup> )	80.9	26.4	2.2	27.8	24.5	0.1	26.2
Percentage of total NO <sub>x</sub>	75.6%	24.6%	2.1%	25.9%	22.9%	0.1%	24.4%
Percentage contribution to road NO <sub>x</sub>	100.0%	32.6%	2.7%	34.3%	30.3%	0.1%	-

**Figure 2.3 – Pie charts showing source apportionment results**



When considering the average NO<sub>x</sub> concentration across all modelled receptors, road traffic accounts for 21.9µg/m<sup>3</sup> (49.2%) of the 44.5µg/m<sup>3</sup> average NO<sub>x</sub>

concentration. Of this 44.5µg/m<sup>3</sup>, HGV account for the most (20.5%) of any of the vehicle types, followed by cars (17.9%) and buses (8.9%).

When considering the average NO<sub>x</sub> concentration at receptors with annual mean concentration greater than 40µg/m<sup>3</sup>, road traffic accounts for 62.3µg/m<sup>3</sup> (71.4%) of the 87.3µg/m<sup>3</sup> average NO<sub>x</sub> concentration. Of this 87.3µg/m<sup>3</sup>, HGV account for the most (30.7%) of any of the vehicle types, followed by cars (22.2%) and buses (16.2%).

At the receptor with the maximum road NO<sub>x</sub> concentration (R45, Upper Northgate Street), road traffic accounts for 80.9µg/m<sup>3</sup> (75.6%) of the 107.0µg/m<sup>3</sup> maximum NO<sub>x</sub> concentration. Of this 107.0µg/m<sup>3</sup>, HGVs account for the most (25.9%) of any of the vehicle types followed by cars (24.6%) and buses (22.9%).

The above emphasises that localised road traffic sources are contributing to the exceedances reported within the AQMA. It can be seen that cars and HGVs are contributing the most to the high NO<sub>2</sub> concentrations and therefore this is where the traffic associated measures should be focussed.

## 2.4 Required reduction in emissions

In line with the methodology presented in box 7.6 of LAQM.TG(16), the necessary reduction in road NO<sub>x</sub> emissions required to bring the AQMA into compliance is calculated below, as shown in Table 2.3. This is done for the worst-case exposure location for the declared AQMA (receptor R45).

**Table 2.3 – NO<sub>x</sub> concentration reduction required at the receptor with maximum NO<sub>x</sub> concentration**

Metric	Value (concentrations as µg/m <sup>3</sup> )
Worst-case relevant exposure NO <sub>2</sub> concentration	53.7
Equivalent NO <sub>x</sub> concentration	107.0
Background NO <sub>x</sub>	26.2
Background NO <sub>2</sub>	18.0
Road NO <sub>x</sub> - current	80.9
Road NO <sub>x</sub> - required (to achieve NO <sub>2</sub> concentration of 39.9µg/m <sup>3</sup> )	46.2
Required road NO <sub>x</sub> reduction	34.7
Required % reduction	42.9%



## 2.5 Estimated compliance year

In line with the application of Defra's roadside NO<sub>2</sub> projection factors<sup>7</sup> to the model's predicted 2017 concentrations, Table 2.4 below shows that the year of compliance without intervention is estimated to be 2023.

**Table 2.4 – Estimated compliance year for annual mean NO<sub>2</sub> at the receptor predicted with maximum NO<sub>x</sub> concentration) based on roadside NO<sub>2</sub> projection factor**

Year	Projection Factor	Concentration
2017	1.000	53.7
2018	0.954	51.2
2019	0.908	48.8
2020	0.859	46.1
2021	0.808	43.4
2022	0.762	40.9
2023	0.723	38.8

<sup>7</sup> <https://laqm.defra.gov.uk/tools-monitoring-data/roadside-no2-projection-factor.html>

## 3. Cheshire West and Chester Council's air quality priorities

### 3.1 Public health context

Mounting scientific evidence shows the scale of the impact of poor ambient air quality on health. Although the links between air pollution as a direct cause of death are still the subject of much debate, poor air quality is considered to be a significant contributory factor to the loss of life, shortening lives by an average of 5 months. The Committee on the Medical Effects of Air Pollution (COMEAP)<sup>8</sup> provides advice to Government on the setting of air quality standards, and increasingly has sought to consolidate evidence on the health burden and impacts of various pollutants, both in single occurrence and pollutants in combination. The current range of estimate for annual mortality burden for man-made air pollution in the UK is estimated to be between 28,000 – 36,000 deaths.

Local authorities have a range of powers which can effectively help to improve air quality. However, the involvement of public health officials is crucial in playing a role to assess the public health impacts and providing advice and guidance on taking appropriate action to reduce exposure and improve the health of everyone in CWAC.

The air quality indicator in the Public Health Outcomes Framework (England) provides further impetus to join up action between the various local authority departments which impact on the delivery of air quality improvements. The document "Air Quality – A Briefing for Directors of Public Health"<sup>9</sup> published in March 2017 provides a one-stop guide to the latest evidence on air pollution, guiding local authorities to use existing tools to appraise the scale of the air pollution issue in its area. It also advises local authorities how to appropriately prioritise air quality alongside other public health priorities to ensure it is on the local agenda.

The document comprises the following key guides:

- Getting to grips with air pollution – the latest evidence and techniques;
- Understanding air pollution in your area;
- Engaging local decision-makers about air pollution;

<sup>8</sup> <https://www.gov.uk/government/collections/comeap-reports>

<sup>9</sup> <https://www.local.gov.uk/air-quality-briefing-directors-public-health>

- Communicating with the public during air pollution episodes;
- Communicating with the public on the long term impacts of air pollution; and
- Air Pollution: an emerging public health issue: Briefing for elected members.

For CWAC, the fraction of mortality attributable to air pollution<sup>10</sup> is 4.3%, which is similar to the national average of 5.3%. When combined with age standardised mortality rates per 100,000 in Cheshire West and Chester Council given by the office of national statistics<sup>11</sup>, an estimate of approximately 41 deaths per 100,000 per year is attributable to air pollution. It should be noted that this figure only accounts for one pollutant (PM<sub>2.5</sub>) for which stronger scientific evidence on links with mortality exist, and not NO<sub>2</sub>, for which the AQMA is declared, so the true figure is possibly even higher. With this in mind, COMEAP are currently reviewing the applicability of linking deaths to one specific pollutant, when occurrence of pollution is typically a mixture of different pollutants.

## 3.2 Planning and policy context

There are a number of related policies and strategies at the local and regional level that can be tied in directly with the aims of the AQAP. The policies and strategies which focus on sustainable transport, infrastructure and development are likely to help contribute to overall improvements in air quality across the CWAC area. The review of these strategies and policies also assist in not duplicating the work within the AQAP, but instead focus on direct measures outside those considered within the already developed strategies and policies, but that still contribute toward their overall aims.

The most relevant strategic documents are as follows:

### 3.2.1 Local Plan

The Cheshire West and Chester Local Plan was adopted on the 29<sup>th</sup> January 2015 and forms part of the statutory development plan for the borough. The Local Plan comprises two parts:

- Part One Strategic Policies

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<sup>10</sup> Specifically anthropogenic PM<sub>2.5</sub> (2016)

<sup>11</sup>

<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/deathsregistrationsummarytables/2017#age-standardised-mortality-rates-continued-to-decrease-in-2017>, 2016 used as was the year of PHOF indicator

- Part Two Land Allocations and Detailed Policies.

The core policies within Part One Strategic Policies which takes account of the need to mitigate any adverse impacts on air quality arising from development proposals are as follows:

**SOC 5 Health and well-being**

*Development that gives rise to significant adverse impacts on health and quality of life (e.g. soil, noise, water, air or light pollution, and land instability, etc) including residential amenity, will not be allowed.*

**STRAT 1 Sustainable development**

- *The Local Plan seeks to enable development that improves and meets the economic, social and environmental objectives of the borough in line with the presumption in favour of sustainable development. Proposals that are in accordance with relevant policies in the Plan and support the following sustainable development principles will be approved without delay, unless material considerations indicate otherwise:*
- *Mitigate and adapt to the effects of climate change, ensuring development makes the best use of opportunities for renewable energy use and generation.*
- *Provide for mixed-use developments which seek to provide access to homes, employment, retail, leisure, sport and other facilities, promoting healthy and inclusive communities whilst reducing the need to travel.*
- *Locate new housing, with good accessibility to existing or proposed local shops, community facilities and primary schools and with good connections to public transport*
- *Protect, enhance and improve the natural and historic environment whilst enhancing and restoring degraded and despoiled land, seeking opportunities for habitat creation.*
- *Encourage the use and redevelopment of previously developed land and buildings in sustainable locations that are not of high environmental value.*
- *Minimise the loss of greenfield land and high grade agricultural land.*
- *Support regeneration in the most deprived areas of the borough and ensure those reliant on non-car modes of transport can access jobs and services.*
- *Ensure the prudent use of our natural finite resources whilst promoting the re-use, recovery and recycling of materials.*

*The Council will always work proactively with applicants where proposals are not in accordance with the Plan to find solutions which mean that proposals can be made sustainable and approved wherever possible. However, proposals that fundamentally conflict with the above principles or policies within the Local Plan will be refused.*

*Where there are no Local Plan policies relevant to the application or relevant policies are out of date at the time of making the decision, the Council will grant permission unless material considerations indicate otherwise, taking into account whether any adverse impacts of granting permission would significantly and demonstrably outweigh the benefits when assessed against the National Planning Policy Framework, or specific policies in the Framework indicate that development should be refused.*

### **STRAT 3 Chester**

*Chester is the key economic driver for the borough and will deliver at least 5,200 new dwellings of which in the region of 1,300 dwellings will be provided through Green Belt release.*

*Development will enhance the city's role as a sub-regional shopping and leisure destination and support its role as an international tourism destination. Key retail and leisure proposals are:*

- the comprehensively planned development of the Northgate area for major leisure and retail uses.*
- a new theatre in the city centre to sustainably enhance the city's cultural offer.*

*Land at Wrexham Road is identified on the Policy Map to be removed from the Green Belt to facilitate the provision of around 1,300 new homes providing for a range and mix of housing types including affordable housing in line with Policy 'SOC 1 Delivering affordable housing', together with essential community infrastructure including the provision of a new primary school. Development should be brought forward in line with an agreed development brief for the site to ensure the delivery of a high quality urban extension and neighbourhood to Chester.*

*The Chester Business Quarter is identified as a broad location for mixed use, employment led regeneration to the east of the city centre. This will include in the region of 44,000 m<sup>2</sup> of high quality office floorspace adjacent to Chester Railway Station.*

**STRAT 10 Transport and accessibility**

*Transport and Accessibility*

*In accordance with the key priorities for transport set out in the Local Transport Plan, development and associated transport infrastructure should:*

- *Provide and develop reliable and efficient transport networks that support sustainable economic growth in the borough and the surrounding area*
- *Reduce carbon emissions from transport and take steps to adapt our transport networks to the effects of climate change*
- *Contribute to safer and secure transport and promote forms of transport that are beneficial to health*
- *Improve accessibility to jobs and key services which help support greater equality of opportunity*
- *Ensure that transport helps improve quality of life and enhances the local environment*

*In order to minimise the need for travel, proposals for new development should be located so as they are accessible to local services and facilities by a range of transport modes.*

*New development will be required to demonstrate that:*

- *Additional traffic can be accommodated safely and satisfactorily within the existing, or proposed, highway network*
- *Satisfactory arrangements can be made to accommodate the additional traffic before the development is brought into use*
- *Appropriate provision is made for access to public transport and other alternative means of transport to the car*
- *Measures have been incorporated to improve physical accessibility and remove barriers to mobility, especially for disabled and older people. The safety of all road users should be taken into account in the design and layout of new developments.*

*Opportunities to improve public transport facilities will be taken wherever possible, through improved services, interchange facilities and parking at railway stations.*

*Developments that would generate significant amounts of movement should be accompanied by a Transport Assessment and Travel Plan, in accordance with Council guidance.*

*New developments will be expected to provide adequate levels of car and cycle parking in accordance with the Council's parking standards, taking account of:*

- *The accessibility of the development*
- *The type, mix and use of the development*
- *The availability of, and opportunities for, public transport*
- *Local car ownership levels*

*Parking provision should support the viability of town centres whilst minimising traffic congestion.*

*Proposals should seek to maximise use of sustainable (low carbon) modes of transport, by incorporating high quality facilities for pedestrians, cyclists and public transport and where appropriate charging points for electric vehicles.*

*Opportunities will be sought to extend and improve access to local footpath and cycle networks, including greenways, canal towpaths and the Public Rights of Way networks.*

*Proposals for new industrial and warehousing development should maximise opportunities to transport products by non-road modes of transport. Sites alongside the Manchester Ship Canal, Weaver Navigation and rail network may be particularly suitable for freight use and these opportunities should be integrated into development proposals where feasible. Existing or potential freight movement opportunities will be safeguarded from development which could preclude continued or future freight use.*

*Current and disused transport corridors and infrastructure, including roads, railway lines, sidings and stations, will be safeguarded from development which would preclude their future transport use.*

### *Improvements to the Transport Network*

*Improvements to the transport network will be supported through schemes and strategies including the following:*

- *Chester Transport Strategy (Phase 1)*
- *Chester Bus Interchange as shown on the Policies Map*

- *New Bridge Road / A5117 link, Ellesmere Port as shown on the Policies Map*

*The Local Plan (Part Two) Land Allocations and Detailed Policies set out further non-strategic allocations and detailed policies, which support the strategic objectives and policies set out in the Local Plan (Part One).*

*The following policies are in relation to air quality:*

**CH 1 Chester settlement area**

*Within the defined settlement boundary of Chester as identified on the policies map, development proposals will be supported which are in line with the relevant development plan policies and are consistent with the following principles, where relevant, aimed at delivering the Local Plan (Part One) policy STRAT 3:*

- 7. supporting the Chester Cycling Strategy;*
- 9. development must not give rise to significant adverse impacts on air quality*

**DM 31 - Air quality**

*In line with Local Plan (Part One) policy SOC 5, development must not give rise to significant adverse impacts on health and quality of life, from air pollution. In particular, development proposals within or adjacent to an Air Quality Management Area will be expected to be designed to mitigate the impact of poor air quality on future occupiers.*

*An air quality assessment will be required for development proposals that have the potential for significant air quality impacts, including those which:*

- 1. are classed as major development and have the potential, either individually or cumulatively, for significant emissions; or*
- 2. are likely to result in an increase in pollution levels in an Air Quality Management Area (AQMA); or*
- 3. are likely to expose people to existing sources of air pollutants.*

*Where an air quality assessment identifies an unacceptable impact on or from air quality, an appropriate scheme of mitigation must be submitted, which may take the form of on-site measures or, where appropriate, a financial contribution to off-site measures.*



*Applicants must demonstrate that appropriate mitigation will be provided to ensure that the new development is appropriate for its location and unacceptable risks are avoided.*

*Development that is likely to produce an odour should demonstrate that there is no negative impact on residential amenity, in line with Local Plan (Part One) policy SOC 5 and Local Plan (Part Two) policy DM 2.*

*T5 – Parking and access*

*In order to ensure that appropriate provision is made for access and parking, development proposals will be supported which meet the requirements of Local Plan (Part One) policy STRAT 10 and which:*

- 1. make safe provision for access to and from the site for all users of the development, including the provision of access to adopted highways, visibility splays and accompanying signage where necessary;*
- 2. allow for safe movement within the site, having regard to the requirements of the emergency services and service providers, including sufficient manoeuvring and standing space for the appropriate number and size of vehicles likely to serve the development at any one time;*
- 3. will not create any unacceptable impacts on amenity or road safety that cannot be satisfactorily mitigated by routeing controls or other highways improvements;*
- 4. are designed to incorporate measures to assist access to and around the site by pedestrians, cyclists and to meet the needs of people with disabilities;*
- 5. provide sufficient parking facilities to serve the needs of the development and have regard to the Council's latest adopted parking standards for cars and other vehicles as necessary, including cycles;*
- 6. provide appropriate charging infrastructure for electric vehicles in new developments.*

*The Council will encourage improved parking facilities for residents and their visitors in older housing areas and to serve railway stations, where a clear need for such facilities can be demonstrated.*

*Redevelopment of existing public car parks will only be supported where adequate alternative provision is available or capable of being provided.*

*Proposals for developments that provide coach parking/facilities, in line with the Council's latest adopted strategy will be supported.*

### **3.2.2 Wellbeing Strategy 2015-2020**

The Council's Health and Wellbeing Strategy was adopted in 2015 and set out a vision:

*"To reduce health inequalities and improve the health and wellbeing of people in the borough, enabling our residents to live more fulfilling, independent and healthy lives. We will do this by working with communities and residents to improve opportunities for all to have a healthy, safe and fulfilling life"*

The strategy includes four priorities, one of which is Living Well. The outcome of this priority is to ensure people have healthier lifestyles, which include Air Quality as one of indicators to achieve this priority.

### **3.2.3 Low Emission Strategy (2017 - 2020)**

The Low Emission Strategy (2017 – 2020) (LES) was published in September 2018 and work has started on a number of its constituent measures. The LES covers a broad range of measures for targeting the reduction of NO<sub>2</sub> and PM<sub>10</sub> emission and at the same time target the reduction in carbon emission. The measures are based upon the following three key principles:

- Shift: change mode from cars to public transport, cycling and walking;
- Avoid: reduce vehicle kilometres driven, emissions from stationary vehicles, chimneys and construction; and
- Improve: improve the vehicle technology to reduce emissions and specifically low emission vehicles (LEVs).

Measures outlined in the strategy include examining the feasibility of introducing clean air zones within the borough, including the option to charge for the use of certain vehicles.

Consideration is also given to the use of fixed penalty notices to prevent vehicle idling across the borough.

The council will also investigate the adoption of a standards policy for use of non-road mobile machinery (NRMM) on construction sites in a bid to limit NO<sub>x</sub> emissions

from plant used on such sites across the borough, as well as working with developers to ensure that new construction projects do not result in elevated emissions levels.

Plans are also in place to assess the requirements for greater uptake of low emission vehicles within the borough as well as measures to encourage the use of low emission buses by local bus operators.

### **3.2.4 Local Transport Strategy (2017-2030)**

Cheshire West and Chester Council's published its Local Transport Plan (LTP3) in March 2011. This set out our over-arching strategy and objectives for improving local transport in the borough for the next 15 years. There have been many significant changes to both the national and local transport agenda since 2011 and, as a statutory document, the Council has a duty to keep the LTP under review to ensure that it remains relevant. As a result, the LTP was updated, to account for the changes that have occurred since 2011 and to respond to the likely challenges and opportunities that are to come in the years ahead. This Transport Strategy sets out the following goals and supporting objectives for transport in the borough.

The top priorities:

- Provide and develop reliable and efficient transport networks that support sustainable economic growth in West Cheshire and the surrounding area.
- Reduce carbon emissions from transport and take steps to adapt our transport networks to the effects of climate change.
- Manage a well maintained transport network.

The supporting priorities:

- Contribute to safer and secure transport in West Cheshire and to promote types of transport that are beneficial to health: Encourage healthier lifestyles by promoting more active forms of transport such as cycling and walking and work to reduce transport related air quality problems;
- Improve accessibility to jobs and key services which help support greater equality of opportunity: Ensure that new developments and local services are built in accessible locations;
- Ensure that transport helps improve quality of life and enhances the local environment in West Cheshire: Ensure that new transport schemes

complement local character and enhance the built and natural environment and biodiversity and promote access to leisure activities by improving pedestrian, cycle, greenway and public rights of way networks.

There are currently three AQMAs in Cheshire West and Chester where local traffic is the primary source of the poor air quality, therefore, the delivery of the strategy will have strong direct impact on air quality.

### **3.3 Key priorities**

Based on the above information, the AQAP measures have been divided into five targeted categories, although there is often some overlap between some of the categories:

- **Priority 1: Transport** – Provision of additional transport infrastructure; changes to road layout or operation; formulation of traffic plans with the aim being to encourage the use of greener modes of transport, and/or reduce congestion and associated vehicle emissions
- **Priority 2 – Public health** – Encouragement of wider behavioural changes in local population with respect to their travel choices, raise awareness and educate members of the public on the impact of air pollution
- **Priority 3 – Planning and infrastructure** – Mitigate potential air quality impacts effectively by being involved in decision making early on for future developments required to support the growth of CWAC.
- **Priority 4 – Strategies and policy guidance** – Working with partners and stakeholders to direct the use of legislation and targeted enforcement to control air pollution
- **Priority 5 – Air quality monitoring (evidence for improvement)** – Ensure satisfactory air quality monitoring data is available to track outcomes of the implemented AQAP measures.

#### **3.3.1 Priority 1: Transport**

The main source of air pollution within the AQMA is associated with road transport emissions. Therefore, reducing transport emissions through the measures contained within the action plan are a key priority. The approach taken focuses on HGVs, cars

and buses as the source apportionment results suggest HGVs account for the most emissions of NO<sub>x</sub> of any of the vehicle type, followed by cars and buses. Promoting sustainable modes of transport will be of great importance to ensure the numbers of vehicles on the road do not continue to increase. Modal shift away from private vehicle use; a move to tighter emissions standards of buses; and the promotion and enhancement of cycling and walking as healthy alternatives to car journeys form important aspects of this Plan. Moreover, working with wider partners such as bus operators / freight operating company to introduce and encourage low emission vehicles also play important roles in reducing emissions within the AQMAs.

### **3.3.2 Priority 2: Public health**

As discussed in further detail in section 2, the impact of air pollution on public health is the major reason to improve air quality. The main source of air pollution within Cheshire West and Chester Council is road traffic. It is accepted that the most effective way to achieve this is to change the attitudes/ behaviour towards travel. The Council seeks to encourage and facilitate these changes through education and awareness as well as through schemes which incentivise change. Improving air pollution to ensure the health of the public is maintained requires a wide reaching perspective and will therefore not be specific to the AQMA but will instead aim to have a wider impact on the whole borough.

### **3.3.3 Planning and infrastructure**

Policies in the Local Plan outline the generic considerations that will be applied when considering all development proposals. The delivery of key infrastructure of the right type, in the right place, and, at the right time, is vitally important to supporting growth and delivery of truly sustainable development. The Council will work with developers and partner organisations to ensure the delivery of infrastructure, services and community facilities necessary to develop and maintain sustainable communities; and will require provision of infrastructure and infrastructure improvements which are necessary to make development acceptable to be delivered in association with those developments.

### **3.3.4 Strategies and policy guidance**

Emissions associated with road traffic are a significant contributor to the elevated NO<sub>x</sub> background concentration, therefore, the strategies and policy on reducing emissions across Chester city centre will be effective in NO<sub>x</sub> emission reduction.

The Low Emission Strategy (LES) was published in September 2018 and covers a variety of measures focused on modal shift, reduction of emissions from both vehicles and stationary sources and improvement areas such as electric vehicle (EV) charging infrastructure and emissions from public transport / licensed vehicles. It is anticipated that measures contained in the LES will deliver significant improvements in local air quality over time. In support of the aspirations of the LES, the Council has committed significant resources from the Priority Outcomes Fund to undertake a public awareness campaign, accelerate the rollout of EV charging infrastructure, web site development and human resources.

Also, the taxi and private hire policy will be reviewed in 2019-20 to encourage the uptake of ultra low emission vehicles (ULEVs) in line with the LES.

### **3.3.5 Affordable air quality monitoring (evidence for air quality improvement)**

Currently, CWAC monitors NO<sub>2</sub> within the AQMA using passive diffusion tubes and continuous monitoring stations. Air quality monitoring is a useful way to fully appreciate the extent of the air pollution problem in Cheshire West and Chester Council. It can also assist in quantifying the improvements that have materialised as a consequence of implementing measures to reduce emissions.

## 4. Development and implementation of CWAC AQAP

### 4.1 Consultation and stakeholder engagement

In developing this AQAP, we are dedicated to working with other local authorities, agencies, businesses and the local community to improve local air quality. Schedule 11 of the Environment Act 1995 also requires local authorities to consult the bodies listed in Table 4.1 during the preparation of this AQAP.

**Table 4.1 – Consultation undertaken**

<b>Consultee</b>
the Secretary of State
the Environment Agency
the highways authority
all neighbouring local authorities
other public authorities as appropriate, such as Public Health officials
bodies representing local business interests and other organisations as appropriate
members of the public

This draft AQAP forms the basis of the current consultation exercise on which relevant views are being sought from a wide range of stakeholders, including statutory consultees; local businesses; members of the public; neighbouring councils and any other interested parties.

The subsequent outcomes of the consultation will be used to influence the decisions on which measures will be developed and implemented, and the continued process of reporting and scrutiny for assessing the success of the plan in its implementation stage.

## 4.2 Steering group

This draft AQAP has been developed through collaboration of a working group established by CCWC in the summer 2019, with a number of measure sifting workshops forming the basis for the current long-list of measures. The working group has been led by Regulatory Services staff at CWAC. Membership of the group includes representatives from the following Council service departments:

- Licensing;
- Transport Commissioning;
- Regulatory;
- Parking;
- Strategic Transport;
- Planning Policy;
- Planning – Development Control;
- Economic Development;
- Highways;
- Fleet Management; and
- Public Health.

The working group reports to the air quality steering group which was established in 2016 and is chaired by the Director of Place Operations. The group meets at regular intervals and the Chair is responsible for reporting progress updates to the Chief Executive and Leader of the Council.

Bureau Veritas – experts in the field of air quality – have provided support on the science and evidence of understanding the extent and nature of compliance, and undertaken assessment work to inform the focus on the measures within the plan through the dispersion modelling which has led to the source apportionment outcomes discussed in previous sections.



## 5.AQAP measures

Table 5.1 presents the CWAC AQAP measures presently under consideration at this stage of development of the AQAP. It contains:

- a list of the actions that form part of the plan;
- the responsible individual and departments/organisations who will deliver this action;
- expected benefit in terms of pollutant emission and/or concentration reduction
- the timescale for implementation;
- how progress will be monitored.

**NB:** Please see future ASRs for regular annual updates on implementation of these measures.

Table 5.1 – Air Quality Action Plan Measures

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Key Performance Indicator	Target Pollution Reduction in the AQMA
1	Freight Partnerships for city centre deliveries	Freight and Delivery Management	Freight Partnerships for city centre deliveries	CWCC & Freight operating company	HGV usage	NO <sub>2</sub> Emission Reduction
2	Freight delivery and service plans, e.g. work with local distribution centres to change delivery routes/reduce emissions	Freight and Delivery Management	Delivery and Service plans	CWCC & Freight operating company	HGV usage	Reducing emissions contribution from HGVs, reduced queuing traffic in peak hours
3	Strategic Routing of HGVs / Freight	Freight and Delivery Management	Route Management Plans/ Strategic routing strategy for HGV's		Reduction in traffic passing through the AQMA	NO <sub>2</sub> Emission Reduction
4	HGV/LGV recognition schemes, ECO Stars	Promoting Low Emission Transport	Fleet efficiency and recognition schemes	CWCC & Freight operating company	Number of HGV/LGV operators participated the scheme	NO <sub>2</sub> Emission Reduction
5	Collaborating with freight operators to introduce low emission vehicles into the LGV and HGV fleet	Promoting Low Emission Transport	Promoting Low Emission Transport		Number of low emission HGVs/LGVs	NO <sub>2</sub> Emission Reduction

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Key Performance Indicator	Target Pollution Reduction in the AQMA
6	Collaborating with bus operators to introduce ultra-low emission vehicles into the bus fleet (new or retrofit). Target use of ULEV into the problem areas	Promoting Low Emission Transport	Vehicle Retrofitting programmes		Number of ultra-low emission bus fleets introduced	NO <sub>2</sub> Emission Reduction
7	Retrofitting or upgrade of private hire vehicles / taxis to LPG/retrofitting subsidies for local cab owners	Promoting Low Emission Transport	Taxi emission incentives		Number of the taxi/private hire vehicle retrofitted	NO <sub>2</sub> Emission Reduction
8	Update taxi / private hiring policy	Promoting Low Emission Transport	Other	CWCC		NO <sub>2</sub> Emission Reduction
9	Low Emission Zone / Clean Air Zone	Promoting Low Emission Transport			The implementation of Low Emission Zone / Clean Air Zone	NO <sub>2</sub> Emission Reduction
10	Alternative fuel (EV) infrastructure development in town centre	Promoting Low Emission Transport	Low Emission Vehicles, EV recharging, Gas fuel recharging		Number of alternative fuel (EV) infrastructure development in the town centre	NO <sub>2</sub> Emission Reduction
11	Procuring low emission vehicles for council-owned fleets	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles		Number of council-owned low emission fleets	NO <sub>2</sub> Emission Reduction

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Key Performance Indicator	Target Pollution Reduction in the AQMA
12	Work together with developers to promote the inclusion of electric charging points for electric/hybrid vehicles at new development sites	Promoting Low Emission Transport	Producing alternative refuelling infrastructure to promote low emissions vehicles, EV recharging, gas fuel recharging	CWCC	Number of planning applications where charging points have been secured	NO <sub>2</sub> Emission Reduction
13	Public transport infrastructure improvements, e.g. - Enhanced bus shelters - Accurate electronic timetables - m-tickets / contactless payment options	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure		% modal shift to car share/public transport	NO <sub>2</sub> Emission Reduction
14	Incentivise public transport usage, e.g. - Provision of information about existing services - Campaigns - Season ticket loan/discounts - Subsidised tickets	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure		% modal shift to car share/public transport	NO <sub>2</sub> Emission Reduction
15	Behaviour change campaigns to reduce single occupancy car trips	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure		% modal shift to car share/public transport	NO <sub>2</sub> Emission Reduction

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Key Performance Indicator	Target Pollution Reduction in the AQMA
16	Flexible working and home working encouraged	Promoting Travel Alternatives	Encourage / Facilitate home-working	CWCC	Number of people working from home	NO <sub>2</sub> Emission Reduction
17	Promoting Car Club / Car Sharing Schemes/ Car Pooling	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	CWCC	% modal shift to car share/public transport	NO <sub>2</sub> Emission Reduction
18	Park and Ride Schemes with Euro VI Vehicles	Alternatives to private vehicle use	Bus based Park & Ride		% modal shift to car share/public transport	NO <sub>2</sub> Emission Reduction
19	Encouraging residents and visitors to use car share and public transport	Alternatives to private vehicle use	Car & lift sharing schemes	CWCC	% modal shift to car share/public transport	NO <sub>2</sub> Emission Reduction
20	On and off-street parking charges linked to vehicle emission standards - including any residents permits.	Traffic Management	Workplace Parking Levy, Parking Enforcement on highway		Improve traffic management	NO <sub>2</sub> Emission Reduction
21	Waiting and loading restrictions / Keep clear zones	Traffic Management	Other		Improve traffic management	NO <sub>2</sub> Emission Reduction
22	Parking restrictions	Traffic Management	Other		Improve traffic management	NO <sub>2</sub> Emission Reduction

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Key Performance Indicator	Target Pollution Reduction in the AQMA
23	Traffic signal control for smoother traffic movement at the main junctions within AQMA, e.g. install Smart Traffic Lights	Traffic Management	UTC, Congestion management, traffic reduction		Improve traffic movements	NO <sub>2</sub> Emission Reduction
24	Implementation of bus lanes/Low Emission Vehicle Lane	Traffic Management	Selective vehicle priority		Number of bus lanes/Low Emission Vehicle Lane implemented	NO <sub>2</sub> Emission Reduction
25	Improve signage at main junctions within the AQMA	Transport Planning and Infrastructure	Other		Improve traffic management	NO <sub>2</sub> Emission Reduction
26	Signage and cycle route/parking	Transport Planning and Infrastructure	Cycle network		Improve traffic management	NO <sub>2</sub> Emission Reduction
27	Work together with developers to improve sustainable transport links serving new developments	Transport Planning and Infrastructure	Other	CWCC & Developer	Number of the developments providing sustainable transport links serving new developments	NO <sub>2</sub> Emission Reduction
28	Education and eco-driving courses to train fleet drivers to drive in a way that minimises emissions	Vehicle Fleet Efficiency	Driver training and ECO driving aids	CWCC	Number of drivers trained	NO <sub>2</sub> Emission Reduction

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Key Performance Indicator	Target Pollution Reduction in the AQMA
29	Provision of high quality, bespoke and accessible information on sustainable travel, e.g. on a dedicated travel website with route/mode options	Public Information	Via the Internet	CWCC	Number of hits on upgraded website per annum	NO <sub>2</sub> Emission Reduction
30	Local air quality monitoring within the unitary authority to ensure a high standard of data is achieved	Public information	Other	CWCC	Number of monitoring locations	-
31	Low Emissions Strategy	Policy Guidance and Development Control	Low Emissions Strategy	CWCC	The implementation of Low Emissions Strategy	NO <sub>2</sub> Emission Reduction
32	Anti-idling enforcement at all on-street locations	Traffic Management	Anti-idling enforcement	CWCC	Idling reduction	NO <sub>2</sub> Emission Reduction

## 6. Glossary of terms

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
CERC	Cambridge Environmental Research Consultants
Defra	Department for Environment, Food and Rural Affairs
EU	European Union
HGV	Heavy Goods Vehicles
IT	Information Technology
LAQM	Local Air Quality Management
CWAC	Cheshire West and Chester Council
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
TEMPro	Trip End Model Presentation Program